

# Global Climate Change Policy Tracker: An Investor's Assessment

Detailed Analysis of Targets by Region and Country

October 2009



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**DB Climate Change Advisors**  
Deutsche Bank Group



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# How to Use the Individual Policy Analysis

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## Organization

This analysis of 269 policies covers both emissions targets and mandated renewable, industry and sector targets. We rate the latter, while we simply collect the former and measure their abatement impact.

The targets are divided into 8 world regions. The order of the document is:

- Africa
- Asia
- Europe: EU Member States
- Europe: Non-EU Member States
- Latin America
- North America – Canada
- North America – United States
- Oceania

Within each macro region, targets are grouped together at the country level. Where sub-national targets are in place, these are included after national targets.

## How to read the tables

Each target is described using a template. We have developed separate templates for emissions targets, which we collect, and renewable, industry and sector targets, which we rate. The template attempts to present a brief description of each target, in the style of an encyclopedia entry. While each target template references other targets, we have attempted to make each template stand alone. Therefore, for related targets, information may be repeated in multiple templates where it is relevant.

The components of each template are explained in exhibits 1 and 2.

# How to Use the Individual Policy Analysis

## EX 1: Sample emissions target template

Region – only appears at the beginning of each region	<b>Oceania</b>	Target number
Country/Region – identifies the geography the target applies to	<b>New Zealand</b>	Policy Type – describes the legal status of the policy, as described below
Policy Name/Description – briefly describes the target	<b>International Treaty</b>	Date Announced – date the target was officially announced
Target Date – date for target implementation	<b>Kyoto Protocol: 0% change in greenhouse gas emissions from 1990 levels for the period 2008-2012</b>	CO <sub>2</sub> Abatement Potential – documents the abatement potential of the target in 2012 or 2020
Policy Category – describes what kind of emissions target or mandate the target is, as described below	<b>2002</b>	Supporting Policies: Mandates and Incentives – cross-references policies, as well as other targets, that support the target
Commentary – describes the target in more detail and provides an overview of current performance against the target	<b>2008-2012</b>	
	<b>15 MT of abatement in 2012</b>	
	<b>Emissions target: No carbon price</b>	
	<b>National Renewable Portfolio Standard (Target 268); and national lighting efficiency standard (Target 269).</b>	
	<b>According to an April, 2009 government report, New Zealand is on target to easily achieve its Kyoto target for cutting greenhouse gases as a result of drought and a reassessment of its forests. The country expects to produce 9.6 MT less of CO<sub>2</sub> and other greenhouse gases than allowed in the Protocol's 2008-2012 period.</b>	
	<b>However, previous estimates have not been as optimistic. A report from 2008 indicated that New Zealand would have a greenhouse gas deficit of around 21.7 MT. This discrepancy indicates some level of uncertainty around the estimates.</b>	

# How to Use the Individual Policy Analysis

## EX 2: Sample renewable, industry and sector target template

**Europe**  
Target 78

**Target number**

**Region** – only appears at the beginning of each region

**Country/Region** – identifies the geography the target applies to

**Policy Name/Description** – briefly describes the target

**Target Date** – date for target implementation

**Policy Category** – describes what kind of emissions target or mandate the target is, as described below

**Supporting Policies: Mandates and Incentives** – cross-references policies, as well as other targets, that support the target

**Overall Risk Assessment** – provides the overall risk rating

<b>Country/Region</b>	France	
<b>Policy Type</b>	Legislative	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 23% share of renewables in gross final energy consumption by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	50 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 76	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national tax credits; national capital grants for biofuels; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5) Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</b>	<b>Incentives: 1</b>	<b>Sovereign Credit Risk: 1</b>
	<b>Public Financing: 1</b>	<b>Integrated Plan: 1</b>
	<b>Enforcement: 3</b>	<b>Implementation Capacity: 1</b>
	<b>Monitoring: 1</b>	<b>Historical Achievement: 2</b>
<b>Overall Risk Assessment</b>	1	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. France's share of the target is to reach 23% renewables in gross final energy consumption by 2020.</p> <p>France has a detailed plan in place on how it expects to meet the 2020 target.</p> <p>Supporting policies for renewables include some of the most generous feed-in tariffs in the world. The tariffs were introduced in 2001 and 2002 and modified in 2005 and 2006. Changes to the country's system of Advanced Renewable Tariffs in 2006, raised the base tariff from €0.15 to €0.30 per kWh, resulting in many new renewable energy projects. A new feed-in tariff category for solar PV in commercial buildings of €0.45 per kWh was introduced in November, 2008. Tariffs will remain in place until 2012. There is also a 50% tax credit available for residential solar PV systems and a tender system for large renewable projects.</p> <p>A Renewable Energy Heat Fund is also due to be launched in 2010 to support the production of heat from geothermal, biogas and solar thermal collectors. The French Ministry has also announced a plan to boost hydropower as part of the country's goal to have 23% renewables.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p>	

**Policy Type** – describes the legal status of the policy, as described below

**Date Announced** – date the target was officially announced

**CO<sub>2</sub> Abatement Potential** – documents the abatement potential of the target in 2012 or 2020

**Related Emissions Target(s)** – cross-references emissions targets from the same geography

**Investor Risk Assessment Rationale** – provides detailed rating.

**Commentary** – describes the target in more detail and provides an overview of current performance against the target

# How to Use the Individual Policy Analysis

## Policy category

Two sets of targets are analyzed in this document: Emissions targets, and mandated renewable, industry and sector targets. In the policy category box of each target template, we identify seven policy categories under these two overarching headings:

### **Emissions targets**

- Emissions target: No carbon price
- Emissions target: Cap-and-trade
- Emissions target: Carbon tax

### **Mandated renewable, industry and sector targets**

- Renewable Portfolio Standard: Energy
- Renewable Portfolio Standard: Electricity
- Renewable Fuel Standard
- Sector/Industry Specific Regulation

## Policy type

The targets analyzed in this paper have varying legal status. We call this “policy type” in the tracker. The six policy types we identify are:

- International treaty – binding treaty signed by sovereign states;
- Legislation – law passed by a legislature. If a law is still under consideration, “proposed legislation” is used;
- Executive order – policy issued by a president, governor or other government executive;
- Regulation – obligation placed on market participants by regulatory authorities;
- Government Aspiration – an official goal or strategy that has been announced by a government that has not yet been given legal authority;
- Voluntary – targets with no legally binding status.

## Target collection

To collect the 269 targets detailed in this paper we spent six months carrying out an exhaustive search of reliable, third-party, published sources including:

- IEA databases;
- Government websites from environment, climate and energy departments;
- National plans;
- Research from Multilateral Development Banks, including the World Bank, as well as the IMF;
- Mainstream news sources, including The New York Times, The Times, The Financial Times, The Wall Street Journal, The Guardian, The Independent, Newsweek, The Economist, Time, Business Week, and other publications;
- Climate subscription research websites, including REN21 and the IEA;
- Research published by think tanks, such as the Center for American Progress and the Institute for Public Policy Research.

## How to Use the Individual Policy Analysis

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We split the target collection into 8 main regions: Africa, Asia, Europe: EU Member States, Europe: Non-EU Member States, Latin America, North America – Canada, North America – US, and Oceania, splitting targets by country and sub-dividing some main areas into the larger sub-political or geographical regions.

Targets were collected for each country within these areas in a top down approach starting with emission targets set at the international level and filtering down to renewable, industry and sector country/region targets. Although we endeavored to be as exhaustive as possible, we set as a priority the collection of emissions, renewable, industry and sector targets for major developed economies and high-income developing economies, as defined by the World Bank, as these are likely to have the greatest impact on global emission levels. While Brazil is classified as an upper-middle-income economy, and India is classified as lower-middle-income economy, their size, rapid development and potential impact on global emissions justified making sure their targets were captured as fully as possible in this document.

While we are confident in our target list, some targets for some countries may not have been captured owing to limitations of data available in the public domain. Our search was conducted for policies enacted through June, 5th, 2009. While additional targets and enabling policies may have been implemented between this date and publication of the paper, the constraints imposed by modeling emissions pathways have not allowed us to capture these.

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Africa

### Target 1

Country/Region	Algeria	
Policy Type	Government aspiration	
Policy Name/Description	6% of electricity from renewables by 2015.	
Date Announced	2006	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National capital grants; national bonus scheme; national feed-in tariffs.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 3
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>A number of disparate plans seem to be coming together, including the Desertec proposal to generate electricity from solar power for export to Europe. However, these still need to be integrated into an overall national energy plan.</p> <p>Algeria has established a bonus of up to 200% of the price of electricity as set by the market operator for solar-thermal power (when used in conjunction with hybrid gas systems), waste-to-energy, and hydro. Wind power and solar thermal or PV benefit from a 300% bonus.</p> <p>The Algerian Electricity and Gas Regulation Commission is charged with implementation, as well as reporting annually on progress.</p> <p>In 2004, Algeria had no renewable utilization. Now, it uses solar power in 18 scattered off-grid villages, with 16 more scheduled to come on-line in 2009.</p>	



# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 2

Country/Region	Algeria	
Policy Type	Government aspiration	
Policy Name/Description	Export 6,000 MW of solar to Europe by 2020	
Date Announced	March, 2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	15 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National capital grants; national bonus scheme; national feed-in tariffs.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 3
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>Algeria plans to build a 3,000 kilometer cable between the Algerian town of Adrar and the German city of Aachen to export the 6,000 MW of solar thermal power. Construction has already begun on a 150 MW natural gas/solar hybrid plant, where the gas takes over entirely at night when there is no sunlight. It should be completed in 2010. Construction of the undersea cables linking the Sahara to Europe is planned for 2010-2012, but funding has not yet been allocated to the project.</p> <p>The National Oil Company of Algeria has set up a company, New Energy Algeria, to manage the development and exports of its solar energy. This initial move has attracted interest from Desertec, a consortium including Deutsche Bank, Siemens, ABB, E.ON, RWE, Munich Re, Abengoa Solar, Cevital, HSN Nordbank, M+W Zander Holding, MAN Solar Millennium and Schott Solar. However, at this early stage, the timeframe and precise structure of the collaboration remains to be determined.</p> <p>Africa-Investor notes that no funding is yet in place for the two new undersea cables that are expected to link Algeria to Spain and Sicily in 2012.</p> <p>In 2004, Algeria had no renewable utilization. Now, it uses solar power in 18 scattered off-grid villages, with 16 more scheduled to come on-line in 2009.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 3

Country/Region	Cape Verde	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	Greening Cape Verde: 25% renewables in national energy production by 2010 and 50% by 2020; achieve 100% renewable electricity on one island over the same period	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Proposed national tax rebates; national renewable energy law.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Greening Cape Verde was introduced in 2008 with the aim to reduce reliance on oil imports, free national resources to support poverty reduction and achievement of Millennium Development Goals, and raise the share of renewable energy resources in the production of power and desalinated water. Full details of the plan could not be found from a search of publicly-available information.</p> <p>The only supporting incentive for renewable development, a 25% tax rebate, is not expected to be implemented until 2011. The next step in Cape Verde's strategy would be the implementation of a renewable energy law, but as of 2009 this has not yet occurred.</p> <p>The Department of Industry and Energy states that the scale-up of renewables will be guaranteed by the wind farms planned for Sao Vicente, Santiago, Sal and Boa Vista which have already gone to bid and the financing for which will be guaranteed through public-private partnerships.</p> <p>The government will report periodically on implementation of the plan.</p> <p>Several projects are currently at the implementation stage, including a 28 MW wind farm project spread over 4 islands, one pilot project on ocean waves with 50 KW of installed capacity, and one solar PV project with 1.5 MW of installed power capacity.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 4

<b>Country/Region</b>	<b>Egypt</b>	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	20% of electricity from renewable sources by 2020 (including 12% wind)	
<b>Date Announced</b>	February, 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National power-purchase agreements; national feed-in tariffs; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In February, 2008, the Supreme Council of Energy in Egypt adopted an ambitious plan to cover 20% of generated electricity by renewables by 2020, including 12% from wind power.</p> <p>As of end of February, 2009, 370 MW of wind was already connected to the grid, 180 MW was under construction, and 720 MW was in the pipeline. The Egyptian electricity sector has drafted a new electricity act to encourage renewable energy utilization and private sector investment. Proposed policies are broken into 2 phases. Phase 1 will adopt a competitive bids approach, where tenders will be issued to the private sector to supply power from renewables. The financial risk for investors will be reduced by guaranteeing long-term power purchase. The tender documents are set to be finalized in 2009 in cooperation with the World Bank. Phase 2 will see feed-in tariffs introduced.</p> <p>Egypt benefits from the \$5.2 billion Clean Technology Fund, which is a multilateral fund managed by the World Bank. The Egyptian government is using \$100-120 million of Clean Technology Fund money to promote its renewable energy agenda.</p> <p>In 1986 the New &amp; Renewable Energy Authority (NREA) was established to act as the national focal point for development of renewable energy technologies.</p> <p>15% of power generation came from renewables in 2005, with the vast majority of this from hydro power.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 5

Country/Region	Libya	
<b>Policy Type</b>	Proposed government aspiration	
<b>Policy Name/Description</b>	10% of electric demand to come from renewable sources by 2020	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 3
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>Libya has proposed a plan for growing renewable electricity to cover 10% of electricity demand by 2020. However, the Libyan Government appears to be more focused on fossil fuel projects, such as \$5 billion facility called Energy City Libya, announced in 2008, which will be built to capitalize on Libya's oil and gas reserves.</p> <p>In addition to developments of fossil fuel projects the country is only just starting to put in place incentives for the use and development of renewable energy. National energy policies and regulatory frameworks are needed that will help to create the necessary economic, social and institutional conditions in the energy sector to spur growth in the renewable energy sector.</p> <p>The share of electricity from renewables in Libya is very small. It is mainly used to electrify rural areas. According to the EIA's summer, 2009 review Libya's energy consumption mix has remained relatively constant throughout the decade, with approximately 70 percent of energy demand being met by oil and 30 percent by natural gas.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 6

Country/Region	Madagascar	
Policy Type	Government aspiration	
Policy Name/Description	75% of electric power to come from renewables by 2020	
Date Announced	2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National tax exemptions; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 3
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 3
Overall Risk Assessment	<b>3</b>	
Supporting Commentary	<p>In 2008, Madagascar pledged that by 2020, 75% of the electric energy in the country would come from renewable sources, mainly hydropower. Given other priorities, such as internal security concerns, there is increased delivery risk around the renewable target.</p> <p>The government plans to exempt central equipment for the production of renewable energies from taxes. Concessions for hydropower plants up to 50MW will also be provided.</p> <p>The Ministry of Energy and Mines is responsible for the management of the government's energy policy. Monitoring of renewable energy arrangements in the country appears to be carried out by external international agencies.</p> <p>As of 2003, Madagascar had virtually no renewable energy production.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 7

Country/Region	Mali	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	15% contribution of renewable sources to the national energy assessment by 2020	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Multilateral funding; Tax exemptions	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:3	Sovereign Credit Risk: 3
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>The National Water and Energy Directorate is Mali's government institution responsible for implementing national policy, regulating the energy sector and planning large scale energy projects. According to a World Bank report on project financing in Mali, the current business and investment climate need to be improved in order to enable Mali to fulfill its potential.</p> <p>Some programs, including the Domestic Energy Strategy, Solar Water Supply and Street Lighting, Multifunctional Platforms, Villages' Electrification, and Improved SEWA Stoves have been initiated. These initiatives could help spur investments in renewable energy in Mali, but they are not necessarily well aligned to meet the overall renewable target.</p> <p>The Global Environment Facility approved a \$16.41 million renewable energy project in Mali in 2002. The project is jointly managed by the World Bank and the United Nations Development Program. Monitoring of renewable energy arrangements in the country appears to be carried out by external international agencies.</p> <p>Domestic energy resources in Mali consist of biomass, hydro, solar and wind. Only biomass for household energy and hydro for electricity generation are currently exploited at scale. In 2006, only 1% of energy consumption was from renewables, while only 17% of the population of Mali had access to electricity in 2007.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 8

Country/Region	Morocco	
Policy Type	Government aspiration	
Policy Name/Description	National Program for Development of Renewable Energies and Energy Efficiency on the Horizon 2012: 10% of energy consumption and 20% of renewables in the electricity mix by 2012	
Date Announced	2007	
Target Date	2012	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2012 and 5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National public funding; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 3	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>Morocco's National Program for Development of Renewable Energies and Energy Efficiency on the Horizon 2012 sets an objective to increase renewables to 20% of the national consumption of electricity and 10% of the energy balance by 2012.</p> <p>As of 2008, a law regarding renewable energy was in preparation. A study commissioned by the Moroccan Ministry for Energy and Mines in 2008 found that the existing legal and institutional framework in Morocco imposes a variety of barriers on the development of renewable energy.</p> <p>In 2008 Morocco invested \$3.2 billion in renewable energy. This includes building a "knowledge campus" for clean energy research and training. The government is taking steps to develop a \$1 billion energy development fund with support from Saudi Arabia and the UAE totaling \$800 million and a contribution from the Hassan II Foundation of \$200 million.</p> <p>Morocco's electricity sector traditionally has been controlled by the state-owned Office National de l'Electricite (ONE). Due to restructuring, the state's share of electricity generation is set to decrease to 40% by 2020. However, ONE will still be solely responsible for distribution and transmission of electricity in Morocco.</p> <p>Morocco plans to install 1,000 MW of wind capacity by 2012, yet only 10 MW of new wind capacity was installed in 2008. Concerns also exist about the long-term potential of existing hydroelectric power plants in Morocco, given increasing aridity.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 9

Country/Region	Nigeria	
Policy Type	Government aspiration	
Policy Name/Description	Renewable Electricity Action Program: 5% of electricity from renewables by 2016 (excluding large hydro)	
Date Announced	December, 2006	
Target Date	2016	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National public funding; national fiscal incentives; proposed national feed-in tariffs; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 3
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>The Federal Government of Nigeria set 10-year targets for the contribution of renewable electricity in 2006. The strategy is aspirational and does not actually recommend specific incentives or steps for implementation.</p> <p>The lack of appropriate policy, regulatory and institutional frameworks is a major constraint to the development of renewables in Nigeria. However, the Government is now doing more to remove obstacles that hinder investments in the power sector. In the energy plan, there is a strategy to promote solar energy by providing adequate incentives to local manufacturers for the production of solar energy systems. Fiscal incentives are also provided for the installation of solar energy systems.</p> <p>The Government has announced plans to dedicate a certain percentage of the nation's income from conventional energy to training, R&amp;D, and demonstration of renewable technologies. The World Bank and the Global Environment Facility have also been funding renewable projects in Nigeria.</p> <p>The Energy Commission in Nigeria is in charge of implementing the national energy policy, and the Council for Renewable Energy in Nigeria promotes the appropriate use of renewable energy technology in the country.</p> <p>0.7% power generation came from renewables in 2008. Much of the renewable electricity in Nigeria is limited to pilot and demonstration projects. Although the country has large untapped hydropower resources, this source of electricity is excluded from the 2016 target.</p>	



# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 10

Country/Region	Rwanda	
Policy Type	Government aspiration	
Policy Name/Description	90% of electricity from renewable sources by 2012	
Date Announced	2008	
Target Date	2012	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	Multilateral funding	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 3
	Public Financing: 3	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>The Government of Rwanda pledged in 2008 that by 2012, 90% of the electricity on the country would be from renewable energy sources. A detailed plan on renewable energy is being developed, and according to the Ministry of Infrastructure's 2009-2010 Action Plan, a regulatory framework on renewable energy and electricity generation will be designed and adopted by June, 2010.</p> <p>Rwanda's energy sector is under the responsibility of the Ministry of Energy, Water and Natural Resources and consists of a planning department, a water department, a mining department, an administrative department and an energy department composed of around 10 specialists who are organized in thematic sections.</p> <p>45% of electricity generation came from renewables in 2008, mainly from hydropower, and plans are in place to build two additional hydro plants, according to the Office of the President.</p> <p>During the last two decades Rwanda has experienced an energy crisis mostly due to lack of investment in the energy sector.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 11

Country/Region	Senegal	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	National Strategy for Renewables: 15% share of renewable energy in the energy balance by 2025	
<b>Date Announced</b>	2004	
<b>Target Date</b>	2025	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National public-private partnerships; national tax exemptions; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In 2004, Senegal's Ministry of Energy and Mines unveiled the National Strategy for Renewable Energy Development. The main objective of the strategy is to improve access to energy services.</p> <p>There is the Promotion of Renewable Energy Law in place. The law, enacted in May, 1993, exempts all solar power lighting, water pump, and water heating kits from customs duties, fiscal taxes, and VAT.</p> <p>The Ministry of Energy, Mines and Industry is responsible for policymaking in the electricity sector. The Regulatory Commission is in charge of supervising the production and distribution of electricity.</p> <p>Senegal had a 1% share of renewables in the energy balance in 2008.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 12

<b>Country/Region</b>	South Africa
<b>Policy Type</b>	Proposed legislation
<b>Policy Name/Description</b>	Halt emissions growth by 2020-2025; stabilize for up to 10 years; then decline in absolute terms.
<b>Date Announced</b>	July, 2008
<b>Target Date</b>	2020-2025
<b>CO<sub>2</sub> Abatement Potential</b>	Not applicable in 2012 and 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 13); national feed-in tariffs.
<b>Commentary</b>	<p>In July, 2008, the South African Government outlined its climate change vision. The plan included a substantial, quantified deviation from baseline emissions, enabled by international funding and technology, whereby South Africa's greenhouse gas emissions would peak in around 2000-2025, stabilize for up to 10 years, and then decline in absolute terms.</p> <p>On March 31<sup>st</sup>, 2009, South Africa announced feed-in tariffs that guarantee a stable rate-of-return for renewable energy projects.</p> <p>Due to its large coal deposits, South Africa has some of the lowest electricity prices in the world. However, in recent years, strong economic growth, rapid industrialization, and a mass electrification program have led to demand for power outstripping supply. The recent power supply crisis has accelerated recognition of the need to diversify the energy mix, including sources such as nuclear power and natural gas, as well as various forms of renewable energy.</p> <p>According to the South Africa House of Representatives Select Committee on Energy Independence and Global Warming, South Africa has been leading the way among developing countries with its proposals for climate change action.</p>

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 13

Country/Region	South Africa	
Policy Type	Legislation	
Policy Name/Description	10 TWh, equivalent to 4% electricity supply, from renewables by 2013	
Date Announced	2003	
Target Date	2013	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2012 and 10 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 12	
Supporting Policies: Mandates and Incentives	National feed-in tariffs; national tradable renewable credits; national subsidies; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 3
Overall Risk Assessment	1	
Supporting Commentary	<p>The South African Government set its renewable electricity target in its 2003 White Paper on Renewable Energy. On March 31<sup>st</sup>, 2009, South Africa announced feed-in tariffs (REFIT) that guarantee a stable rate-of-return for 15 years for renewable energy projects. The feed-in tariffs announced were substantially higher than those in the National Energy Regulator's initial proposal. The tariffs are differentiated by technology and will be paid for a period of 20 years.</p> <p>The Department of Minerals and Energy established the Renewable Energy Finance and Subsidy Office, whose mandate includes the management of renewable energy subsidies. At the 2009 renewable energy summit in March, a recommendation was made that there is a need to strengthen the Renewable Energy Finance and Subsidy Office and other development finance institutions that fund renewable energy projects.</p> <p>South Africa formed a National Tradable Renewable Energy Certificate Team after a feasibility study on the certificates in 2007. The team aims to establish an Issuing Body responsible for registering, issuing and redeeming certificates in South Africa. The scheme is still in development. There are several international and domestic institutions that offer financial assistance to private-sector companies that want to establish renewable energy projects. South Africa has partnered with the Global Environment Facility to provide funding and technical assistance to renewable project developers.</p> <p>Every year the Department of Minerals and Energy collects data on renewable energy to evaluate progress towards the goal. In August, 2009, the Department of Environmental Affairs found that currently South Africa is producing less than 1% of its electricity from renewables.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 14

Country/Region	Tunisia	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	10% of national energy demand from renewables by 2011 and 20% reduction of total demand by 2011.	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2011	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2012 and 5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Multilateral funding, Public funding; Tax exemptions	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The Tunisian National Agency for Energy and Conservation announced its renewable action plan in 2008. The aim is to achieve substantial reduction of energy demand and to promote the use of renewables.</p> <p>There is a National Fund for Energy Conservation. In 2005, a program for the promotion of solar thermal in the residential sector was launched. Decree no 94-1191 of May 30<sup>th</sup>, 1994, set conditions to benefit from tax incentives stated in articles 37, 41, 42, and 49 of the Investment Promotion Code.</p> <p>Government incentives, private financing, and international funds are in place. In July, 2009, the World Bank approved a \$55 million loan to fund renewable energy and energy efficiency in Tunisia.</p> <p>The Italian Ministry of The Environment and Territory, the Ministry for Industry and Energy of Tunisia, and the Tunisian National Agency for Energy Efficiency, signed a Memorandum of Understanding on January 26<sup>th</sup>, 2004. The group intends to establish a center for training, information dissemination, networking and development of pilot renewable projects in Tunis.</p> <p>34 MW of new wind capacity was installed in Tunisia in 2008. A total of 120 MW will be installed in 2009.</p>	

# Africa: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 15

Country/Region	Uganda	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	National Energy Policy: 61% of energy consumption from renewable sources by 2017	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2017	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National public financing; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Uganda has a detailed renewable energy policy in place, which aims to make modern renewable energy a substantial part of the national energy consumption. The plan sets out a number of strategies, which have been translated into concrete policy measures. There is a detailed split of how each measure will help to achieve the target.</p> <p>The Government has put a number of support measures in place, including: creating a Renewable Energy Department and an Energy Efficiency and Conservation Department in the Ministry of Energy and Mineral Development; promoting research and development and strengthening local manufacturing capacity in renewable energy technologies; and putting in place appropriate legislation to promote renewables.</p> <p>The private sector is expected to finance the projects through equity and debt. The Government of Uganda, with the assistance of development partners such as the World Bank and Global Environment Facility, is providing subsidies through the Rural Electrification Fund. Currently US \$45 million has been invested.</p> <p>In 2008, Uganda sourced only 4% of its energy consumption from renewable sources. A large number of projects have recently been undertaken recently, including the East African Tea Trade Association's micro-hydro program and the 250 MW Bujagali hydroelectric dam on the Nile River, set to come online in 2010. The dam is the largest private-sector investment in East Africa to date.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Asia

### Target 16

Country/Region	Abu Dhabi	
Policy Type	Government aspiration	
Policy Name/Description	7% of power should come from renewable sources by 2020	
Date Announced	January, 2009	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National public funding; national subsidies.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>Sheikh Mohammed bin Zayed Al Nahyan decreed in January, 2009, that 7% of power will come from renewable energy sources by 2020. The state-owned future energy company, Masdar, will oversee the green drive. Masdar has committed to invest \$15 billion in green energy.</p> <p>Abu Dhabi has already put itself forward as a possible location for the headquarters of a planned International Renewable Energy Agency being promoted by Germany.</p> <p>Masdar expects to mainly use solar power to reach the target, but is also exploring wind and geothermal power options. Substantial amounts of funding, central planning, and classic innovation policy have been deployed in support of the initiative.</p> <p>The Masdar project is expected to procure over \$1 billion by the end of 2009.</p> <p>There was no contribution from renewables to the national power mix in 2008. However, construction has already begun on Masdar City, and the broader Masdar initiative has a strong record of historical achievement to date.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 17

Country/Region	Bangladesh	
Policy Type	Proposed legislation	
Policy Name/Description	10% of electricity from renewable sources by 2020	
Date Announced	December, 2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National tax exemptions; national low-interest loans; national public funding; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 3
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>In December, 2008, Bangladesh's interim government unveiled a renewable energy policy in an attempt to ease the country's severe electricity shortage, which was in turn approved by the Advisory Council.</p> <p>The government plans to target domestic and foreign investors with incentives to encourage them to finance renewable projects in Bangladesh. Incentives include exemptions from corporate tax for 15 years, low-interest loans, exemption from VAT, and a cap of 3% on import duty. Bangladesh also plans to create a renewable energy financing facility. It is estimated that \$1.5 billion in funding is needed to achieve the 2020 target.</p> <p>In 2008, two World Bank-backed projects were approved that will see solar home systems installed in 1.3 million homes. The project will be implemented by Grameen Shakti – a member of the Grameen family of organizations – and IDCOL. This is one of the first projects to use carbon finance for off-grid solar PV.</p> <p>Specific teams and government bodies, including the Bangladesh Energy Regulatory Commission, Sustainable Energy Development Agency, and Ministry of Finance, are assigned responsibility for implementation.</p> <p>Bangladesh's current renewable supply stands at a less than 1%. However, due to the implementation of generous incentives, the renewable industry is now the fastest growing sector in Bangladesh.</p>	



# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 18

Country/Region	China	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	11 <sup>th</sup> 5-year plan: 20% reduction in energy intensity from 2005 levels (measure of GDP) between 2006 and 2010	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	1395 MT of abatement in 2012 and 1905 MT of abatement in 2020	
<b>Policy Category</b>	Emissions target: No carbon price	
<b>Related Emissions Target(s)</b>		
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standards (Target 19, Target 20 and Target 21); national subsidies; national public funding; national tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>As part of the 11<sup>th</sup> 5-year plan, The Chinese government set the target to reduce energy intensity by 20% between 2006 and 2010, or 4% each year.</p> <p>China has put in place a number of policies to support this target. The Chinese aim to increase energy from renewable sources to 10% by 2010 and 15% by 2020. In early 2009, China passed a national stimulus bill, which allocates \$147.6 billion to energy efficiency and R&amp;D, and \$50.9 billion to pollution control. In June, 2009, the government also announced US\$87.8 million in subsidies to promote the use of energy-saving lighting products.</p> <p>Official figures released in January, 2009, indicate energy intensity reductions of 1.8% in 2006, 3.7% in 2007 and 4.2% in 2008. According to the Pew Center, if China is able to continue at this pace, it will reach its 2010 goals. Efficiency gains have been largest in some of China's most energy-intensive sectors, including power generation, steel production and mining.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 19

<b>Country/Region</b>	<b>China</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	National Development and Reform Commission Plan (2007): 10% of primary energy from renewable sources by 2010 and 15% by 2020	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2010 and 2020	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 250 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 18	
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standards (Target 20 and Target 21); national tax exemptions; national public funding; national feed-in tariffs; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>A detailed plan to achieve target is in place. This target will be met by fully utilizing technologically mature and economically feasible renewable energy sources, such as hydropower, biogas, solar thermal, and geothermal, as well as by promoting the development of the wind power, biomass power and solar PV industries.</p> <p>In summer, 2009 China announced a series of incentives for renewables, including: a fixed feed-in tariff for wind power projects with four differentiated tariffs for different classes of wind power; subsidies to promote the use of energy-saving light bulbs; and subsidies to use renewable energy in green building projects in pilot cities and rural areas. China's government also offers tax exemptions and a government-backed renewable energy fund. The government is expected to establish a preferential feed-in tariff for solar by the end of 2009. The tariff would guarantee solar operators above market rates for the energy they produce. The solar feed-in tariff is expected to fall between \$0.16 and \$0.22 per kWh of electricity produced at large scale solar PV arrays.</p> <p>7.5% of primary energy came from renewables in 2006. In June, 2009 the Vice Chairman of the National Development and Reform Commission announced that China would easily surpass the 2020 target due to rapid growth in wind and solar installations.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 20

Country/Region	China	
Policy Type	Legislation	
Policy Name/Description	National Development and Reform Commission Plan (2007): 30 GW of wind generating capacity by 2020	
Date Announced	2007	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	85 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 18	
Supporting Policies: Mandates and Incentives	National tax exemptions; national public funding; national feed-in tariffs; national subsidies	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>China's Medium &amp; Long-Term Renewable Energy Development Plan gives specific staged targets for wind power growth. The plan also provides a detailed list of projects and regions where wind will be developed.</p> <p>According to the most recent wind energy resource assessment quoted in the plan, China's exploitable potential wind energy resource is 300 GW. Together with offshore wind potential the total is 1,000 GW.</p> <p>China has developed an extremely successful suite of supporting policies for wind over the past decade and a half. Starting with the Ride the Wind Program in the 1990s, that encouraged the importation of high-quality turbine technologies, China has been continually increasing its level of ambition in the sector. The National Development and Reform Commission (NDRC) launched a Wind Power Concession Project in 2004, which aims to build a number of large capacity wind power projects. Each wind farm built through the project must reach a 100 MW capacity. By 2006, the NDRC had approved five projects. Under the scheme, a 20-year power purchase agreement is negotiated with the power grid company to lock-in a long-term tariff, effectively minimizing risk. In summer, 2009 China announced fixed feed-in tariffs for wind power projects with four differentiated tariffs for different classes of wind power.</p> <p>At the end of 2008, wind power in China accounted for 12.2 GW of electricity generating capacity. In June, 2009, the NDRC proposed revising the target to 100 GW wind by 2020, due to successful early uptake. Researchers from Harvard and Beijing Tsinghua University have found that China could meet all it's their electricity needs from wind power through 2030.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 21

Country/Region	China	
Policy Type	Legislation	
Policy Name/Description	20 GW of solar generating capacity by 2020	
Date Announced	May, 2009	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	55 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 18	
Supporting Policies: Mandates and Incentives	National tax exemptions; national public funding; national subsidies; proposed national feed-in tariffs.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	1	
Supporting Commentary	<p>In May, 2009, the Director at the National Development Reform Commission (NDRC) Energy Research Institute announced that China would increase its solar target from 1.8 GW by 2020 to 20 GW by 2020.</p> <p>China's government offers tax exemptions for renewables and a government-backed renewable energy fund. The government is expected to establish a preferential feed-in tariff for solar by the end of 2009. The tariff would guarantee solar operators above market rates for the energy they produce. The solar feed-in tariff is expected to fall between \$0.16 and \$0.22 per kWh of electricity produced at large scale solar PV arrays.</p> <p>At the end of 2008, solar power capacity attached to the grid was less than 100 MW. China has been successful at rapidly growing other renewable energy sources, such as wind power.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 22

Country/Region	India	
Policy Type	Legislation	
Policy Name/Description	10% of primary energy from renewable sources by 2012	
Date Announced	2008	
Target Date	2012	
CO <sub>2</sub> Abatement Potential	No impact on BAU in 2012 and 2020	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National tax exemptions; national public funding; state feed-in tariffs; national preferential grid connection rights; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>The Report of the Working Group on New and Renewable Energy for XIth 5-Year Plan (2007-2012) established India's renewable target, but did not specifically address how it will be achieved. On June, 30<sup>th</sup>, 2008 India released its National Action Plan on Climate Change, identifying 8 core national missions. In the 1980s, the Indian government established the Ministry of Non-Conventional Energy Sources, charged with diversifying the country's energy supply. This Ministry was renamed in 2006 as the Ministry of New and Renewable Energy (MNRE).</p> <p>The Indian electricity industry was restructured by the 2003 Electricity Act, unbundling the vertically integrated electricity supply utilities in the Indian states and setting up State Regulatory Commissions (SERCs) in charge of setting electricity tariffs. The Electricity Act also required the SERCs to set Renewable Portfolio Standards. As of 2008, 10 out of 29 Indian States have implemented quotas for renewable electricity and have introduced preferential tariffs for renewable electricity. Several others have implemented fiscal incentives including an energy buy back, preferential grid connection, and electricity tax exemptions. At the federal level there are a number of measures that help drive renewable electricity development, including fiscal incentives such as income tax exemption for 10 years, 80% accelerated depreciation, sales tax exemption and excise duty exemption. In June, 2008, the MNRE announced a national generation-based scheme for grid-connected wind power projects under 49 MW, providing an incentive of €0.7 cents per kWh.</p> <p>Despite India deriving around 29% of its primary energy from biomass and having plans to scale-up renewable capacity, coal is expected to remain the primary energy source in the country and the Pew Center on Global Climate Change states that demand for coal will grow nearly three-fold by 2030.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 23

Country/Region	India	
Policy Type	Legislation	
Policy Name/Description	4-5% of electricity from renewable sources by 2012	
Date Announced	2008	
Target Date	2012	
CO <sub>2</sub> Abatement Potential	No impact on BAU in 2012 and 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National tax exemptions; national public funding; state feed-in tariffs; national preferential grid connection rights; Multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>The Report of the Working Group on New and Renewable Energy for XIth 5-Year Plan (2007-2012) established India's renewable target, but did not specifically address how it will be achieved. On June, 30<sup>th</sup>, 2008 India released its National Action Plan on Climate Change, identifying 8 core national missions. In the 1980s, the Indian government established the Ministry of Non-Conventional Energy Sources, charged with diversifying the country's energy supply. This Ministry was renamed in 2006 as the Ministry of New and Renewable Energy (MNRE).</p> <p>The Indian electricity industry was restructured by the 2003 Electricity Act, unbundling the vertically integrated electricity supply utilities in the Indian states and setting up State Regulatory Commissions (SERCs) in charge of setting electricity tariffs. The Electricity Act also required the SERCs to set Renewable Portfolio Standards. As of 2008, 10 out of 29 Indian States have implemented quotas for renewable electricity and have introduced preferential tariffs for renewable electricity. Several others have implemented fiscal incentives including an energy buy back, preferential grid connection, and electricity tax exemptions. At the federal level there are a number of measures that help drive renewable electricity development, including fiscal incentives such as income tax exemption for 10 years, 80% accelerated depreciation, sales tax exemption and excise duty exemption. In June, 2008, the MNRE announced a national generation-based scheme for grid-connected wind power projects under 49 MW, providing an incentive of €0.7 cents per kWh.</p> <p>From 2002 to 2007 India planned to construct 3,075 MW of renewable grid-connected capacity, but the actual capacity addition exceeded 6,000 MW by 2006 with a large share of this coming from growth in the Indian wind market. Wind is expected to add more than 10,000 MW of additional capacity by 2012.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 24

Country/Region	Indonesia	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	15-17% of primary energy to come from renewable/alternative sources by 2025 (5% biofuels; 5% geothermal; 5% biomass, solar, wind, nuclear & hydro; and 2% coal liquefaction)	
<b>Date Announced</b>	2006	
<b>Target Date</b>	2025	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The development of new and renewable energy in Indonesia is regulated by Presidential Decree No 5/2006. This decree sets a target for the contribution of new and renewable energy in the 2025 national primary energy mix, at 17% of total energy. The total investment needed for this development through 2025 is estimated to be \$13,197 million.</p> <p>To support the development of new and renewable energy the Government has issued Presidential Decree No 30/2007, Law No 15/1985, Government Regulation No 26/2006, and Ministerial Regulation No 002/2206. The government is currently developing incentive schemes to promote the use of renewable energy.</p> <p>Financing is expected to come mainly from private sector, although there is backing from international institutions, such as the World Bank and the UNDP, as well as bilateral support from the Netherlands and Denmark.</p> <p>4.5% of national primary energy came from renewables in 2009, mainly from geothermal and hydro sources. As of November, 2008, there was over 5 MW of grid-connected renewable electricity commissioned and over 86 MW being built. Hydro power is still the largest contributor of renewable resources in the primary energy mix, although the government is actively pursuing wind energy. A new wind map survey has recently been commissioned for Indonesia to facilitate the development of the wind industry.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 25

Country/Region	Japan
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 6% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	160 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Proposed cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	National emissions targets (Target 26 and Target 27); national Renewable Portfolio Standards (Target 28, Target 30 and Target 31); national fuel economy standard (Target 29).
<b>Commentary</b>	<p>Japan ratified the Kyoto Protocol in 2002.</p> <p>According to the UN, Japan is lagging in meeting its Kyoto target. Japan was 8% above 1990 greenhouse gas levels in 2003. In 2008, Japan saw its emissions rise 2.4%.</p> <p>The government hopes to reduce emissions and meet its Kyoto obligation in two ways: domestic forest conservation and international offsets; and voluntary pledges on emissions cuts by major industry sectors, including electricity generation and steel makers.</p> <p>Over the last 2 years, Japan has talked with eastern and central European countries about buying emission credits to help it meet its target under Kyoto. In March, 2009, Japan secured a deal to buy emissions rights from the Ukraine, which will deliver 30 MT of Assigned Amount Units. Japan has pledged to buy 100 MT in carbon offsets from abroad during 2008-2012.</p> <p>Early in 2009, Japan's government unveiled an economic stimulus equivalent to 3.1% of GDP aimed at promoting energy-efficient products and renewable energy. However the stimulus has been criticized for failing to address factory emissions – the country's main source of greenhouse gas emissions.</p> <p>Japan implemented a trial voluntary cap-and-trade scheme in 2008. The new Government has announced its intention of introducing a compulsory cap-and-trade system for emissions as early as 2012, although this would be too late to enable compliance with the Kyoto target.</p> <p>Japan's emissions rose to a record 1.37 GT in the year to March, 2008.</p>



# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 26

Country/Region	Japan
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	Action Plan for Achieving a Low Carbon Society: 60-80% cut in greenhouse gas emissions from current levels by 2050
<b>Date Announced</b>	June, 9 <sup>th</sup> , 2008
<b>Target Date</b>	2050
<b>CO<sub>2</sub> Abatement Potential</b>	200 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Voluntary cap-and-trade (Proposed mandatory scheme)
<b>Supporting Policies: Mandates and Incentives</b>	National emissions target (Target 27); national Renewable Portfolio Standards (Target 28, Target 30 and Target 31); national fuel economy standard (Target 29).
<b>Commentary</b>	<p>On June, 9<sup>th</sup>, 2008, then-Prime Minister Yasuo Fukuda released Japan Low-Carbon Society (LCS). The plan contained a long-term goal to reduce emissions by 60-80% by 2050 from 2005 levels. An interim 15% reduction target by 2020 was announced in June, 2009.</p> <p>Some of the key objectives of the plan are to: encourage the development of major innovative technologies and the dissemination of existing advanced technologies in order to move toward a low-carbon society; promote the development of clean combustion technology and carbon capture and storage; become a world leader in solar generation; raise the proportion of zero-emission energy sources to over 50%; and introduce next-generation vehicles.</p> <p>Japan implemented a trial voluntary cap-and-trade scheme in 2008. The new Government has announced its intention of introducing a compulsory cap-and-trade scheme for emissions as early as 2012, although this would be too late to enable compliance with the Kyoto Protocol target.</p> <p>Japan is currently struggling to meet its Kyoto emissions target. The country's emissions rose to a record 1.37 GT in the year to March, 2008.</p>

## Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 27

<b>Country/Region</b>	Japan
<b>Policy Type</b>	Voluntary
<b>Policy Name/Description</b>	The electric power sector will reduce emissions to 73% of 2008-2009 levels by the business year 2020-2021
<b>Date Announced</b>	April, 2009
<b>Target Date</b>	2020-2021
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 0 MT of abatement in 2020
<b>Policy Category</b>	Sector/Industry Specific Regulation
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standards (Target 28, Target 30 and Target 31); national fuel economy standard (Target 29).
<b>Commentary</b>	<p>In April, 2009, Japan's electric power sector voluntarily pledged to the government that it would cut emissions to 73% of 2008-2009 levels by 2020-2021. Through the year starting April, 2020, the sector will aim to lower CO<sub>2</sub> emissions to around 0.33kg per kWh through planned development of new nuclear reactors and advanced combined cycle thermal power generation units.</p> <p>Some of the key objectives of Japan's plan to decarbonizes are to: encourage the development of major innovative technologies and the dissemination of existing advanced technologies in order to move toward a low-carbon society; promote the development of clean combustion technology and carbon capture and storage; become a world leader in solar generation; and raise the proportion of zero-emission energy sources to over 50%.</p> <p>Japan implemented a trial voluntary cap-and-trade scheme in 2008. The new Government has announced an intention of introducing a compulsory cap-and-trade scheme as early as 2012, although this would be too late to enable compliance with the Kyoto target.</p> <p>The power sector's emissions were reported to be around 0.45kg per kWh in the 2008-2009 business year, according to the Federation of Power Companies of Japan.</p>

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 28

Country/Region	Japan	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	3% of total primary energy from renewable sources by 2010	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 25, Target 26 and Target 27	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national subsidies; national public funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In 1998, Japan initiated the Promotion for the Local Introduction of New Energy, which offers subsidies to renewable energy projects through the New Energy Development Organization.</p> <p>In February, 2009, the Government announced a net model feed-in tariff scheme, where owners of grid connected solar power systems will be paid a premium rate for surplus electricity.</p> <p>The budget allocation by the Japanese government for promoting introduction of new energy has increased annually. The Ministry of Economy, Trade and Industry is in charge of promoting new energy introduction. Japan announced a stimulus plan in April, 2009, that provides \$11 billion for energy efficiency and development of clean technology.</p> <p>According to the International Energy Agency, renewables made up over 3% of total energy supply in Japan in 2007.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 29

Country/Region	Japan	
Policy Type	Legislation	
Policy Name/Description	39.5 mpg fuel efficiency standard by 2015	
Date Announced	February, 2007	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2012 and 1 MT of abatement in 2020	
Policy Category	Sector/Industry Specific Regulation	
Related Emissions Target(s)	Target 25, Target 26 and Target 27	
Supporting Policies: Mandates and Incentives	National tax exemptions; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	1	
Supporting Commentary	<p>The Japanese government established fuel-economy standards for passenger cars of 39.5 miles per gallon, to be reached by 2015. This translates to CO<sub>2</sub> emissions of 125 grams per kilometer according to the ICCT. A very detailed technical fuel efficiency plan is in place.</p> <p>Japan hopes that by 2020, one in every two car sales will be a next generation vehicle (including hybrids, electric vehicles, plug-in hybrids, and fuel-cell vehicles).</p> <p>The plan notes that green taxation and other efforts have spurred manufacturers to meet tougher fuel standards. Compliance items are clearly defined, and must be listed in the vehicle owner's manual.</p> <p>Toyota says that the Prius has already met the 2015 standard. The average fuel economy of cars manufactured in Japan rose from 12.4 kilometers per liter in 1996 to 15.5 kilometers per liter (36.5 miles per gallon) in 2006. In 2005, 86% of passenger cars sold met or surpassed the 2010 fuel efficiency target.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 30

Country/Region	Japan	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Increase solar power by 55 times by 2030	
<b>Date Announced</b>	May, 2009	
<b>Target Date</b>	2030	
<b>CO<sub>2</sub> Abatement Potential</b>	165 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 25, Target 26 and Target 27	
<b>Supporting Policies: Mandates and Incentives</b>	National tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In early 2009, Japan's Ministry of Environment set a goal to drive down solar power generation costs to current retail electricity cost levels, which are about \$0.07 per kWh. It aims to achieve this through mass production, raising total solar energy output to 79,000 MW – 55 times the current output – by 2030. This increases the original target of an increase in solar energy by 40 times by 2030, as set out in Japan's Action Plan for Achieving a Low-Carbon Society in July, 2008.</p> <p>The government plans to increase the use of solar power in the public sector as an example for the rest of the economy. A system of fixed price purchasing is being developed that would guarantee recovery of investment over 10 years. The government is also engaged in technological development, financial support, and public awareness activities to spread the use of solar power.</p> <p>In February, 2009, the government announced a net model feed-in tariff scheme where owners of grid-connected solar power systems will be paid a premium rate for surplus electricity. Japan's Government also announced a stimulus plan in April, 2009, that provides \$11 billion for energy efficiency and development of clean technologies including solar power.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 31

Country/Region	Japan	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	National Wind Power Target: 3,000 MW wind power by 2010	
<b>Date Announced</b>	2005	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2012 and 10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 25, Target 26 and Target 27	
<b>Supporting Policies: Mandates and Incentives</b>	National capital grants.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>There is no detailed plan in place to meet Japan's wind power target. Renewable policy is captured in the National Action Plan on Climate Change and the Promotion for the Local Introduction of New Energy (1998).</p> <p>Development of wind energy in Japan has been encouraged by the introduction of a number of incentives, including capital grants. Power purchase agreements in Japan have a relatively long lifespan of 15 to 17 years, which helps to ensure investor confidence.</p> <p>Toshio Hori, president of Tokyo-based Green Power Investment Corp, blames Japan's renewable-energy policy for slow growth in the wind sector. The Global Wind Energy Council reports that recently Japan's wind sector has experienced a slowdown due to extreme weather, the lack of a stable legal system, grid constraints, and the stagnating economy. A shortage of available turbines in Japan has led to high prices, which was further accentuated by the depreciation of the Japanese yen against the Euro in the summer of 2009.</p> <p>According to the Global Wind Energy Council, Japan had 1,309 MW of installed wind capacity in 2006, 1,538 MW in 2007 and 1,880 MW in 2008.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 32

Country/Region	Jordan	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	7% of primary energy from renewable sources by 2015; 10% by 2020	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Tax exemptions; public funding; Renewable Energy Promotion Law	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Jordan's renewable strategy is very detailed, and includes an implementation plans for renewable energy projects, a renewable energy promotion law that provide for incentives and exemption of all renewable energy equipment from taxes, and a Renewable Energy and Energy Efficiency Fund (JREEF) to support renewable energy and energy efficiency programs/projects.</p> <p>Financing for the projects will be arranged through private developers. International funding in the form of grants and soft loans will be arranged through Government ministries.</p> <p>1% of primary energy came from renewables in 2008. Jordan is expected to achieve part of the National Energy Strategy ahead of schedule, moving it closer to becoming a regional leader in renewables, according to a senior Jordanian energy official.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 33

Country/Region	Malaysia	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Fuel Diversification Policy: 5% of electricity generation from renewable sources by 2005; 10% by 2010	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2012 and 5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National tax credits; national Small Renewable Energy Program; national Renewable Energy Power Purchase Agreement.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>A detailed implementation plan is in place under the country's Fuel Diversification Policy, 2001. Under the Eighth Malaysia Plan 2001-2005, renewable energy was added as part of a Five Fuel Strategy in the energy supply mix. Following this, the Ninth Malaysia Plan 2006-2010 strengthens initiatives for renewable energy to meet 10% of electricity demand by 2010.</p> <p>The Fuel Diversification policy has been reinforced by fiscal incentives such as investment tax allowances and the Small Renewable Energy Program, which support grid connection for small renewable power generation plants.</p> <p>Other supporting policies include the Renewable Energy Power Purchase Agreement (REPPA), which is a Malaysian government regulation dealing with power purchases between the power utility TNB and private investors. Under the REPPA, renewable electricity producers are given a license for a period of 21 years from the date of commissioning of the plant. REPPA also allows independent power producers to sell electricity to the grid. Revenues from generating Certified Emissions Reductions under the Clean Development Mechanisms also support renewables in Malaysia.</p> <p>The first phase of this target – reaching 5% electricity from renewables by 2005 – was met.</p>	



# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 34

Country/Region	Pakistan	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	10% of national primary energy from renewable sources (including hydro) by 2015; 20% by 2020	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2015 and 2020	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National public funding; national tax exemptions; multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>Some measures are being developed to support achievement of Pakistan's renewable target, but as of yet, there appears to be little in place. Given other priorities, such as internal security concerns, there is increased delivery risk around the renewable target.</p> <p>The Government of Pakistan has committed funds for 5,000 solar homes and over 2 MW of wind energy. Additional assistance from the UNDP and GEF has been sought for joint projects. Tax exemptions on renewable power have been introduced.</p> <p>Between 2007 and February, 2009, a total of US \$2.5 billion in renewable investment occurred.</p> <p>0% of power came from renewables in 2005.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 35

Country/Region	Philippines	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	Increase renewable energy capacity by 100% by 2013; have 9 GW of renewable capacity by 2020	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2013 and 2020	
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of abatement in 2012 and 30 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national tax exemptions; national net metering; multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>While a variety of programs and tools in support of renewables are in place in the Philippines, they are not integrated in an overarching plan to achieve the country's target.</p> <p>Feed-in tariffs are in place for wind, solar, ocean, run-of-river hydro and biomass. A variety of tax incentives are also available, including income tax holidays, duty-free importation of renewable equipment, special property and corporate tax rates, customs waivers, and zero VAT. End users are also offered net-metering and green energy options.</p> <p>The Asian Development bank promised the Philippines \$2 billion in June, 2009 for renewable programs.</p> <p>The Department of Energy, through the Energy Utilization Management Bureau will supervise the implementation of the program. It is unclear how frequently progress is monitored.</p> <p>About one-third of the Philippines' energy mix is renewable energy.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 36

Country/Region	Philippines	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	Phase out incandescent light bulbs by January, 2010	
<b>Date Announced</b>	February, 2008	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>In February, 2008, Philippines President Gloria Arroyo announced that the country will phase out incandescent bulbs by 2010, making it the first plan of its kind in Asia.</p> <p>There is no publicly-available detailed implementation plan. Details of supporting policies are not extensive. The Asian Development Bank (ADB) will fund an energy-efficient project in the Philippines that will distribute 13 million energy saving lights to homeowners as part of the Government's push to cut fuel bills and phase out incandescent bulbs. The ADB is also considering extending a \$30 million loan to the country to help fund energy efficiency schemes.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 37

Country/Region	South Korea	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	5% of electricity consumption from renewable sources by 2011	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2011	
<b>CO<sub>2</sub> Abatement Potential</b>	30 MT of abatement in 2012 and 65 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national public funding; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In 2007, South Korea set a goal to have solar, wind and tidal power provide 5% of total power generation by 2011.</p> <p>In January, 2009 South Korea announced the launch of its \$38.1 billion Green New Deal. The Green New Deal will focus on pollution control, energy efficiency and clean technologies. Under the plans, \$3.32 billion will be spent on clean energy infrastructure technology products and constructing low-carbon transportation systems. An additional \$6.64 billion would be allocated for research and development of higher efficiency and non-silicon-based solar cells, electric vehicles, highly efficient LEDs, smart metering and rechargeable batteries.</p> <p>Feed-in tariffs were adopted in South Korea for solar PV in 2006. The tariffs distinguish between systems &gt;30 kWp and systems &lt;30 kWp. Feed-in rates are generous, according to Renewable Energy World. The result of these tariffs has been a huge growth in solar demand.</p> <p>Korea uses incentives and subsidies to compensate for the difference between the base price and the system marginal price for each new and renewable energy source.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 38

Country/Region	South Korea	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	11% of energy consumption from renewable sources by 2030	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2030	
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 37	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national public funding; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In 2008, South Korea set a target of sourcing 11% of energy consumption from renewables by 2030.</p> <p>In January, 2009 South Korea announced the launch of its \$38.1 billion Green New Deal. The Green New Deal will focus on pollution control, energy efficiency and clean technologies. Under the plans, \$3.32 billion will be spent on clean energy infrastructure technology products and constructing low-carbon transportation systems. An additional \$6.64 billion would be allocated for research and development of higher efficiency and non-silicon-based solar cells, electric vehicles, highly efficient LEDs, smart metering and rechargeable batteries.</p> <p>Feed-in tariffs were adopted in South Korea for solar PV in 2006. The tariffs distinguish between systems &gt;30 kWp and systems &lt;30 kWp. Feed-in rates are generous, according to Renewable Energy World. The result of these tariffs has been a huge growth in solar demand.</p> <p>Korea uses incentives and subsidies to compensate for the difference between the base price and the system marginal price for each new and renewable energy source.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 39

Country/Region	South Korea	
Policy Type	Legislation	
Policy Name/Description	Reach average fleet fuel efficiency of 40 mpg by 2015	
Date Announced	2009	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Sector/Industry Specific Regulation	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National tax exemptions; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 3	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>In 2009, South Korea announced a target to increase average fleet fuel efficiency to 40 mpg by 2015. To promote the use of compact cars, the government offers reduced or waived vehicle tax and discounts on expressway tolls, public parking and other driving facilities.</p> <p>In January, 2009 South Korea announced the launch of its \$38.1 billion Green New Deal. The Green New Deal will focus on pollution control, energy efficiency and clean technologies. Under the plans, \$3.32 billion will be spent on clean energy infrastructure technology products and constructing low-carbon transportation systems. An additional \$6.64 billion would be allocated for research and development of higher efficiency and non-silicon-based solar cells, electric vehicles, highly efficient LEDs, smart metering and rechargeable batteries.</p> <p>New passenger cars sold within the country in 2008 ran an average of 11.47 kilometers per liter of fuel (27 mpg US, 8.7 L/100km)—up from 11.04 km/L (26 mpg US, 9.1 L/100km) in 2007.</p>	

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 40

Country/Region	Taiwan
<b>Policy Type</b>	Voluntary
<b>Policy Name/Description</b>	Sustainable Energy Policy: Reduce emissions to 2008 levels between 2016 and 2020 and to 2000 levels by 2025
<b>Date Announced</b>	2008
<b>Target Date</b>	2020 and 2025
<b>CO<sub>2</sub> Abatement Potential</b>	80 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National emissions targets (Target 41); national Renewable Portfolio Standard (Target 42); national Renewable Energy Development Act.
<b>Commentary</b>	<p>Taiwan is under no formal obligation to reduce emissions under the Kyoto Protocol. This target is acknowledged as being ambitious by the Taiwanese President, but he states that unless such targets are set, then no action will take place.</p> <p>Taiwan has put legislation supportive of this target in place. The Taiwanese legislature passed the Renewable Energy Development Act on June, 12<sup>th</sup>, 2009, with specific policies each for the industrial, transportation, residential, and commercial sectors. According to Tsai Chin-yao, Chairman of the Photovoltaic Committee and Chairman and Chief Executive Officer of Auria Solar Co. Ltd., the Renewable Energy Development Act will attract investment of at least \$914 million per year.</p> <p>According to US Department of Energy data, Taiwan released 300 MT tons of CO<sub>2</sub> in 2006, up 3% from the previous year and 19% above 2000 levels.</p>

# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 41

Country/Region	Taiwan
<b>Policy Type</b>	Voluntary
<b>Policy Name/Description</b>	Sustainable Energy Policy: Decrease energy intensity by 20% over 2005 levels by 2015 and 50% by 2025
<b>Date Announced</b>	2008
<b>Target Date</b>	2015 and 2025
<b>CO<sub>2</sub> Abatement Potential</b>	75 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National emissions targets (Target 40); national Renewable Portfolio Standard (Target 42); national Renewable Energy Development Act.
<b>Commentary</b>	<p>Taiwan is under no formal obligation to reduce emissions under the Kyoto Protocol. This target is acknowledged as being ambitious by the Taiwanese President, but he states that unless such targets are set, then no action will take place.</p> <p>Taiwan has put legislation supportive of this target in place. The Taiwanese legislature passed the Renewable Energy Development Act on June, 12<sup>th</sup>, 2009, with specific policies each for the industrial, transportation, residential, and commercial sectors. According to Tsai Chin-yao, Chairman of the Photovoltaic Committee and Chairman and Chief Executive Officer of Auria Solar Co. Ltd., the Renewable Energy Development Act will attract investment of at least \$914 million per year.</p> <p>According to US Department of Energy data, Taiwan released 300 MT tons of CO<sub>2</sub> in 2006, up 3% from the previous year and 19% above 2000 levels. The Energy Information Administration notes that energy intensity levels in Taiwan tend to be relatively high due primarily to the country's heavy concentration of energy-intensive manufacturing industries.</p>



# Asia: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 42

Country/Region	Taiwan	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Renewable Energy Development Act: 10% of electricity from renewable sources by 2010.	
<b>Date Announced</b>	June, 2008	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2012 and 20 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 40 and Target 41	
<b>Supporting Policies: Mandates and Incentives</b>	National public funding; national subsidies	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 3	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>The Renewable Energy Development Act follows the Framework of Taiwan's Sustainable Energy Policy, which is a robust and detailed plan.</p> <p>The new law authorizes the government to provide a variety of incentives for the development of renewable energy, including creating an acquisition mechanism, providing incentives for demonstration projects, and loosening regulatory restrictions. According to Tsai Chin-yao, chairman and chief executive officer of Auria Solar Co. Ltd., the Renewable Energy Development Act will attract investment of at least TWD 30 billion (\$906 million). Subsidies for the use of renewable energy will be provided from the Petroleum Fund and Agricultural Development Fund.</p> <p>6.17% of power generation came from renewables in 2005.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Europe

### European Union Member States

#### Target 43

Country/Region	European Union (EU-15)
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	1997
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	90 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); National emissions targets (Target 55, Target 58, Target 68, Target 73, Target 76, Target 80, Target 81, Target 87, Target 92, Target 96, Target 103, Target 106, Target 111, Target 119, Target 123, Target 124, Target 125, Target 127, Target 128 and Target 134); national Renewable Portfolio Standards (Target 56, Target 57, Target 59, Target 60, Target 69, Target 70, Target 74, Target 75, Target 77, Target 78, Target 82, Target 83, Target 84, Target 85, Target 88, Target 89, Target 93, Target 94, Target 97, Target 104, Target 107, Target 108, Target 112, Target 120, Target 121, Target 122, Target 126, Target 129, Target 130, Target 131, Target 135 and Target 136); national biofuel standard (Target 95); national lighting efficiency standards (Target 79 and Target 133); national energy efficiency standard (Target 86); national smart meter standard (Target 132); EU-ETS.
<b>Commentary</b>	<p>The EU-15 has a Kyoto target to cut greenhouse gas emissions by 8% from 1990 base-year levels by 2012. Within this overall target, each EU-15 member state has a differentiated reduction target; some should reduce emissions while others are allowed a limited increase. Member States that joined the European Union since it ratified the Kyoto Protocol in 2002 have individual targets, except for Cyprus and Malta, which have no targets.</p> <p>According to projections by the European Environment Agency, the EU-15 should comfortably reach their collective Kyoto target by 2012 – but only if those Member States who are overachieving towards meeting their targets cover for Member States who are underachieving. Austria, Denmark, Finland, Ireland, Italy, Portugal, and Spain look extremely unlikely to reach their targets, while the UK, Germany, and France have already hit their Kyoto targets. The EU cut emissions of greenhouse gases by 1.2% in 2007.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 44

<b>Country/Region</b>	European Union
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Energy and Climate Change Package (2008): 20% reduction in greenhouse gas emissions from 1990 levels by 2020; 30% reduction if an international agreement is reached
<b>Date Announced</b>	December, 2008
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	295 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); National emissions targets: (Target 55, Target 58, Target 61, Target 64, Target 68, Target 71, Target 73, Target 76, Target 80, Target 81, Target 87, Target 90, Target 92, Target 96, Target 98, target 100, Target 103, Target 106, Target 109, Target 111, Target 113, Target 115, Target 117, Target 119, Target 123, Target 124, Target 125, Target 127, Target 128 and Target 134); national Renewable Portfolio Standards: (Target 56, Target 57, Target 59, Target 60, Target 62, Target 63, Target 65, Target 66, Target 67, Target 69, Target 70, Target 72, Target 74, Target 75, Target 77, Target 78, Target 82, Target 83, Target 84, Target 85, Target 88, Target 89, Target 91, Target 93, Target 94, Target 97, Target 99, Target 101, Target 102, Target 104, Target 107, Target 108, Target 110, Target 112, Target 114, Target 116, Target 118, Target 120, Target 121, Target 122, Target 126, Target 129, Target 130, Target 131, Target 135 and Target 136); national biofuel standard (Target 95); national lighting efficiency standards (Target 79 and Target 133); national energy efficiency standard (Target 86); national smart meter standard (Target 132); EU-ETS.
<b>Commentary</b>	<p>The Climate Action and Renewable Energy Package sets out the contribution expected from each Member State to overall EU emissions reduction goals, and proposes measures to help achieve them. Central to the strategy is strengthening and expanding the EU Emissions Trading Scheme (EU-ETS). Following lobbying from industry-heavy Member States, a series of compromises may make it a less effective tool to reduce the bloc's emissions.</p> <p>This target relies on Member State implementation. Monitoring is carried out by the European Commission and the European Environment Agency.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 45

<b>Country/Region</b>	<b>European Union</b>
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Energy and Climate Change Package (2008): 10% reduction in greenhouse gas emissions from non-EU Emissions Trading Scheme (EU-ETS) sectors between 2013 and 2020
<b>Date Announced</b>	December, 2008
<b>Target Date</b>	2013 and 2020
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); National emissions targets: (Target 55, Target 58, Target 61, Target 64, Target 68, Target 71, Target 73, Target 76, Target 80, Target 81, Target 87, Target 90, Target 92, Target 96, Target 98, target 100, Target 103, Target 106, Target 109, Target 111, Target 113, Target 115, Target 117, Target 119, Target 123, Target 124, Target 125, Target 127, Target 128 and Target 134); national Renewable Portfolio Standards: (Target 56, Target 57, Target 59, Target 60, Target 62, Target 63, Target 65, Target 66, Target 67, Target 69, Target 70, Target 72, Target 74, Target 75, Target 77, Target 78, Target 82, Target 83, Target 84, Target 85, Target 88, Target 89, Target 91, Target 93, Target 94, Target 97, Target 99, Target 101, Target 102, Target 104, Target 107, Target 108, Target 110, Target 112, Target 114, Target 116, Target 118, Target 120, Target 121, Target 122, Target 126, Target 129, Target 130, Target 131, Target 135 and Target 136); national biofuel standard (Target 95); national lighting efficiency standards (Target 79 and Target 133); national energy efficiency standard (Target 86); national smart meter standard (Target 132); EU-ETS.
<b>Commentary</b>	<p>The EU Climate and Energy Package requires a 10% reduction in emissions from non-EU ETS sectors between 2013 and 2020. In sectors that do not come into the EU-ETS responsibility falls on individual governments to lower emissions.</p> <p>EU-wide measures that may help Member States reduce emissions include new efficiency standards for boilers and water heaters, and improved labeling systems. The Landfill Directive will further reduce emissions and Member states can also use credits from the Kyoto Protocol mechanisms.</p> <p>The Commission set national targets according to countries' Gross Domestic Product (GDP). Richer countries are asked to make bigger cuts, while lower GDP states will be entitled to increase emissions from these sectors in order to take into account their high projected GDP growth.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 46

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Energy and Climate Package – Low Carbon Fuel Standard: CO <sub>2</sub> emissions from new cars are limited to 120g CO <sub>2</sub> /km for 65% of new fleet in 2012; 75% in 2013; 80% in 2014; and 100% in 2015.	
<b>Date Announced</b>	December, 2008	
<b>Target Date</b>	2012, 2013, 2014 and 2015	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	EU Green Car Fund; EU Renewable Fuel Standard (Target 52); EU incentives for the car industry to invest in new technologies; national biofuels standard (Target 95).	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>The European Commission approved the vehicle standards as part of the Energy and Climate Package. The EU Climate and Energy Package was formally adopted in April, 2009, and entered into force in May, 2009.</p> <p>The European Commission had initially proposed introducing the caps on 100% of new cars sold in the region from 2012, however a compromise was reached that phased in the target over time:</p> <ul style="list-style-type: none"> <li>• CO<sub>2</sub> emissions from new vehicles will be gradually reduced starting with 65% of the new fleet in 2012 rather than 100%.</li> <li>• Fines against carmakers for non-compliance were reduced to a €5 fine for the first extra gram of CO<sub>2</sub> above target, €15 for the second, €25 for the third, and €95 for the fourth gram onwards.</li> </ul> <p>There is some funding in place to support clean car initiatives in the EU, including a Green Cars Fund with at least €5 billion of funding and a "factories of the future" initiative estimated at €1.2 billion.</p> <p>Member States are responsible for implementation.</p> <p>Despite the dilution of penalties for non-compliance in the short-term, there are still robust fines in place for non-compliance in the longer term. There is also a good track record in meeting vehicle emission standards in the EU.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 47

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Energy and Climate Package: Power plants over 300MW must not emit over 500 grams of CO <sub>2</sub> /kWh from 2015.	
<b>Date Announced</b>	October, 2008	
<b>Target Date</b>	2015	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	EU and national funding for Carbon Capture and Storage R&D.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In October, 2008, the European Parliament voted in favor of an emissions performance standard for new power plants constructed in the European Union in accordance with the Directive on Geological Storage of Carbon Dioxide. The EU Climate and Energy Package was formally adopted in April, 2009, and entered into force in May, 2009.</p> <p>The EU and a number of Member States are providing funding for Carbon Capture and Storage (CCS) R&amp;D, and are requiring demonstration of the technology at new plants. Funding for CCS R&amp;D is in place, but more may be needed. The EU may pump about €8 billion into CCS, while a study by McKinsey &amp; Company indicates that up to €7-€12 billion in funding may be required.</p> <p>Monitoring of this requirement will take place alongside other emissions measures, with Member States reporting annually to the EU Commission.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 48

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Aviation Directive 2008/101/EC: 3% reduction in greenhouse gas emissions from aircraft flying into and out of the EU between 2012 and 2013 based on the 2004-2006 average as a baseline; 5% reduction in greenhouse gas emissions from aircraft flying into and out of the EU from 2013 onwards.	
<b>Date Announced</b>	July, 2008	
<b>Target Date</b>	2012-2013; 2013 onwards	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	International Air Transport Association carbon neutral growth target; EU R&D funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On July 8<sup>th</sup>, 2008, the EU Parliament voted in favor of including aviation sector emissions in the EU-ETS as of 2012. A detailed plan has been set out, which includes allowance allocation, exemptions and inclusions within the scheme. The Directive makes one Member State responsible for administering each aircraft operator participating in the EU-ETS.</p> <p>Airlines will receive 85% of Aviation Allowances (AAs) for free from February 2012 with the remaining 15% to be auctioned. Airlines can use EUAs (allowances from the EU-ETS) for compliance, but EU-ETS participants cannot use AAs for compliance under that scheme. If insufficient aviation allowances are surrendered to meet compliance, airlines that are not compliant will be “named and shamed” and a penalty of €100/ton of CO<sub>2</sub> will be levied. From 2013 the penalty will rise with price indices. The Commission can also impose an operating ban on an aircraft operator if other enforcement attempts have failed.</p> <p>A key question that remains to be resolved is whether the EU can impose a cap-and-trade on non-EU airlines. The US has suggested that it may pursue trade and legal challenges to the Aviation EU-ETS.</p> <p>According to the EU Commission, 2004-2006 average emissions from aviation were around 218 MT CO<sub>2</sub> and are estimated to rise to 340 MT by 2015. On June 8<sup>th</sup>, 2009 the International Air Transport Association declared that it would set a goal of carbon neutral growth by 2020. The European Union is also funding research to reduce aircraft noise and fuel consumption.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 49

Country/Region	European Union	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Fuel Quality Directive: Suppliers must ensure a 6% reduction in greenhouse gas emissions from the fuel production chain by 2020	
<b>Date Announced</b>	December, 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Fuel Standard (Target 52); Ireland Biofuel Standard (Target 95)	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>This policy was enacted alongside the EU Climate and Energy Package and was formally adopted in April, 2009, and entered into force in May, 2009.</p> <p>Member States are responsible for drawing up their own plans to meet the target. Due to the complexity of the requirement, there are still a number of elements up for review. These include greenhouse gas lifecycle analysis methodology, greenhouse gas emissions baseline standards, the methodology to calculate the contribution of electric vehicles, and indirect land use change values for biofuels.</p> <p>Only those fuel suppliers that are designated by Member States will be responsible for lifecycle greenhouse gas emissions. They must report annually on greenhouse gas emissions and must submit the first report by the end of 2010.</p> <p>The Directive creates the opportunity for several suppliers to choose to meet the obligation jointly and be considered as a single supplier.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 50

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	European Commission 1997 White Paper: 'Energy for the Future: Renewable Sources of Energy': 12% of primary energy should come from renewables by 2010	
<b>Date Announced</b>	1997	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	245 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard - Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standards (Target 56, Target 57, Target 59, Target 60, Target 62, Target 63, Target 65, Target 66, Target 67, Target 69, Target 70, Target 72, Target 74, Target 75, Target 77, Target 78, Target 82, Target 83, Target 84, Target 85, Target 88, Target 89, Target 91, Target 93, Target 94, Target 97, Target 99, Target 101, Target 102, Target 104, Target 107, Target 108, Target 110, Target 112, Target 114, Target 116, Target 118, Target 120, Target 121, Target 122, Target 126, Target 129, Target 130, Target 131, Target 135, Target 136); national subsidies, national feed-in tariffs; national public funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>In 1997 the Government White Paper: 'Energy for the future – Renewable energy sources' was released setting the objective to attain, by 2010, a 12% share of renewable energy in the European Union. Despite growing subsidies and support programs at Member State level, the observed growth rates in renewable energy consumption are not sufficient to meet this target by 2010. A major blow to the target is that there has been insufficient rainfall to make full use of hydropower.</p> <p>According to the European Environment Agency the share of renewable energy sources in primary energy consumption increased slowly in the EU from 4.4% in 1990 to 8.5% in 2005, substantially short of the 12% target.</p> <p>Sanctions for non-compliance are unclear. While the EU Commission has the right to take legal action against member states who do not comply, this has not always led to target achievement.</p> <p>9% of the EU's energy mix came from renewables in 2008.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 51

Country/Region	European Union	
Policy Type	Legislation	
Policy Name/Description	EU Energy and Climate Directive: 20% of primary energy should come from renewables by 2020	
Date Announced	March, 8 <sup>th</sup> , 2007	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	775 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard - Energy	
Related Emissions Target(s)	Target 43, Target 44, Target 45	
Supporting Policies: Mandates and Incentives	National Renewable Portfolio Standards (Target 56, Target 57, Target 59, Target 60, Target 62, Target 63, Target 65, Target 66, Target 67, Target 69, Target 70, Target 72, Target 74, Target 75, Target 77, Target 78, Target 82, Target 83, Target 84, Target 85, Target 88, Target 89, Target 91, Target 93, Target 94, Target 97, Target 99, Target 101, Target 102, Target 104, Target 107, Target 108, Target 110, Target 112, Target 114, Target 116, Target 118, Target 120, Target 121, Target 122, Target 126, Target 129, Target 130, Target 131, Target 135, Target 136); national subsidies, national feed-in tariffs; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>In January 2008 the European Commission put forward an integrated proposal for climate action, including a proposal for a Directive on the promotion of the use of energy from renewable sources with country-specific targets for 2020.</p> <p>The new Directive improves the legal framework for promoting renewables and requires national action plans that establish pathways for the development of renewable energy sources. Each Member State is responsible for implementing individual targets to meet the EU 20% target. The implementation structure for the new Directive should be established by Member States by 2010. There are a number of Member State policies promoting renewable development including feed-in tariffs, tax exemptions and grants. Member States are responsible for reporting progress to the Commission. Each country has assigned a ministry responsibility for the target. While indicative interim targets between now and 2020 are in place, there are no binding interim targets.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 52

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Energy and Climate Directive: 10% of transport fuels from renewable sources, including biofuels, hydrogen, and green electricity, by 2020	
<b>Date Announced</b>	December, 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Fuel Standard	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	EU Funding; national biofuel standard (Target 95); national Renewable Transport Fuel Obligation; national biofuel subsidies and public financing.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>As part of the Energy and Climate legislation passed early in 2009, a plan was put in place to increase renewable fuels to 10% of the road transport fuel pool by 2020.</p> <p>As part of a compromise struck to ensure passage, the plan and target may be reviewed before 2015. The European Commission has yet to develop proposals to limit indirect land use caused by the switch to biofuels. Both of these factors adds uncertainty to the policy regime.</p> <p>There are a number of Member State policies, such as the Renewable Transport Fuel Obligation in the UK, that support this EU target. There is also some EU funding available through the European Green Cars Initiative, which includes €4 billion in support through the European Investment Bank and €1 billion in support for public-private research partnerships. The Fuel Cells and Hydrogen Joint Undertaking also supports achievement of this target.</p> <p>Sanctions for non-compliance are unclear. While the EU Commission has the right to take legal action against member states who do not comply, this has not always led to target achievement.</p> <p>The EU currently derives 2% of its transport fuel from biofuels.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 53

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Energy and Climate Package: 20% reduction in primary energy consumption by 2020 through energy efficiency	
<b>Date Announced</b>	December, 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	430 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	EU lighting efficiency standard (Target 54); national lighting efficiency standards (Target 79 and Target 133); national efficiency standard (Target 86); national smart meter standard (Target 132); national building efficiency codes; national appliance standards; and national industry standards.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>A goal to reduce primary energy consumption by 2020 was implemented in the Energy and Climate Package, 2009. As part of the policymaking process, countries were required to submit National Energy Efficiency Action Plans.</p> <p>The EU has a number supporting policies in place, including its decision to phase out incandescent light bulbs by 2012 within its Eco-Design Directive. The EU Commission has also selected a new batch of product groups to come under the binding minimum eco-design standards in the coming years, which will boost their energy efficiency. There are a number of Member State efficiency standards for appliances and buildings that also support this target.</p> <p>Some state aid can be used to promote emissions cuts and increase the uptake of renewables. In December, 2008 the Commission announced new plans for the EU to co-finance national and local schemes to promote energy efficient housing. Reduced energy consumption at the level desired by the EU by 2020 is estimated to require at least €250 billion of investment.</p> <p>Member States are responsible for implementation, through Departments of Energy, Environment, and/or Climate Change. The European Commission is ultimately responsible for tracking compliance.</p> <p>Sanctions for non-compliance are unclear. While the EU Commission has the right to take legal action against member states who do not comply, this has not always led to target achievement.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 54

<b>Country/Region</b>	<b>European Union</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Eco-Design Directive – Energy Efficiency Standard: Phase out incandescent light bulbs by 2012	
<b>Date Announced</b>	December, 2008	
<b>Target Date</b>	2012	
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2012	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	National lighting efficiency standards (Target 79 and Target 133); Subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The target is part of the EU's 2005 Eco-Design Directive. EU Member States endorsed the European Commission's proposals to progressively phase out incandescent light bulbs starting in 2009, and the standard was officially adopted on March 18<sup>th</sup>, 2009.</p> <p>The Commission is financing research into light emitting diodes (LEDs), and finance ministries are expected to provide subsidies for the purchase of 50 million low-energy bulbs.</p> <p>The European Commission is ultimately responsible for tracking compliance with Member States enacting their own strategies to implement the standard.</p> <p>The phase-out scheme covers only non-directional lights, emitting light equally in all directions. It may also make exemptions for some technologies, including halogens with specific lamp caps and special purpose incandescent lamps such as traffic lights and infrared lamps. As implementation of this target loomed, buying panics and hoarding have occurred around Europe.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 55

<b>Country/Region</b>	<b>Austria</b>
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 13% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 56 and Target 57).
<b>Commentary</b>	<p>Austria's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 13% below 1990 levels for the period 2008-2012.</p> <p>Austria published its revised Climate Strategy in March, 2007. The strategy includes a variety of measures to meet the target, and was developed after Austria's previous plan was criticized.</p> <p>According to the European Environment Agency, Austria's emissions are set to increase to 17% above base-year levels by 2010, but Kyoto Protocol mechanisms and carbon sink activities may reduce this and help Austria achieve its 13% reduction target. In 2006, Austria was at an emissions level 15% above 1990 levels, and in November, 2008, the Austrian Court of Audit warned that the country would not meet its Kyoto target unless it stepped up its domestic efforts.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 56

<b>Country/Region</b>	<b>Austria</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Renewable Directive 2001/77/EC: 78% of electricity in the energy mix from renewables by 2010	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 55	
<b>Supporting Policies: Mandates and Incentives</b>	National solar incentives; national feed-in tariff; national Eco-Power Act, national tax exemptions for renewables; national subsidy programs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, Austria aims to increase its share of electricity from renewables to 78% by 2010.</p> <p>There are incentives for solar thermal installations in place, and much of Austria's success in renewable energy is due to a feed-in tariff. Austria also has an Eco-Power Act and a number of tax exemptions for renewable installations. Investment costs in solar systems and wind turbines are subsidized by the federal government. Austria has budgeted €21 million per year for new renewable electricity through 2011. This annual budget is pre-allocated in equal amounts of 30% each to biomass, biogas and wind, with the remaining 10% assigned to solar PV and other renewables. This budget represents a €4 million annual increase compared to previous levels.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>From 1997 to 2005, while the absolute amount of renewable electricity produced in Austria grew, the proportion of electricity produced by renewables fell from 70% to 59.8%.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 57

<b>Country/Region</b>	<b>Austria</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 34% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 55	
<b>Supporting Policies: Mandates and Incentives</b>	National solar incentives; national feed-in tariff; national Eco-Power Act, national tax exemptions for renewables; national subsidy programs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Austria's share of the target is to reach 34% renewables in gross final energy consumption by 2020.</p> <p>The Austrian Ministry of Agriculture, Forestry, Environment and Water Management has developed a plan to boost renewables to 25% of energy by 2010 and 45% by 2020. The country had until June, 2010, under the EU Directive, to develop this plan.</p> <p>There are incentives for solar thermal installations in place, and much of Austria's success in renewable energy is due to a feed-in tariff. Austria also has an Eco-Power Act and a number of tax exemptions for renewable installations. Investment costs in biomass heating systems, biogas facilities, small district heating systems, solar systems and wind turbines are subsidized by the federal government. Austria has budgeted €21 million per year for new renewable electricity through 2011. This budget represents a €4 million annual increase compared to previous levels.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive. In 2005, Austria met 23.3% of its energy needs through renewables.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 58

<b>Country/Region</b>	Belgium
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 7.5% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 59 and Target 60).
<b>Commentary</b>	<p>Belgium's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 7.5% below 1990 levels for the period 2008-2012. Belgium has a National Climate Policy in place with recommendations to meet the target.</p> <p>According to the European Environment Agency, projections show a decrease to 4% below base year emissions by 2010 and 9% with the use of mechanisms under the Kyoto Protocol.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 59

Country/Region	Belgium	
Policy Type	Legislation	
Policy Name/Description	EU Renewable Directive 2001/77/EC: 6% of gross electricity generation from renewable sources by 2010	
Date Announced	2001	
Target Date	2010	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2012	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 58	
Supporting Policies: Mandates and Incentives	National green certificate system; national feed-in tariffs; national subsidies for solar PV; national tax exemptions; European Investment Bank funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, Belgium aims to increase its share of electricity from renewables to 6% by 2010.</p> <p>Belgium has a National Climate Policy in place, which includes recommendations to meet the target. The main promotion scheme for renewable energy in Belgium is a green certificate system, which obliges electricity suppliers to source a set proportion of their energy from renewable generators. The Belgian scheme also offers guaranteed minimum prices (“fall-back prices”), which decreases the risk of renewable projects. An investment subsidy is also available for solar PV, as well as for renewable heat installations. To help finance renewable projects, the European Investment Bank is providing a Flemish bank with a €150 million loan.</p> <p>Companies that do not reach their renewable by the end of the certificate accounting period must pay a penalty. Penalties are €100 for each missing certificate (equivalent to 1 MWh of power) in Wallonia and Brussels. In Flanders, the penalty is €125 for each missing certificate.</p> <p>Although renewable energy penetration has been growing quickly, the 2010 interim target may be missed. In 2005, only 2.2% of power generation came from renewables.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 60

<b>Country/Region</b>	<b>Belgium</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 13% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	30 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 58	
<b>Supporting Policies: Mandates and Incentives</b>	National green certificate system; national feed-in tariffs; national subsidies for solar PV and renewable heat installations; national tax exemptions; European Investment Bank funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Belgium's share of the target is to reach 13% renewables in gross final energy consumption by 2020. Belgium has until June, 2010, under the EU Directive to develop a National Action Plan detailing plans to meet the 2020 target.</p> <p>The main promotion scheme for renewable energy in Belgium is a green certificate system, which obliges electricity suppliers to source a set proportion of their energy from renewable generators. The Belgian scheme also offers guaranteed minimum prices ("fall-back prices"), which decreases the risk of renewable projects. An investment subsidy is also available for solar PV, as well as for renewable heat installations. To help finance renewable projects, the European Investment Bank is providing a Flemish bank with a €150 million loan.</p> <p>Companies that do not reach their renewable by the end of the certificate accounting period must pay a penalty. Penalties are €100 for each missing certificate (equivalent to 1 MWh of power) in Wallonia and Brussels. In Flanders, the penalty is €125 for each missing certificate.</p> <p>According to the European Environment Agency, Belgium will find it difficult to meet the 2020 its target even with planned additional domestic policies and measures. In 2005, only 2.2% of power generation came from renewables.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 61

<b>Country/Region</b>	<b>Bulgaria</b>
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1988 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	40 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 62).
<b>Commentary</b>	<p>Bulgaria's individual Kyoto Protocol emissions target is to reach an emissions level 8% below base 1988 levels for the period 2008-2012.</p> <p>Bulgaria is expected to significantly overachieve its target, potentially reaching 35% below base year levels by 2010, when the support of mechanisms under the Kyoto Protocol is factored in.</p> <p>Bulgaria has put in place a number of policies that support achieving its emissions target. An Energy Strategy was adopted by Parliament in July, 2002, that envisages using market mechanisms to transform the sector. An Act on Renewable Energy Supply was adopted in June, 2007. The act aims to diversify energy supply, promote environmental protection, set the terms for sustainable local and regional development, and increase the capacity of small and medium enterprises and renewable energy producers. Legislation is expected in 2011 on using market mechanisms to encourage production of electricity and heat from renewable energy sources.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 62

<b>Country/Region</b>	<b>Bulgaria</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 16% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 61	
<b>Supporting Policies: Mandates and Incentives</b>	National public funding; national feed-in tariff; national tax exemptions; national Renewable and Energy Acts; national green certificates.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Bulgaria's share of the target is to reach 18% renewables in gross final energy consumption by 2020.</p> <p>Bulgaria's National Program on Renewable Energy Sources (RES) has a goal of significantly increasing the share of non-hydro renewables in the energy mix. Bulgaria's Renewable and Alternative Energy Sources and Biofuels Act (2007), Energy Act (2003), and Energy Efficiency Act (2004) support renewable energy. A bill is expected in 2011 that will detail market mechanisms for encouraging production of electricity and heat from renewable energy sources.</p> <p>There are comprehensive feed-in tariffs for hydro, wind, solar PV and Biomass &lt; 5MW. The European Bank for Reconstruction and Development is investing in both energy and generation and transmission in Bulgaria.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>9.4% of final energy consumption came from renewables in 2005. Most of this was from hydro.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 63

<b>Country/Region</b>	<b>Cyprus</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 13% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	National grants; national subsidies; national public funding; national feed-in tariff; national levy on electricity consumption.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Cyprus's share of the target is to reach 13% renewables in gross final energy consumption by 2020.</p> <p>Cyprus has developed an Action Plan for the Promotion of Renewable Energy Sources, 2002-2010. The Cyprus Energy Regulatory Authority is responsible for increasing the use of renewable energy in Cyprus.</p> <p>Supporting policies include an Enhanced Grant Scheme, introduced in January, 2006, which includes government grants and feed-in tariffs. Wind, biomass, landfill and sewage gas, small hydro, and solar PV are eligible for feed-in tariffs under the scheme. There is a fund set up for the promotion of renewable energy. The money for the fund comes from a levy imposed on all electricity consumption (at a value of €0.22 per kWh), donations, and government grants. A new plan on supporting electricity produced by biomass has been developed and forwarded to the Commission for approval.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>Renewables made up 2.9% of gross energy consumption in 2005.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 64

<b>Country/Region</b>	<b>Czech Republic</b>
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	30 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 65, Target 66 and Target 67).
<b>Commentary</b>	<p>The Czech Republic's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1990 levels for the period 2008-2012.</p> <p>The Czech Republic is expected to overachieve its target; projections show a decrease of 25% below base year emissions by 2010.</p> <p>The Czech Republic has implemented a number of policies to support target achievement. There is a State Environmental Fund that provides significant funding for renewable projects. The Czech Republic ratified its State Energy Conception in 2004. The plan sets renewable targets up to 2030. Under the plan, premium payments are expected to be developed for producers of electricity from combined heat and power plants. The Czech Republic is also encouraging the use of biofuels through the Air Protection Act (2002).</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 65

Country/Region	Czech Republic	
Policy Type	Legislation	
Policy Name/Description	EU Renewable Directive 2001/77/EC: 8% of gross electricity generation from renewable sources by 2010	
Date Announced	2001	
Target Date	2010	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2012	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 64	
Supporting Policies: Mandates and Incentives	National feed-in tariff; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, the Czech Republic aims to increase its share of electricity to 8% by 2010. The Czech Republic's State Energy Policy, which was adopted in 2004, sets the strategy to meet the 8% target.</p> <p>A key limiting factor to the development of renewable energy in the Czech Republic is that existing overcapacity of electricity production has hampered the development of renewables. The failed privatization of the monopoly CEZ and the significant excess capacity of 27,000 GWh with the full commissioning of the Temelin Nuclear Power Plant will remain a major barrier for renewable electricity development for at least another decade.</p> <p>A feed-in system for renewable energy was established in 2002. In March, 2005, the system was adapted to allow producers to choose between a feed-in tariff and feed-in premium (green bonus). Producers can choose each year which scheme they want to use. The feed-in tariff is a guaranteed price for each unit of electricity for 15 years while the green bonus is paid on top of the market price for electricity.</p> <p>There are penalties in place for violations of the standard on the part of the grid operator or plant operators.</p> <p>4.9% of electricity consumption came from renewables in 2006, according to Eurostat.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 66

Country/Region	Czech Republic	
Policy Type	Legislation	
Policy Name/Description	6% share of renewable energy in primary energy by 2010 and 15-16% by 2030	
Date Announced	2004	
Target Date	2010	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 64	
Supporting Policies: Mandates and Incentives	National feed-in tariff; national feed-in premium; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>The State Energy Policy adopted in 2004 set a long term target to reach 15-16% renewable energy in total primary energy consumption of by 2030. The National Program for Effective Energy Management and the Utilization of Renewable and Secondary Sources of Energy sets out the government's renewable strategy.</p> <p>A key limiting factor to the development of renewable energy in the Czech Republic is that existing overcapacity of electricity production has hampered the development of renewables. The failed privatization of the monopoly CEZ and the significant excess capacity of 27,000 GWh with the full commissioning of the Temelin Nuclear Power Plant will remain a major barrier for renewable electricity development for at least another decade.</p> <p>A feed-in system for renewable energy was established in 2002. In March, 2005, the system was adapted to allow producers to choose between a feed-in tariff and feed-in premium (green bonus). Producers can choose each year which scheme they want to use. The feed-in tariff is a guaranteed price for each unit of electricity for 15 years while the green bonus is paid on top of the market price for electricity.</p> <p>There are penalties in place for violations of the standard on the part of the grid operator or plant operators.</p> <p>The current share of renewables in the Czech Republic's primary energy base 3% in 2008. Biomass dominates the renewable energy sector.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 67

Country/Region	Czech Republic	
Policy Type	Legislation	
Policy Name/Description	EU Directive 2009/28/EC: 13% of gross final energy consumption from renewable sources by 2020	
Date Announced	January, 23 <sup>rd</sup> , 2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	10 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 64	
Supporting Policies: Mandates and Incentives	National feed-in tariff; national feed-in premium; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. The Czech Republic's share of the target is to reach 13% renewables in gross final energy consumption by 2020.</p> <p>The National Program for Effective Energy Management and the Utilization of Renewable and Secondary Sources of Energy sets out the government's renewable strategy.</p> <p>A key limiting factor to the development of renewable energy in the Czech Republic is that existing overcapacity of electricity production has hampered the development of renewables. The failed privatization of the monopoly CEZ and the significant excess capacity of 27,000 GWh with the full commissioning of the Temelin Nuclear Power Plant will remain a major barrier for renewable electricity development for at least another decade.</p> <p>A feed-in system for renewable energy was established in 2002. In March, 2005, the system was adapted to allow producers to choose between a feed-in tariff and feed-in premium (green bonus). Producers can choose each year which scheme they want to use. The feed-in tariff is a guaranteed price for each unit of electricity for 15 years while the green bonus is paid on top of the market price for electricity.</p> <p>Renewables accounted for 6.2% of gross final energy consumption in 2006.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 68

<b>Country/Region</b>	Denmark
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 21% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 69 and Target 70).
<b>Commentary</b>	<p>Denmark's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 21% below 1990 levels for the period 2008-2012. Projections show that emissions will decrease to an average level 2% below base-year emissions with existing policies and measures during 2008-2012. Use of Kyoto Protocol mechanisms could bring this to a reduction of 12%. Further emissions restrictions on industries may bring further reductions, but it is unclear if these reductions will be sufficient to meet Denmark's target.</p> <p>While there is a climate and energy policy in place in Denmark, the Danish think tank, Poyry, published a report in February, 2009, suggesting that the current strategy was not sufficient for Denmark to meet its 2012 targets. In October, 2008, the European Environment Agency also reported that Denmark was unlikely to meet its emissions target under the Kyoto Protocol.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 69

<b>Country/Region</b>	Denmark	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	20% of overall energy mix from renewable sources by 2011	
<b>Date Announced</b>	February, 2008	
<b>Target Date</b>	2011	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 68	
<b>Supporting Policies: Mandates and Incentives</b>	National tax exemptions; national Promotion of Renewable Energy Act; national feed-in tariffs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Denmark's Government agreed in February, 2008, on a target to increase its use of renewable energy to 20% by 2011. Denmark's Energy Policy 2008-2011 lays out the strategy to meet the target. In January, 2009, the Promotion of Renewable Energy Act was passed. Its purpose is to contribute to ensuring fulfillment of national and international objectives on increasing the proportion of energy produced through the use of renewable energy sources. Danish plans calls for better subsidies for developing energy from biomass, biogas and bio-hydrogen, and for two new wind parks to be built off the coast by 2012.</p> <p>Renewable facilities connected prior to April, 21, 2004 receive a feed-in tariff. Plants receive the spot market price plus a top-up subsidy to provide a guaranteed price of €0.081 per kWh. Facilities connected after April, 21, 2004 receive production incentives. For instance, wind plants receive the spot market price plus a €0.013 per kWh production incentive. Significant sums have been allocated to subsidize renewable energy technologies. In 2009, the Government announced that it would double public funding for new energy R&amp;D to €134 million.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>Denmark has increased renewable penetration to over 17% (in 2008) of overall energy consumption. In the latest Danish forecast (May, 2009), the renewable share of total energy consumption is expected to be 21% in 2011.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 70

<b>Country/Region</b>	Denmark	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 30% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 68	
<b>Supporting Policies: Mandates and Incentives</b>	Tax exemptions; Promotion on Renewable Energy Act; Government R&D Funding; Feed-in Tariffs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Denmark's share of the target is to reach 30% renewables in gross final energy consumption by 2020.</p> <p>Denmark already has a detailed Energy Policy 2008-2011, which lays out the strategy to meet its national 2011 target. Denmark has until June, 2010, under the EU Directive to develop a National Action Plan detailing plans to meet the 2020 EU target. In January, 2009, the Promotion of Renewable Energy Act was passed. Danish plans calls for better subsidies for developing energy from biomass, biogas and bio-hydrogen, and for two new wind parks to be built off the coast by 2012. In 2009, the Government announced that it would double public funding for new energy R&amp;D to €134 million.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>Denmark has increased renewable penetration to over 17% (in 2008) of overall energy consumption. In the latest Danish forecast (May, 2009), the renewable share of total energy consumption is expected to be 21% in 2011.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 71

<b>Country/Region</b>	Estonia
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 21% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 72).
<b>Commentary</b>	<p>Estonia's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1990 levels for the period 2008-2012.</p> <p>In 2006, Estonia's emissions were 56% lower than base-year levels and projections show emissions will decrease further to reach a level 63% below base-year by 2010. Estonia will therefore significantly overachieve its Kyoto target.</p> <p>Estonia has developed a number of policies that support target achievement. A Long-term Public Fuel and Energy Sector Development Plan until 2015 was adopted through a decision of the Parliament on 15<sup>th</sup>, December, 2004. Estonia has feed-in tariffs in place to encourage renewable development and these are regulated by the Electricity Market Act, 2003.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 72

<b>Country/Region</b>	<b>Estonia</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 25% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 71	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national public funding; national green certificates.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Estonia's share of the target is to reach 25% renewables in gross final energy consumption by 2020.</p> <p>Programs to promote renewable energy include: a Long-term Plan for the Fuel and Energy Industry; a National Energy Conservation Program; an Action Plan for Energy Conservation; and a National Environment Strategy. Feed-in tariffs are regulated by the 2003 Electricity Market Act. In May, 2007, feed-in tariffs for renewable energy increased from €52 per MWh to €74.2 per MWh. From January, 2009, producers that use wind energy may sell renewable electricity at fixed tariffs until the total annual amount of electricity generated from wind in Estonia increases to 200 GWh. There is a high degree of complexity in the relationship between the state support system and a voluntary Green Energy Participation System run by the state owned grid operator.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>According to the European Commission, Estonia has one of the lowest penetration rates of renewable energy in the EU. The share of renewable energy sources in final consumption fell from 1.8% in 2005 to 1.6% in 2006.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 73

Country/Region	Finland
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 0% change in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements.
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 74 and Target 75).
<b>Commentary</b>	<p>Finland's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level that is even with 1990 levels for the period 2008-2012.</p> <p>In 2006, Finland's emissions were 13% higher than base-year level, well above its target for the period. Projections show that with existing policies emissions will increase to 20% above base-year by 2010. Finland hopes to reach a level 1% below base-year through use of Kyoto Protocol mechanisms and carbon sink activities.</p> <p>A 2008 European Environment Agency report noted that Finland was one of 6 Member States that was furthest from its Kyoto Protocol target.</p>



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 74

<b>Country/Region</b>	<b>Finland</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Renewable Directive 2001/77/EC: 31.5% of gross electricity generation from renewable sources by 2010	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 73	
<b>Supporting Policies: Mandates and Incentives</b>	National tax exemptions; national investment subsidies; national feed-in tariffs; national guaranteed grid access arrangements.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, Finland aims to increase its share of electricity from renewables to 31.5% by 2010.</p> <p>In 2001, Finland published its National Climate Strategy, which integrated renewable strategy to its objective of meeting its Kyoto Protocol commitments. Targets for renewables are clearly spelled out by technology class, and interim targets are in place.</p> <p>Finland has put a number of measures in place to support renewables. These include: Exempting electricity from renewable sources from the energy tax paid by end users; subsidizing new investments in renewables up to 30% (40% for wind); and providing guaranteed access to the grid for all electricity users and electricity-producing plants, including renewable electricity generators. In April, 2009, Finland's Government proposed a feed-in tariff for wind power of €33.5 per MWh, which will be introduced in 2010, and will be set for a period of 12 years. The National Technology Agency of Finland provides €10 million of annual funding for renewable energy.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>28.5% of power generation came from renewables in 2004, meaning Finland is on track to meet its 2010 renewable target.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 75

<b>Country/Region</b>	<b>Finland</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 38% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 73	
<b>Supporting Policies: Mandates and Incentives</b>	Tax subsidies; investment subsidies; Feed-in tariffs; Guaranteed grid access arrangements; Tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Finland's share of the target is to reach 38% renewables in gross final energy consumption by 2020.</p> <p>Finland published its National Climate Strategy in 2001 detailing plans for renewable energy. The country had until June, 2010, under the EU Directive, to develop this plan. Measures in place to support renewables include: exempting electricity from renewable sources from the energy tax paid by end users; subsidizing new investments in renewables up to 30% (40% for wind); and providing guaranteed access to the grid for renewable electricity generators. In April, 2009, Finland's Government proposed a feed-in tariff for wind power of €83.5 per MWh, which will be introduced in 2010, and will be set for a period of 12 years. The National Technology Agency of Finland also provides €10 million of annual funding for renewable energy.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>28.5% of power generation came from renewables in 2004, meaning Finland is on track to meet its 2010 renewable target. According to provisional data, in 2008, 31% of gross final energy consumption came from renewables.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 76

<b>Country/Region</b>	France
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 0% change in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements.
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	45 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade and Carbon Tax (proposed)
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 77 and Target 78); national lighting efficiency standard (Target 79); proposed national carbon tax (2009).
<b>Commentary</b>	<p>France's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level even with 1990 levels for the period 2008-2012. In 2006, emissions were 4% below base year levels, below France's burden sharing target of 0% for the period. With existing policies, emissions will increase to reach a level 1% above base-year emissions by 2010. However, France expects to achieve a level 4% below base-year emissions through use of Kyoto Protocol mechanisms and other measures.</p> <p>France has a well-developed strategy to support target achievement. In 2004, France published a detailed plan with 60 measures aimed at reducing greenhouse gas emissions. France has put in place generous feed-in tariffs for renewable technologies and continues to roll out nuclear as part of its broader energy program. In September, 2009, France also unveiled a carbon tax at €17 per ton of CO<sub>2</sub> emitted. This tax, which would be levied on oil, gas and coal consumption by households and businesses, is scheduled to come into effect in 2010.</p> <p>To track its progress, France prepares an inventory of greenhouse gases and submits it to the European Commission. The Commission, in turn, makes an annual progress report to the European Parliament and Council. The UN climate secretariat released figures in November, 2008, showing that France is on target to meet its Kyoto obligation.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 77

<b>Country/Region</b>	<b>France</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Renewable Directive 2001/77/EC: 21% of gross electricity generation from renewable sources by 2010	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	35 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 76	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national tax credits; national capital grants for biofuels; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, France aims to increase its share of electricity from renewables to 21% by 2010.</p> <p>While France has developed a detailed renewable strategy as part of its climate plan, France is far off meeting the target. The proportion of renewable electricity has actually declined, from 15% in 1997 to 11% in 2005.</p> <p>Supporting policies for renewables, however, include some of the most generous feed-in tariffs in the world. The tariffs were introduced in 2001 and 2002 and modified in 2005 and 2006. Changes to the country's system of Advanced Renewable Tariffs in 2006, raised the base tariff from €0.15 to €0.30 per kWh, resulting in many new renewable energy projects. A new feed-in tariff category for solar PV in commercial buildings of €0.45 per kWh was introduced in November, 2008. Tariffs will remain in place until 2012. There is also a 50% tax credit available for residential solar PV systems and a tender system for large renewable projects.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 78

<b>Country/Region</b>	<b>France</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 23% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	50 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 76	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national tax credits; national capital grants for biofuels; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. France's share of the target is to reach 23% renewables in gross final energy consumption by 2020. France has a detailed plan in place on how it expects to meet the 2020 target.</p> <p>Supporting policies for renewables include some of the most generous feed-in tariffs in the world. The tariffs, introduced in 2001 and 2002, were modified in 2005 and 2006. Changes to the country's system of Advanced Renewable Tariffs in 2006, raised the base tariff from €0.15 to €0.30 per kWh, resulting in many new renewable energy projects. A new feed-in tariff category for solar PV in commercial buildings of €0.45 per kWh was introduced in November, 2008. Tariffs will remain in place until 2012. There is also a 50% tax credit available for residential solar PV systems and a tender system for large renewable projects. A Renewable Energy Heat Fund is also due to be launched in 2010 to support the production of heat from geothermal, biogas and solar thermal collectors. The French Ministry has also announced a plan to boost hydropower as part of the country's goal to have 23% renewables.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 79

<b>Country/Region</b>	<b>France</b>	
<b>Policy Type</b>	Voluntary	
<b>Policy Name/Description</b>	Phase out incandescent light bulbs by 2012	
<b>Date Announced</b>	October, 2008	
<b>Target Date</b>	2012	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 76	
<b>Supporting Policies: Mandates and Incentives</b>	National manufacturing incentives.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>French retailers signed an agreement with the government to phase out incandescent light bulbs by 2012. There is a detailed plan in place with 8 key objectives including: tripling market share of low-energy lamps by 2010; reorganizing sales points so that low-energy bulbs account for half of aisle space by the end of 2008; reducing energy consumption of lamps sold in 2010 by one half; and undertaking promotional activities to reduce the cost of low-energy lamps with EDF participation.</p> <p>The agreement was signed and has the support of the Ministry of Ecology, Energy, Sustainable Development and Planning, home DIY retailers, organization of recycling used lamps, EDF energy and the French energy management agency ADEME. EDF is responsible for marketing and awareness campaigns.</p> <p>There is an indicative calendar for phasing out bulbs in place: On June 30<sup>th</sup>, 2009, incandescent light bulbs greater than 100W were phased out; on December 31<sup>st</sup>, 2009, incandescent light bulbs greater or equal to 75 W will be phased out; on June 30<sup>th</sup>, 2010, incandescent light bulbs greater or equal to 60 W will be phased out; on August 31<sup>st</sup>, 2011, incandescent light bulbs greater or equal to 40 W will be phased out; and on December 31<sup>st</sup>, 2012, incandescent light bulbs greater or equal to 25 W will be phased out.</p> <p>There are some manufacturing incentives to switch to more efficient light bulbs, as well as public incentives to encourage consumers to purchase more efficient products.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 80

Country/Region	Germany
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 21% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	80 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 82, Target 83, Target 84 and Target 85); national energy efficiency standard (Target 86).
<b>Commentary</b>	<p>Germany's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 21% below 1990 levels for the period 2008-2012.</p> <p>In 2007, emissions were 21.3% lower than base year levels. Projections show that emissions will decrease to 22% below base year levels by 2010, and further measures, including use of the Kyoto Protocol mechanisms, will bring this to 26% below base year levels.</p> <p>Germany is therefore likely to overachieve its target with existing domestic policies and measures.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 81

<b>Country/Region</b>	<b>Germany</b>
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	40% reduction in greenhouse gas emissions below 1990 levels by 2020
<b>Date Announced</b>	April, 2007
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	160 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 82, Target 83, Target 84 and Target 85); national energy efficiency standard (Target 86).
<b>Commentary</b>	<p>In April, 2007, Germany's Prime Minister unveiled an eight point plan to reduce emissions by 40% from 1990 levels by 2020.</p> <p>Key measures in the plan designed to reduce emissions include modernizing Germany's power stations, increasing the share of renewable electricity production, cutting electricity consumption, using more renewables for heating, and increasing fuel efficiency and the use of biofuels in transport.</p> <p>Germany has ambitious Renewable Portfolio Standards and national energy efficiency standards, as well as an Energy Industry Act to help link offshore wind farms to the national grid. The Renewable Saving Ordinance is designed to ensure that new buildings are low-energy, while the German Renewable Energy Heat Act increases the generation of heat from renewable sources in buildings. There is also a generous feed-in tariff system in place to support onshore wind, solar photovoltaics, biomass and biogas and hydro and geothermal sources.</p> <p>In 2007, according to the German Ministry of Environment, emissions were 21.3% lower than 1990 levels. Projections show that Germany will overachieve its Kyoto emissions target for 2009-2012. However despite this good progress, a report issued by consulting firm ECOTech in August, 2009, found that the 2020 target will be hard to meet.</p>



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 82

<b>Country/Region</b>	<b>Germany</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Renewable Directive 2001/77/EC: 12.5% of gross electricity generation from renewables by 2010	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 80 and Target 81	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national subsidized loans.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, Germany aims to increase its share of electricity from renewables to 12.5% by 2010.</p> <p>In its Renewable Energy Sources Act, Germany already has a highly successful instrument for promoting power generation from renewable sources, and it has spurred wide-scale renewable uptake. Generous feed-in tariffs are in place for onshore wind, offshore wind, solar PV, biomass and biogas, hydro and geothermal. Under the German feed-in tariff legislation, renewable energy technologies are guaranteed interconnection with the electricity grid, and are paid a premium rate that is designed to generate a reasonable profit for investors over a 20-year term. The Deutsche Ausgleichsbank Environment and Energy Efficiency Program also offer subsidized loans for wind investments.</p> <p>The Renewable Energy Sources Act requires information to be passed on to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The Federal Network Agency is responsible for monitoring tariffs and data submission. The act provides wide-ranging powers to federal government to enforce it. Any administrative offence can be punished by a fine of up to €100,000. The government is charged with evaluating the Act and submitting a progress report to the Bundestag by the end of 2011 and subsequently every four years thereafter.</p> <p>This target has already been met. In 2008, renewables accounted for 14.8% of total gross electricity consumption.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 83

<b>Country/Region</b>	<b>Germany</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 18% of gross final energy consumption from renewable sources by 2020; 50% by 2050	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020 and 2050	
<b>CO<sub>2</sub> Abatement Potential</b>	135 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 80 and Target 81	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national subsidized loans; national tax exemptions; national subsidies; national investment in R&D.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Germany's share of the target is to reach 18% renewables in gross final energy consumption by 2020.</p> <p>In its Renewable Energy Sources Act, Germany already has a highly successful instrument for promoting power generation from renewable sources, and it has spurred wide-scale renewable uptake. Generous feed-in tariffs are in place for onshore wind, offshore wind, solar PV, biomass and biogas, hydro and geothermal. Under the German feed-in tariff legislation, renewable energy technologies are guaranteed interconnection with the electricity grid, and are paid a premium rate that is designed to generate a reasonable profit for investors over a 20-year term. The Deutsche Ausgleichsbank Environment and Energy Efficiency Program also offer subsidized loans for wind investments.</p> <p>The Renewable Energy Sources Act requires information to be passed on to the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. The act provides wide-ranging powers to federal government to enforce it. Any administrative offence can be punished by a fine of up to €100,000. The government is charged with evaluating the Act and submitting a progress report to the Bundestag by the end of 2011 and subsequently every four years thereafter.</p> <p>Renewables currently account for 9% of final energy consumption.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 84

<b>Country/Region</b>	<b>Germany</b>	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	Energy Road Map 2020: 30% share of electricity consumption from renewable sources by 2020.	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 80 and Target 81	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national subsidized loans; national tax exemptions; national subsidies; national investment in R&D.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In January, 2009, Sigmar Gabriel, Germany's Environment Minister pledged that a third of the country's energy will come from green sources by 2020 as part of a new Road Map for Climate, Energy and Growth.</p> <p>The 'Energy Roadmap' sets out a 10 point plan for 2020 including: Securing a lasting energy supply, deriving 30% of electricity from renewables, phasing out nuclear power, reducing electricity consumption by 11%, and reducing fossil heat requirements by at least 25%.</p> <p>In its Renewable Energy Sources Act, Germany already has a highly successful instrument for promoting power generation from renewable sources, and it has spurred wide-scale renewable uptake. Generous feed-in tariffs are in place for onshore wind, offshore wind, solar PV, biomass and biogas, hydro and geothermal. Under the German feed-in tariff legislation, renewable energy technologies are guaranteed interconnection with the electricity grid, and are paid a premium rate that is designed to generate a reasonable profit for investors over a 20-year term. The Deutsche Ausgleichsbank Environment and Energy Efficiency Program also offers subsidized loans for wind investments.</p> <p>Currently, about 15% of gross power consumption is sourced from renewables in Germany, according to the Ministry of Environment.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 85

Country/Region	Germany	
Policy Type	Legislation	
Policy Name/Description	Renewable Energies Heat Act: 14% increase in share of renewables in the heat supply by 2020	
Date Announced	January, 2009	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	No impact on BAU in 2012 and 2020	
Policy Category	Renewable Portfolio Standard: Energy; Sector/Industry Specific Regulation	
Related Emissions Target(s)	Target 43, Target 44, Target 45, Target 80 and Target 81	
Supporting Policies: Mandates and Incentives	National market incentive program; national government funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>The Renewable Energies Heat Act stipulates that from January 1<sup>st</sup>, 2009, owners of newly erected buildings must use renewable energy for their heat requirements. The act also puts a number of measures in place to make it easier to extend heat grids.</p> <p>There is a market incentive program in place, in addition to the mandate that all new buildings must use renewables. The German government has recently increased support for the market incentive program to as much as €500 million per year.</p> <p>The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, and the Federal Office of Economics and Export Control, are responsible for implementation.</p> <p>The government is charged with evaluating the Act and submitting a progress report to the Bundestag by the end of 2011 and subsequently every four years thereafter. The progress report must include four key elements: status of the market introduction of installations, technological developments, quantities of mineral oil and natural gas saved, and enforcement.</p> <p>Violations of the act can be punished with a fine of up to either €22,000 or €50,000, based on the contravention.</p> <p>Biomass alone contributed 6.2% of Germany's heat consumption in 2007.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 86

<b>Country/Region</b>	<b>Germany</b>	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	Energy Road Map 2020: 11% cut in electricity consumption from 2005 levels by 2020.	
<b>Date Announced</b>	2007	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 80 and Target 81	
<b>Supporting Policies: Mandates and Incentives</b>	National Eco-Tax Law; national Energy Saving Act; national fiscal reform; national building standards.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Germany announced an aspirational target to reduce power consumption by 11% in 2007 and the strategy to achieve this is outlined in the new Energy Road Map for Germany, released in January, 2009.</p> <p>Studies on behalf of the German government before the Energy Summit in 2007 identified the measures that would be needed to cut power consumption by 2020 to a level 11% below that of 2005. Some important steps have already been achieved through the government's Integrated Energy and Climate Program.</p> <p>From 2005 to 2009, the federal government R&amp;D funding for energy efficiency by €6.5 billion. A variety of supporting policies, from the Eco-Tax Law, to the Energy Saving Ordinance, to the Energy Saving Act, are in place. Fiscal reform has been undertaken to reduce energy consumption. There is a market incentive program in place, in addition to the mandate that all new buildings must use renewables. The government has also been working to increase planning certainty.</p> <p>Germany has a strong track record of meeting climate targets, and has decreased its consumption of primary energy resources in absolute terms since 1990 despite its increasing GDP.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 87

<b>Country/Region</b>	Greece
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 25% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 88 and Target 89).
<b>Commentary</b>	<p>Greece's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level no higher than 25% above 1990 levels for the period 2008-2012. In 2006, Greece's emissions were 24% higher than base year levels. Projections show that emissions will remain at a level 24% above base year emissions for the period 2008-2012. Additional measures, including use of the Kyoto Protocol mechanisms, may reduce emissions to 21% above base year emissions.</p> <p>The Greek government has implemented a National Action Plan to reduce greenhouse gas emissions. The plan proposes improving energy provision by promoting renewable energy technologies and reducing energy consumption.</p> <p>Despite the plan, Greece is already very close to missing its targets as economic growth is driving an increase in greenhouse gas emissions. According to the Center for Research and Technology Hellas (CERTH), Greece will miss its targets unless additional measures are implemented.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 88

Country/Region	Greece	
Policy Type	Legislation	
Policy Name/Description	EU Renewable Directive 2001/77/EC: 20.1% of gross electricity generation from renewable sources by 2010	
Date Announced	2001	
Target Date	2010	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2012	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 87	
Supporting Policies: Mandates and Incentives	National tax exemptions; national feed-in tariff; National Operational Program Competitiveness.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
Overall Risk Assessment	<b>3</b>	
Supporting Commentary	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, Greece aims to increase its share of electricity from renewables to 20.1% by 2010. The Greek Ministry of Development's Operational Program Competitiveness (OPC) offers a powerful financing instrument to implement renewable energy technology investments. In June, 2009, Greece complemented its revised feed-in tariff scheme with a €0.55/kWh rate for small roof-mounted projects. There is also a 20% rebate on income taxes for expenses for domestic appliances/systems using renewable energy.</p> <p>Despite powerful incentives and plentiful renewable resources, the installed power of renewable energy in Greece remains low (12.1% in 2008). Investments through the OPC have been delayed due to a complex legislative framework, budgetary constraints, and infrastructure project delays. <i>The Boston Globe</i> notes that: "Red tape, a lack of political will, and local opposition has cramped the development of an otherwise promising renewables energy market in Greece, whose climate is endowed with plenty of sunshine and wind. This puts Greece far behind European Union leaders in the field, such as much less sunny Germany." In September, 2009, Bloomberg reported that Greece's budget deficit will reach twice the European Union limit this year; prompting the ruling New Democracy Government to propose spending cuts.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 89

<b>Country/Region</b>	<b>Greece</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 18% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 87	
<b>Supporting Policies: Mandates and Incentives</b>	National tax exemptions; national feed-in tariff; National Operational Program Competitiveness.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Greece's share of the target is to reach 18% renewables in gross final energy consumption by 2020. In 2007, the Government announced Greece's Long-term Energy Planning 2008-2020 with a basic scenario to increase the use of renewable energy sources.</p> <p>The Greek Ministry of Development's Operational Program Competitiveness (OPC) offers a powerful financing instrument to implement renewable energy technology investments. The OPC aims to modernize the Greek energy system, improve national economic competitiveness, and monitor the country's environmental commitments. In June, 2009, Greece complemented its revised feed-in tariff scheme with a €0.55/kWh rate for small roof-mounted projects. Other supporting policies include a 20% rebate on income taxes for expenses for domestic appliances or systems using renewable energy.</p> <p>Despite powerful incentives and plentiful renewable resources, the installed power of renewable energy in Greece remains low. Investments through the OPC have been delayed due to a complex legislative framework, budgetary constraints, and infrastructure project delays. The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 90

Country/Region	Hungary
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 6% reduction in greenhouse gas emissions below the average of 1985-1987 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	35 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 91).
<b>Commentary</b>	<p>Hungary's individual Kyoto target is to reach an emissions level 6% below the average of 1985-1987 levels for the period 2008-2012.</p> <p>In 2006, emissions were 32% lower than base year levels. Projections show that, with existing policies and measures, emissions will increase to 25% below base year levels by 2010, meaning Hungary will significantly overachieve its target according to the UN.</p> <p>Hungary has put in place a number of policies to support achieving its target. In 2008 the Hungarian Renewable Strategy (2007-2020) was approved by the Parliament. The strategy established targets for renewable energy, electricity and biofuels. As part of the strategy, feed-in tariffs were put in place to encourage the development of renewable energy.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 91

<b>Country/Region</b>	<b>Hungary</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 13% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 90	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national public funding; national subsidies.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Hungary's share of the target is to reach 13% renewables in gross final energy consumption by 2020.</p> <p>The Hungarian Energy Saving and Energy Efficiency Improvement Action Program sets an interim renewables target of 6% by 2010. In 2008, the Government approved the Renewable Energy Strategy for 2007-2020, which favors decentralized generation, cogeneration of heat and power and the establishment of small power stations. The strategy forecasts a substantial amount of new investments by 2020. The New Electricity Act of January, 2008, set new feed-in tariffs and the system was modified in favor of smaller plants and those providing remote heating in 2008. A key strength of the feed-in tariff is that it is guaranteed for the lifetime of the installation with no limit defined by law. Plant operators may also receive subsidies from European Structural Funds or the National Program for the Promotion of Energy-Saving Measures and there is the possibility that green certificates will be introduced.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>In Q1 2009 4.3% of final energy consumption came from renewable energy.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 92

<b>Country/Region</b>	Ireland
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 13% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 93 and Target 94); national biofuel standard (Target 95)
<b>Commentary</b>	<p>Ireland's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level no higher than 13% above 1990 levels for the period 2008-2012. In 2006, emissions were 25% higher than base year levels.</p> <p>Projections show that emissions will decrease to a level 23% above base year emissions by 2010. Ireland can reach its target through emission reductions from Kyoto Protocol mechanisms, potentially reaching a level of 12% above base year emissions.</p> <p>According to the UN, Ireland is underachieving in meeting its Kyoto obligation. However, in March, 2009, the Irish Environmental Protection Agency announced that the economic downturn had led to a dramatic reduction in greenhouse gas emissions in Ireland. New projections showed Ireland to be much closer to achieving its target than it was before the economic downturn.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 93

<b>Country/Region</b>	<b>Ireland</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 16% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 92	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national public funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Ireland's share of the target is to reach 16% renewables in gross final energy consumption by 2020.</p> <p>Ireland's strategy for scaling up renewable energy was set out in its White Paper on Energy Policy. Supporting policies for renewable energy include a guaranteed 15-year feed-in tariff system for onshore wind, offshore wind, biomass, hydro and wave energy. The structure of the feed-in tariff regime is somewhat complex – it guarantees a minimum payment, but the purchase price must be negotiated between generators and suppliers. A valid grid connection is required before applying for payments through the feed-in tariff. Ireland's Government has committed up to €119 million for its feed-in tariffs. There is an independent government agency, Sustainable Energy Ireland, tasked with implementing Ireland's climate change efforts.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms is the weakest point of the EU's renewable directive.</p> <p>The European Commission notes that Ireland has successfully increased the proportion of renewables in final energy consumption from 3.6% to 6.9% from 1997 to 2005.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 94

Country/Region	Ireland	
Policy Type	Legislation	
Policy Name/Description	National Energy Plan: 40% of electricity from renewables by 2020	
Date Announced	October, 2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 92	
Supporting Policies: Mandates and Incentives	Feed-in tariffs; public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
Overall Risk Assessment	2	
Supporting Commentary	<p>The Irish government's White Paper on Energy Policy set out national targets and in October, 2008, Ireland announced an increase to its national renewable energy target from 33% by 2020 to 40% by that year, with an interim target of 15% by 2010. This is one of the boldest renewable targets in the world.</p> <p>Supporting policies for renewable energy include a guaranteed 15-year feed-in tariff for onshore wind, offshore wind, biomass, hydro and wave energy. The structure of the feed-in tariff regime is somewhat complex – it guarantees a minimum payment, but the purchase price must be negotiated between generators and suppliers. A valid grid connection is required before applying for payments through the feed-in tariff.</p> <p>Ireland's Government has committed up to €119 million for its feed-in tariffs. There is an independent government agency, Sustainable Energy Ireland, tasked with implementing Ireland's climate change efforts.</p> <p>The share of electricity from renewable energy doubled between 1990 and 2008 in Ireland from 4.9% to 12.2%.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 95

Country/Region	Ireland	
Policy Type	Legislation	
Policy Name/Description	Biofuels comprise 10% of road transport fuels by 2020	
Date Announced	2007	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Fuel Standard	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 92	
Supporting Policies: Mandates and Incentives	National excise relief; national public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>The Irish government's White Paper on Energy Policy established a target that renewable energy account for 10% of petrol and diesel transport energy by 2020, with interim targets of 2% by 2008 and 3% by 2010. The Irish are currently formulating a biofuels plan to be submitted to the EU by June of 2010. A previous plan, Liquid Biofuels Strategy Study for Ireland, was developed in 2004.</p> <p>Excise relief was granted to eight biofuels projects in 2005-2006, however this is in the process of being changed from an excise relief scheme to an obligation mechanism whereby suppliers must ensure a certain portion of their road transport fuels come from biofuels. It is important therefore that there is a smooth transition from the current mechanism to the new one to ensure continued growth in biofuels to meet the 2010 target.</p> <p>There was a significant increase in the share of transport energy from biofuels in 2008, although this was from a very low base. In absolute terms, the use of biofuels increased from 1ktoe in 2005 to 70 ktoe in 2008, representing 1.5% of transport fuel. This fell short of the 2% target for 2008.</p>	

## Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 96

Country/Region	Italy
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 6.5% reduction in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements.
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 97).
<b>Commentary</b>	<p>Italy's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under Kyoto is to reach an emissions level 6.5% below 1990 levels for the period 2008-2012. In 2006, emissions were 10% higher than base year levels. Projections show that with existing policies, emissions will decrease to a level 7% above base year levels by 2010. Additional measures, including use of the Kyoto Protocol mechanisms, would result in emission reductions to a level 5% below base-year.</p> <p>According to the UN, Italy is underachieving in meeting its Kyoto obligation.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 97

Country/Region	Italy	
Policy Type	Legislation	
Policy Name/Description	EU Directive 2009/28/EC: 17% of gross final energy consumption from renewable sources by 2020	
Date Announced	January, 23 <sup>rd</sup> , 2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	45 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 96	
Supporting Policies: Mandates and Incentives	Feed-in tariffs; priority access rules; green certificates;	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:3	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
Overall Risk Assessment	3	
Supporting Commentary	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Italy's share of the target is to reach 17% renewables in gross final energy consumption by 2020. The renewable plan is part of Italy's overall CO<sub>2</sub> reduction policy. The targets set out in the plan have continually been missed.</p> <p>Italy has moved from using a CIP6 feed-in tariff system to a green certificate program and then back to a program backed by feed-in tariffs, leading to substantial uncertainty. Court rulings have also cut incentives in the past. Thus, while feed-in tariffs are available for up to 1.2 GW of solar capacity per year, regular changes in the support scheme may imperil delivery.</p> <p>The European Commission stated in 2008 that Italy is far from the targets set at the European level. Several factors contribute to this including: uncertainty due to recent political changes and ambiguities in current policy design; administrative constraints such as complex permitting procedures at the local level; and financial barriers such as high costs for grid connection. The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive. The majority of the 61 legal proceedings initiated by the European Commission between 2004 and April, 2009 were against Italy for failing to adequately implement its renewable obligation.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 98

<b>Country/Region</b>	Latvia
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 99).
<b>Commentary</b>	<p>Latvia's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1990 levels for the period 2008-2012.</p> <p>In 2006 emissions, were 55% below base year levels. Projections show that, with existing policies and measures, emissions will increase to a level 46% below base-year by 2010, meaning that Latvia will significantly overachieve the target.</p> <p>Latvia has a number of policies in place that support achievement of the target. A quota system for renewables has been in place since 2002, with authorized capacity levels determined by the Cabinet of Ministers on an annual basis. Biofuels are also subject to a reduced excise tax rate, and rapeseed oil is subject to 0% excise tax, regardless of its end use.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 99

<b>Country/Region</b>	Latvia	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 42% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 98	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national public funding; national subsidies; national tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Latvia's share of the target is to reach 42% of renewables in gross final energy consumption by 2020. The Cabinet of Ministers of the Republic of Latvia approved the Latvian Renewable Energy Strategy 2006-2013 – which supports this target – in October, 2006.</p> <p>The Latvian government promotes renewable-energy through a price regulation which includes elements of both a quota system and tendering. On July 24<sup>th</sup>, 2007, the Latvian Cabinet of Ministers adopted Regulations on Electricity Generation from Renewable Energy Sources, which ensures mandatory procurement of power generated from wind, small hydro, biomass and biogas under a feed-in tariff system. The level of the feed-in tariff is related to two factors: the end user price of natural gas and the installed capacity of the power plant. The changeable nature of the support system may create uncertainty for investors. Larger plants are authorized through a tendering process, which awards rights to guaranteed purchase.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>34.9% of total energy came from renewables in 2005, all from hydro.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 100

<b>Country/Region</b>	<b>Lithuania</b>
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2003
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	25 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 101, Target 102).
<b>Commentary</b>	<p>Lithuania's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1990 levels for the period 2008-2012. In 2006, emissions were 53% lower than base year levels. Projections show that based on existing policies, emissions will increase to a level 30% below base year emissions by 2010. Lithuania is therefore expected to significantly overachieve its target.</p> <p>Lithuania has developed a number of policies that support achievement of the target. Feed-in tariffs have been set to encourage renewable energy development and excise tax relief is in place for biofuels. The National Energy Strategy calls for the promotion and purchase of electricity from renewables. Investment subsidies and loans on favorable terms are also made available for sustainable projects by the Lithuanian Environmental Investment Fund.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 101

Country/Region	Lithuania	
Policy Type	Legislation	
Policy Name/Description	National Target: 12% renewable energy sources in the primary supply by 2010	
Date Announced	2008	
Target Date	2010	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2012	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 100	
Supporting Policies: Mandates and Incentives	National feed-in tariff; national subsidies; national public funds.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	2	
Supporting Commentary	<p>Lithuania's National Energy Strategy, adopted in January, 2007, sets the strategic direction of the country's energy policy.</p> <p>In Lithuania, the generation of renewable electricity is subject to price regulation via a feed-in tariff. Energy suppliers are obligated to purchase renewable electricity from producers at a guaranteed price. Lithuania has introduced an annual maximum amount of renewable electricity to be purchased at the guaranteed price. If one year's production of renewable-electricity exceeds the annual maximum quota, this surplus is not entitled to the guaranteed price, but can be sold on the free market or by auction. There are also subsidies in place through the Lithuanian Environmental Investment Fund (LAAIF).</p> <p>There are no penalties for non compliance with the target.</p> <p>Lithuania had 8.7% renewables in the primary energy supply in 2007.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 102

<b>Country/Region</b>	<b>Lithuania</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 23% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 100	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national subsidies; national public funds.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Lithuania's share of the target is to reach 23% of renewables in gross final energy consumption by 2020.</p> <p>Lithuania's National Energy Strategy adopted in January, 2007, sets the main strategic priorities of the State energy policy. In Lithuania, the generation of renewable electricity is subject to price regulation via a feed-in tariff. Energy suppliers are obligated to purchase renewable electricity from producers at a guaranteed price. Lithuania has introduced an annual maximum amount of renewable electricity to be purchased at the guaranteed price. If one year's production of renewable- electricity exceeds the annual maximum quota, this surplus is not entitled to the guaranteed price, but can be sold on the free market or by auction. There are also subsidies in place through the Lithuanian Environmental Investment Fund (LAAIF).</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>In 2007, Lithuania had 14.3% renewables in the gross final energy consumption.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 103

Country/Region	Luxembourg
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 28% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 104).
<b>Commentary</b>	<p>Luxembourg's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 28% below 1990 levels for the period 2008-2012. In 2006, emissions were 1% higher than base year levels, and projections show that with existing policies, emissions will increase to a level 3% above base year levels by 2010. It is possible that Luxembourg may achieve its target through emission reductions from additional measures, including use of Kyoto Protocol mechanisms.</p> <p>According to an IEA report in March, 2009, Luxembourg has significantly improved its energy policy plan over the past few years. Luxembourg has revised the requirements for energy efficiency in buildings and has ambitious plans for improving energy efficiency in all sectors. The country has also enhanced support for renewables and changed car taxation to reflect CO<sub>2</sub> emissions.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 104

<b>Country/Region</b>	<b>Luxembourg</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 11% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 103	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national grants; national tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Luxembourg's share of the target is to reach 11% renewables in gross final energy consumption by 2020.</p> <p>In 2008 the Ministry of the Economy prepared a National Action Plan on Eco-Technologies. The Action Plan set two objectives: To increase the productivity of natural resources, and to develop the eco-technology sector as a means of diversifying Luxembourg's economy. The Action Plan focuses on renewable energies and energy efficiency.</p> <p>There are feed-in tariffs in place for different types of renewable electricity, guaranteed over for 15 years. Tariffs for wind onshore are set at €82.7 per MWh. For solar PV, the tariff is €420 per MWh for smaller panels, and €370 per MWh for bigger panels. For small hydro the tariff is set at €105 per MWh, while it is €85 per MWh for bigger systems. Other support mechanisms include investment grants, income tax exemptions, and subsidies for private companies, farmers and households investing in renewable technologies.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive. The share of renewable energy in Luxembourg's primary energy supply in 2007 was 3.51%.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 105

<b>Country/Region</b>	Malta	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 10% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44 and Target 45	
<b>Supporting Policies: Mandates and Incentives</b>	National subsidies; national public funds; national feed-in tariff.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Malta's share of the target is to reach 10% of renewables in gross final energy consumption by 2020.</p> <p>The Promotion of Electricity Produced from Renewable Energy Sources Regulation is the Maltese renewable energy strategy. A framework of measures to support renewable energy in Malta is currently under consideration.</p> <p>Investments in domestic systems generating electricity from wind and solar are eligible for subsidies. The Maltese Ministry of Finance grants investment subsidies for small wind and solar power systems to domestic investors. Domestic solar electricity generation is also eligible for a feed-in tariff.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>According to a report commissioned for the European Commission the penetration of renewables in Malta in 2008 was practically 0%, with no commercial utilization of renewable energy.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 106

Country/Region	Netherlands
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 6% reduction in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 107 and Target 108).
<b>Commentary</b>	<p>The Netherlands' share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 6% below 1990 levels for the period 2008-2012. In 2006, emissions were 3% lower than base year levels. Projections are that with existing policies, emissions will increase to a level 2% above base year levels by 2010. However, the target may be achieved through emission reductions through the Kyoto Protocol mechanisms, possibly reaching a level 8% below 1990 emissions.</p> <p>The Netherlands does not appear to have a publicly-available detailed plan for achieving its emissions target. Historically, there have been some budgetary constraints around climate programs, and it is unclear if these have been resolved.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 107

Country/Region	Netherlands	
Policy Type	Legislation	
Policy Name/Description	National Target: 20% of power generation should come from renewables by 2020	
Date Announced	2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45 and Target 106	
Supporting Policies: Mandates and Incentives	National subsidy scheme; national tax incentives; proposed national feed-in tariffs.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>The government of the Netherlands laid out its renewable target in Clean and Efficient: New Energy for Climate Policy. The program contains a detailed set of measures to promote renewable energy.</p> <p>From 2009 onwards the tax system will be vigorously greened every year. A new subsidy scheme, the Stimulation Scheme Renewable Energy Production (SDE Scheme). Has been put in place. An additional €326 million has recently been made available for the program. In March, 2009, the Dutch cabinet unveiled a proposed feed-in tariff scheme. The scheme would be capped at around 1,000 MW for renewable energy sources. An evaluation is planned for 2010.</p> <p>In June, 2008, the Dutch government announced that it will invest €7.5 billion in energy supply between 2008 and 2011 with around €4 billion going towards renewables.</p> <p>There are no details provided in the plan about how the target will be enforced.</p> <p>The Netherlands sourced 7.9% of its electricity from renewable sources in 2006 according to the European Commission.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 108

<b>Country/Region</b>	<b>Netherlands</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 14% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	30 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 106	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national grants; national tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Netherlands's share of the target is to reach 14% renewables in gross final energy consumption by 2020.</p> <p>From 2009 onwards the tax system will be vigorously greened every year. A new subsidy scheme, the Stimulation Scheme Renewable Energy Production (SDE Scheme). Has been put in place. An additional €326 million has recently been made available for the program. In March, 2009, the Dutch cabinet unveiled a proposed feed-in tariff scheme. The scheme would be capped at around 1,000 MW for renewable energy sources. An evaluation is planned for 2010.</p> <p>In June, 2008, the Dutch government announced that it will invest €7.5 billion in energy supply between 2008 and 2011 with around €4 billion going towards renewables.</p> <p>The current EU Directive mandates the Commission to start infringement proceedings against Member States that fail to fulfill obligations. Dorte Fouquet, Director of the European Renewable Energies Federation argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>2.8% of the Netherlands' total energy supply in 2009 came from renewables.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 109

Country/Region	Poland
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 6% reduction in greenhouse gas emissions from 1988 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	115 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 110).
<b>Commentary</b>	<p>Poland's individual Kyoto Protocol target is to reach an emissions level 6% below 1988 levels for the period 2008-2012. In 2006, emissions were 29% lower than base-year level.</p> <p>Projections are that with existing policies, emissions will increase to a level 28% below base level by 2010. Carbon sink activities could reduce emissions to 29% below base level. Poland is expected to significantly overachieve its Kyoto target on this basis.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 110

<b>Country/Region</b>	<b>Poland</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 15% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	25 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 109	
<b>Supporting Policies: Mandates and Incentives</b>	National subsidies; national public funds; national green certificates; national tax exemption; national investment grants.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 3
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Poland's share of the target is to reach 15% of renewables in gross final energy consumption by 2020.</p> <p>Poland has developed a policy document called Poland's Energy Policy Until 2030, which sets out strategies to meet the 2020 EU target. Supporting policies for renewables include an obligation for electricity retailers to purchase renewable electricity. Compliance is assured through a green certificate system. These certificates can be traded either on bilateral basis or on the Warsaw Commodity Exchange. A penalty of 130% of the substitution fee is applied in case of failure to comply with this legislation.</p> <p>According to the Polish Environment Minister, Poland will spend \$1.55 billion over the next few years to meet its EU renewable target.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>According to the European Commission, in 2005 Poland met 7.2% of its final energy consumption with renewables.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 111

Country/Region	Portugal
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol:27% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 112).
<b>Commentary</b>	<p>Portugal's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level no higher than 27% above 1990 levels for the period 2008-2012. In 2006, emissions were 38% higher than base year levels. Projections show that with existing policies, emissions will increase to a level 44% above base year emissions by 2010. Carbon sink activities and additional use of Kyoto Protocol mechanisms may enable Portugal to constrain growth to 23% above base year emissions.</p> <p>In May, 2009, Portugal's environment minister announced that the country's greenhouse gas emissions in 2008 were 5% above the country's Kyoto target compared to 9% in 2007. But he acknowledged that despite this progress, Portugal is still likely to miss its target.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 112

Country/Region	Portugal	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 31% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 111	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national subsidies; national tax incentives; national investment incentives.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Portugal's share of the target is to reach 31% renewables in gross final energy consumption by 2020.</p> <p>In 2005 Portugal adopted a new energy policy, which aims to promote renewable energy, improve efficiency, and reduce external dependency.</p> <p>Portugal simplified the licensing required for small renewables producers in 2008. The Portuguese Government promotes renewable energy principally through a guaranteed feed-in tariff scheme for renewable electricity, direct subsidy payments, tax incentives, and investment incentives. Feed-in tariffs are used principally for larger-scale renewable applications.</p> <p>The current EU Directive mandates the Commission to start infringement proceedings against Member States that fail to fulfill obligations. Dorte Fouquet, Director of the European Renewable Energies Federation argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>The share of renewables in the gross final energy consumption was 20.5%.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 113

<b>Country/Region</b>	Romania
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions from 1989 levels for the period 2008-2012
<b>Date Announced</b>	2001
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	120 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 114).
<b>Commentary</b>	<p>Romania's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1989 levels for the period 2008-2012.</p> <p>In 2006, emissions were 44% lower than the base year levels. Projections show that with existing policies, emissions will increase to a level 31% below base-year emissions by 2010. Romania is expected to significantly overachieve its target.</p>



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 114

Country/Region	Romania	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 24% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 Mt of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 113	
<b>Supporting Policies: Mandates and Incentives</b>	National green certificates; national mandatory dispatching.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 2
	Public Financing: 3	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Romania's share of the target is to reach 24% renewables in gross final energy consumption by 2020.</p> <p>A National Action Plan on how to achieve the EU target will be submitted to the EU by June, 2010. There are a number of administrative and planning issues in Romania that may delay renewable development, including grid access.</p> <p>The main supporting policies in place for renewables in Renewables include a quota system with tradable green certificates for renewable energy and mandatory dispatching. Legislation to enable increased use of biofuels was passed in December, 2005.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>According to the European Commission, 17.8% of final energy consumption came from renewables in Romania in 2005.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 115

<b>Country/Region</b>	Slovakia
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions from 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 116).
<b>Commentary</b>	Slovakia's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1990 levels for the period 2008-2012. In 2006, emissions were 32% lower than base year levels. Projections show that with existing policies, emissions will increase to a level 18% below base year emissions by 2010, meaning that Slovakia will significantly overachieve its target.

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 116

<b>Country/Region</b>	<b>Slovakia</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 14% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 115	
<b>Supporting Policies: Mandates and Incentives</b>	Proposed national feed-in tariff; national subsidies; national tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Slovakia's share of the target is to reach 14% of renewables in gross final energy consumption by 2020.</p> <p>On April 25<sup>th</sup>, 2007, a Strategy of Higher Utilization of Renewable Energy Sources was approved by the government. According to the European Renewable Energy Council, the government does not recognize the need of renewable sector development, nor does it support the sector.</p> <p>In the Republic of Slovakia, the generation of electricity from renewable energy sources is promoted through, among other things, an obligation to purchase electricity at special prices and use it to compensate for power losses in the distribution grid. Grid operators do not have the general obligation to purchase renewable electricity. A system of fixed feed-in tariffs has been in place since 2005 although implementation is not yet complete.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive.</p> <p>In 2005 6.7% of final energy consumption came from renewables. However, the current use of renewables without hydropower is negligible.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 117

<b>Country/Region</b>	<b>Slovenia</b>
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions from 1986 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 118).
<b>Commentary</b>	<p>Slovenia's individual Kyoto Protocol emissions target is to reach an emissions level 8% below 1986 levels for the period 2008-2012. In 2006, emissions were 1% higher than base-year levels. Projections show that with existing policies, emissions will reach a level 7% above base-year emissions.</p> <p>Slovenia hopes to achieve its target through emission reductions from additional measures, including use of Kyoto Protocol mechanisms and carbon sink activities.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 118

<b>Country/Region</b>	<b>Slovenia</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 25% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 117	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariff; national subsidies; national loans; national Eco-Fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Slovenia's share of the target is to reach 25% renewables in gross final energy consumption by 2020.</p> <p>According to the Slovenian National Energy Program (2004), Slovenia plans to increase the share of renewable energy in the primary energy balance from 9% to 12% by 2010, but there appears to be no formal integrated plan for meeting the EU's 2020 renewable energy target in Slovenia. Eligible producers of renewable electricity may choose to receive either fixed feed-in tariffs or premium feed-in tariffs from the network operators. Attractive feed-in tariffs have been offered since 2004 with long-term guaranteed contracts. In July, 2009, Slovenia announced that it will implement a new, sophisticated system of feed-in tariffs. The program, currently under review by the EU, would increase the length of contracts to 15 years and increase the project cap to 125 MW. The Agency for Energy Efficiency and Renewable Energy (AURE) awards subsidies for renewables, and the Slovenian Environmental Fund (Eko sklad) awards loans.</p> <p>The current EU Directive requires the Commission to start infringement proceedings against Member States that fail to fulfil their obligations. Dorte Fouquet, Director of the European Renewable Energies Federation, argues that the lack of binding interim targets or penalty mechanisms are the weakest point of the EU's renewable directive. According to the European Commission, 16% of final energy consumption came from renewables in 2005.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 119

<b>Country/Region</b>	Spain
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 15% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	65 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 120, Target 121 and Target 122).
<b>Commentary</b>	<p>Spain's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach a maximum emissions level 15% above 1990 levels for the period 2008-2012. In 2006, emissions were 50% higher than base year levels.</p> <p>Projections show that with existing policies, emissions will reach a level of 52% above base-year emissions by 2010. Additional emissions reduction activities, including use of Kyoto Protocol mechanisms, could reduce emissions to a level 20% above base year emissions, but Spain would still miss its Kyoto target.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 120

<b>Country/Region</b>	<b>Spain</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Renewable Directive 2001/77/EC: 30% of gross electricity generation should come from renewables by 2010.	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	25 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 119	
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 122); national tax relief; national low-interest loans; national subsidies; national feed-in tariffs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, Spain aims to increase its share of electricity to 30% by 2010.</p> <p>In 2005, Spain's Government published the Renewable Energy Plan 2005-2010, which sets a goal of sourcing 30% of the country's electricity from renewables. The plan also set a separate wind target.</p> <p>In 2006, 17.9% of the country's gross electricity consumption came from renewable sources, according to EUROSTAT. However, the Government has come under criticism recently for the cost of supporting renewables and the political support it has provided to them.</p> <p>In Spain, the generation of electricity from renewable sources is promoted through price support. System operators may choose between a feed-in tariff and a bonus, which is paid on top of market electricity prices. Low-interest loans are also available for renewable projects, through which up to 80% of reference costs can be financed.</p> <p>Spain revised its feed-in tariff laws in 2008, reducing its tariff for solar. Government officials agreed on a 500 MW cap for solar for 2009, and tariff levels were reduced to between €0.32 and €0.34 per kilowatt-hour of electricity from roof-mounted systems and €0.32 per kWh of electricity from ground-based systems. Although the instability in the regulatory regime in 2008 caused a slight downturn in the solar market, demand has remained high since the decision to cap solar at 500 MW was finalized according to the Ministry of Industry, Tourism and Trade.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 121

<b>Country/Region</b>	<b>Spain</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 20% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	50 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 119	
<b>Supporting Policies: Mandates and Incentives</b>	National tax relief; national low-interest loans; national subsidies; national feed-in tariffs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Spain's share of the target is to reach 20% renewables in gross final energy consumption by 2020.</p> <p>In 2005, Spain's Government published the Renewable Energy Plan 2005-2010, which sets a goal of sourcing 30% of the country's electricity from renewables. The plan also set a separate wind target. In 2006, 9% of Spain's total energy consumption came from renewables, according to the European Commission. The Government has come under criticism recently for the cost of supporting renewables and the political support it has provided to them.</p> <p>In Spain, the generation of electricity from renewable sources is promoted through price support. System operators may choose between a feed-in tariff and a bonus, which is paid on top of market electricity prices. Low-interest loans are also available for renewable projects, through which up to 80% of reference costs can be financed.</p> <p>Spain revised its feed-in tariff laws in 2008, reducing its tariff for solar. Government officials agreed on a 500 MW cap for solar for 2009, and tariff levels were reduced to between €0.32 and €0.34 per kilowatt-hour of electricity from roof-mounted systems and €0.32 per kWh of electricity from ground-based systems. Although the instability in the regulatory regime in 2008 caused a slight downturn in the solar market, demand has remained high since the decision to cap solar at 500 MW was finalized.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 122

Country/Region	Spain	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Renewable Energy Plan 2005-2010: 20 GW of installed wind capacity by 2010	
<b>Date Announced</b>	2005	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45 and Target 119	
<b>Supporting Policies: Mandates and Incentives</b>	National tax relief; national low-interest loans; national subsidies; national feed-in tariffs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>As part of the 2005-2010 Renewable Energy Plan, Spain set a target to have 20 GW of installed wind capacity by 2010.</p> <p>The plan, along with supporting policies and incentives, led to a huge growth in renewable energy in Spain, especially in wind. The country is now third in the world in wind power capacity, with an installed capacity at the end of 2008 of 16.7 GW.</p> <p>The subsidy for wind power consists of the market price of electricity plus 90% of the market price for a period of fifteen years, at which point it drops to 80%. Annually the government-underwritten wind-power contracts are costing around €28.6 billion.</p> <p>The Government has come under criticism recently for the cost of supporting renewables and the political support provided to them.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 123

<b>Country/Region</b>	Sweden
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 4% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements.
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade and Carbon Tax
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 126).
<b>Commentary</b>	<p>Sweden's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level no higher than 4% above 1990 levels for the period 2008-2012. In 2006, emissions were 9% lower than base year levels. Projections show that with existing policies, emissions will increase to a level 3% below base-year emissions by 2010. Sweden therefore is expected to overachieve its Kyoto target with existing policies and measures.</p> <p>Sweden has a clear plan and is well ahead of schedule for this target. The government has made available SEK 5 billion (\$644 million) for fighting climate change and has two government agencies that are monitoring emissions targets. There is also a Swedish carbon dioxide tax in place set at SEK 1.01 (\$0.13) per kilogram of CO<sub>2</sub>.</p> <p>On June, 16<sup>th</sup>, 2009, the Swedish Government approved a long-term energy plan that sets out actions through 2020 to create a low carbon society. Sweden also has a more stringent national emissions target in place.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 124

<b>Country/Region</b>	Sweden
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Swedish Climate Strategy Bill (2001/02:55): 4% reduction in greenhouse gas emissions for the period 2008-2012
<b>Date Announced</b>	2001
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020
<b>Policy Category</b>	Emissions target: Cap-and-Trade and Carbon Tax
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 126).
<b>Commentary</b>	<p>Sweden set a national target in 2001 to reduce emissions over the 2008-2012 period by 4% below 1990 levels, a considerably more ambitious target than the 4% increase that it is allowed under Kyoto burden-sharing. This reduction is expected to be achieved without recourse to either Kyoto Protocol mechanisms or carbon sinks.</p> <p>Sweden has a clear plan and is well ahead of schedule for this target. The government has made available SEK 5 billion (\$644 million) for fighting climate change and has two government agencies that are monitoring emissions targets. There is also a Swedish carbon dioxide tax in place set at SEK 1.01 (\$0.13) per kilogram of CO<sub>2</sub>.</p> <p>On June, 16<sup>th</sup>, 2009, the Swedish Government approved a long-term energy plan that sets out actions through 2020 to create a low carbon society.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 125

<b>Country/Region</b>	Sweden
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Integrated climate and energy policy: 40% reduction in greenhouse gas emissions below 1990 levels by 2020 for sectors outside the EU Emissions Trading Scheme; become carbon neutral by 2050
<b>Date Announced</b>	March, 2009
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-Trade and Carbon Tax
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standard (Target 126).
<b>Commentary</b>	<p>On June, 16<sup>th</sup>, 2009, the Swedish Government passed its long-term energy bill. The bill sets a 40% emissions reduction target for sectors outside the EU Emissions Trading Scheme by 2020. The Government is presenting three action plans for a conversion to a low-carbon society: an action plan for renewable energy; an action plan for energy efficiency; and an action plan for a fossil-free transport sector.</p> <p>The Swedish Society for Nature Conservation has developed a report that details how Sweden can reduce its greenhouse gas emissions by 40% by 2020 without using Kyoto Protocol mechanisms.</p> <p>To date, emissions have fallen as a result of the SEK 1.01 (\$0.13) per kilogram CO<sub>2</sub> tax.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 126

<b>Country/Region</b>	<b>Sweden</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 49% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 123, Target 124 and Target 125	
<b>Supporting Policies: Mandates and Incentives</b>	National green certificates; national investment subsidies; national tax exemptions	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. Sweden's share of the target is to reach 49% renewables in gross final energy consumption by 2020.</p> <p>The Swedish energy policy was developed with the aim to create a sustainable energy system where Sweden would eventually obtain all energy from renewable energy sources. The Minister for Sustainable Development has declared that the country will be the first to break the dependence on fossil energy and a plan is in place to make this happen with key mechanisms in place, one of which is to make large-scale state-sponsored investments in renewable energy.</p> <p>Sweden adopted a tradable green certificate scheme in 2003 in order to promote renewable electricity. The Renewable Energy with Green Certificates bill was revised in January 1, 2007, and shifts the quota obligation from electricity users to electricity suppliers. The system has been extended to 2030. A penalty for non-compliance is defined annually by the Swedish Energy Agency. Measures to facilitate the development of wind power include the provision of SEK 30 million (\$3.9 million) as special financial support for planning in municipalities and regions.</p> <p>Sweden is already well on track to reach this goal. 28% of energy currently comes from renewable sources.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 127

<b>Country/Region</b>	<b>United Kingdom</b>
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 12.5% reduction in greenhouse gas emissions from 1990 levels for the period 2008-2012 under EU burden sharing agreements
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	40 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 129, Target 130 and Target 131); national smart meter standard (Target 132); national lighting efficiency standard (Target 133); regional Renewable Portfolio Standards (Target 135 and Target 136).
<b>Commentary</b>	<p>The UK's share of the overall EU-15's target of an 8% reduction in greenhouse gas emissions under the Kyoto Protocol is to reach an emissions level 12.5% below 1990 levels for the period 2008-2012. In 2006, emissions were 18% below 1990 levels. Projections show that with existing domestic policies, emissions will increase to 16% below base year levels by 2010. On that basis, the UK is expected to overachieve its Kyoto target.</p> <p>According to a UK Department of Energy and Climate Change report to the United Nations, the UK is on track to double its greenhouse gas reduction obligations under Kyoto. The report released in June, 2009, highlights supporting policies that are in place, including the Climate Change Act, a comprehensive home energy efficiency program, and ambitious plans for renewable energy. The UK is also developing a feed-in tariff for small scale renewable projects.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 128

<b>Country/Region</b>	<b>United Kingdom</b>
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	UK Climate Change Act (2008): 34% reduction in greenhouse gas emissions below 1990 levels by 2020; 42% reduction if an international deal is agreed in Copenhagen
<b>Date Announced</b>	December, 2008
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	125 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); EU vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 129, Target 130 and Target 131); national smart meter standard (Target 132); national lighting efficiency standard (Target 133); regional Renewable Portfolio Standards (Target 135 and Target 136).
<b>Commentary</b>	<p>The UK's long-term national targets became legally binding on April, 22<sup>nd</sup>, 2009. A wide range of measures were announced as part of the April, 2009 budget to support energy and resource efficiency in businesses, public buildings and houses, including funding for insulation projects, funding for energy efficiency loans, and grants for waste infrastructure, all of which could help cut emissions.</p> <p>In July, 2009, the UK Government released its Low Carbon Transition Plan, detailing how it hopes to meet the 34% reduction in emissions by 2020. Supporting publications were also released alongside the Transition Plan including a UK Renewable Energy Strategy, Low Carbon Transport Plan, and Low Carbon Industrial Strategy.</p> <p>Despite the plans, a report from an influential parliamentary committee in August, 2009, stated that the UK may miss the 34% target and cited failures by the UK Government regarding the issue of energy use in buildings as a key factor.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 129

<b>Country/Region</b>	<b>United Kingdom</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Renewable Directive 2001/77/EC: 10% of gross electricity generation from renewables by 2010	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 127 and Target 128	
<b>Supporting Policies: Mandates and Incentives</b>	Renewables Obligation; national tax exemptions; national Climate Change Levy; national subsidies for low-carbon technologies; national capital grants; national Environmental Transformation Fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>In compliance with the 2001 EU Directive on the Promotion of Electricity Produced from Renewable Energy Sources, the UK aims to increase its share of electricity to 10% by 2010. The UK's 2007 Energy White Paper contained a number of proposals designed to speed up the planning system for major infrastructure projects to meet the 2010 renewable target. However, the plan has been criticized for failing to offer substantial new solutions to meet the 2010 target.</p> <p>The Department of Energy and Climate Change oversees the development of the UK's renewable industry and the Office for Renewable Energy Deployment (ORED) has a clear remit to address renewable deployment issues. Despite the dedicated team, the British Wind Energy Association has repeatedly said that the implementation of the target is lagging.</p> <p>The main support mechanism for renewables is the Renewables Obligation (RO), which requires electricity suppliers to source an increasing proportion of their electricity from renewable sources. Compliance with the RO is achieved by procuring Renewable Obligation Certificates (ROCs). A 'banding' structure was introduced to the RO in April, 2009, to ensure support for a more diverse array of technologies, including those which are currently further from commercial deployment.</p> <p>Where suppliers do not have sufficient ROCs to meet their obligations, they are required to make a payment into a fund. A House of Commons 2008 report showed that suppliers failed to meet the RO every year from 2002 to 2007. The UK sourced 5.5% of gross electricity from renewables in 2008.</p>	



# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 130

<b>Country/Region</b>	<b>United Kingdom</b>	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	20% of gross electricity from renewable sources by 2020	
<b>Date Announced</b>	May, 2007	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	0 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 127 and Target 128	
<b>Supporting Policies: Mandates and Incentives</b>	Renewables Obligation; national tax exemptions; national Climate Change Levy; national subsidies for low-carbon technologies; national capital grants; national Environmental Transformation Fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In May, 2007, the UK Government released its Energy White Paper with an aspiration for 20% renewable electricity by 2020. The Renewables Obligation (RO) is the main mechanism to support the aspiration.</p> <p>The Department of Energy and Climate Change oversees the development of the UK's renewable industry and the Office for Renewable Energy Deployment (ORED) has a clear remit to address renewable deployment issues. The Government intends to put in place financial support for renewable electricity and heat worth around £30 billion between 2009 and 2020. Additionally, £11.2 million in funding will be released to speed up the current planning processes. And in the April, 2009, budget the Government announced £525 million in support for offshore wind.</p> <p>The RO requires electricity suppliers to source an increasing proportion of their electricity from renewable sources. Compliance with the RO is achieved by procuring Renewable Obligation Certificates (ROCs). A 'banding' structure was introduced to the RO in April, 2009, to ensure support for a more diverse array of technologies, including those which are currently further from commercial deployment. A consultation on Renewable Electricity Financial Incentives is running from 15 July, 2009 to 15 October, 2009 seeking views on two mechanisms to provide financial incentives for the generation of low-carbon and renewable electricity, the RO and feed-in tariffs. Feed-in tariffs may be used to provide guaranteed payments to individuals, business and communities for renewable power generation from 2010.</p> <p>Electricity generated from renewable sources in the UK in 2008 represented 5.5% of gross electricity consumption, compared to 4.9% in 2007.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 131

<b>Country/Region</b>	<b>United Kingdom</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	EU Directive 2009/28/EC: 15% of gross final energy consumption from renewable sources by 2020	
<b>Date Announced</b>	January, 23 <sup>rd</sup> , 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	105 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 127 and, Target 128	
<b>Supporting Policies: Mandates and Incentives</b>	Renewables Obligation; tax exemptions; Climate Change Levy; national feed-in tariff; subsidies; capital grants; Environmental Transformation Fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On January 23<sup>rd</sup>, 2008, the European Commission put forward a proposal for a new Directive on the Promotion and Use of Energy from Renewable Sources. EU governments reached agreement in December, 2008 that each Member State should increase its use of renewable energies in a bid to boost overall EU renewable energy. The UK's share of the target is to reach 15% renewables in gross final energy consumption by 2020.</p> <p>The UK announced its Low Carbon Transition plan in July, 2009, setting out how the country will meet a cut in emissions and meet renewable targets via the Renewable Energy Strategy.</p> <p>The Department of Energy and Climate Change oversees the development of the UK's renewable industry and the Office for Renewable Energy Deployment (ORED) has a clear remit to address renewable deployment issues. The Infrastructure Planning Commission was set up in December, 2008, to fast track large renewable projects and eliminate planning delays that have caused set-backs to UK renewable development. The Commission will be ready to handle proposals from 2010.</p> <p>A consultation on Renewable Electricity Financial Incentives is running from 15 July, 2009 to 15 October, 2009 seeking views on two mechanisms to provide financial incentives for the generation of low-carbon and renewable electricity, the Renewables Obligation and feed-In tariffs. Feed-in tariffs may be used to provide guaranteed payments to individuals, business and communities for renewable power generation from 2010.</p> <p>2% of energy needs came from renewables in 2009.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 132

<b>Country/Region</b>	<b>United Kingdom</b>	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	All homes to be fitted with smart meters by 2020	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 43, Target 44, Target 45, Target 127 and Target 128	
<b>Supporting Policies: Mandates and Incentives</b>	N/A	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives:3	Sovereign Credit Risk: 1
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>The UK government announced a plan in May, 2009, that would ensure that every household in the country is fitted with a smart meter by 2020. The plans form part of the government's climate strategy.</p> <p>The Department of Energy and Climate Change launched a consultation in May, 2009, on how the smart meters should be rolled out. Three plans are under consideration for the nationwide roll-out of the meters. The first sees utilities take on all responsibilities, including supply and installation. The second has energy suppliers responsible for the meters, but with a new third party body handling energy data. A third scenario envisages setting up a new organization to oversee both the meters and data management.</p> <p>It is likely that the Government will award a contract to create a centralized communications system for gathering data for smart meters. Energy suppliers would then be able to choose their own meter technology and roll out smart meters to their customers at their own pace. It is looking likely that the Government will award a contract to create a centralized communications system for gathering data for smart meters.</p> <p>It appears that the cost of the project will be split between energy providers and consumers. Latest government figures indicate that implementation may cost £9 billion. The government is still in consultation as of September, 2009, on how to pay for the scheme.</p> <p>Smart meter trials are currently underway around the UK through energy companies such as British Gas. Smaller suppliers such as First Utility already supply smart meters as part of their standard package. The first smart meters installed under the government's new plans are expected to arrive in 2012.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 133

Country/Region	United Kingdom	
Policy Type	Voluntary	
Policy Name/Description	Phase out incandescent light bulbs by 2012	
Date Announced	2007	
Target Date	2012	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2012	
Policy Category	Sector/Industry Specific Regulation	
Related Emissions Target(s)	Target 43, Target 44, Target 45, Target 127 and Target 128	
Supporting Policies: Mandates and Incentives	National public funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	2	
Supporting Commentary	<p>The UK government announced a voluntary agreement with major UK retailers in 2007 to phase out incandescent light bulbs by 2012. This was put in place along with signing up to a EU Directive designed to phase out incandescent bulbs over 4 years, which came into force on September 1, 2009.</p> <p>Under the agreement, retailers agreed to stop replenishing stocks of 100 watt and 75 watt bulbs at the start of 2009, with 60 watt bulbs being phased out by 2010 and all incandescent bulbs (except for specialist bulbs) by 2012.</p> <p>A European Commission ban on the manufacture and import of 100 watt light bulbs came into force on September 1, 2009. The Government has announced that it wants to encourage the use of fluorescent light bulbs by offering tax breaks on the more expensive bulbs. EU rules, however, prevent the UK from implementing such a scheme. In March, 2008 the European Council invited the European Commission to examine areas where economic instruments, including VAT rates, could have a role to play in increasing the use of energy-saving goods. In March, 2009, it was announced that reduced VAT was unlikely to feature as part of the European Commission's proposals.</p> <p>The UK Government provided the Energy Saving Trust with over £100 million to deliver a broader program for green homes in 2008. The Carbon Emissions Reduction Target scheme doubles previous obligations on energy companies to help people make their homes more energy efficient, and total investment is around £8 billion a year for 3 years.</p> <p>Under this voluntary initiative, retailers in the UK have already phased out the 150 watt bulb and started to phase out the 100 watt bulb a year ahead of the EU schedule.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 134

<b>Country/Region</b>	<b>United Kingdom: Scotland</b>
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Climate Change (Scotland) Act 2009: 80% reduction in greenhouse gas emissions below 1990 levels by 2050, including aviation and shipping
<b>Date Announced</b>	December, 2008
<b>Target Date</b>	2050
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled
<b>Policy Category</b>	Emissions target: Cap-and-Trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Renewable Portfolio Standards (Target 50, Target 51 and Target 52); EU energy efficiency standard (Target 53); vehicle efficiency standard (Target 46), EU power sector standard (Target 47), EU aviation sector target standard (Target 48), EU fuel chain emissions standard (Target 49) and EU lighting standard (Target 54); EU Emissions Trading Scheme; national Renewable Portfolio Standards (Target 129, Target 130 and Target 131); national smart meter standard (Target 132); national lighting efficiency standard (Target 133); regional Renewable Portfolio Standard (Target 135).
<b>Commentary</b>	<p>In December, 2008 the Scottish government published the Climate Change Act including a target to reduce greenhouse gas emissions by 80% below 1990 levels by 2050. This Act was passed in June, 2009.</p> <p>The Act contains some radical measures which will deliver the required emissions cuts. For example, on energy efficiency of buildings, the Scottish Act sets a European precedent in giving Ministers powers to require building owners to carry out the recommendations contained in a building's energy performance certificate.</p> <p>Scotland's Climate Challenge Fund, launched in June, 2008, is providing £27.4 million over three years to support communities across Scotland taking action to cut their carbon emissions.</p> <p>According to the Scottish Government, greenhouse gas emissions fell by 6.8% between 2006 and 2007 and by 18.7% between the 1990 and 2007.</p>

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 135

Country/Region	United Kingdom: Scotland	
Policy Type	Legislation	
Policy Name/Description	Climate Change Bill: 31% of gross electricity consumption from renewables by 2011 and 50% by 2020	
Date Announced	2007	
Target Date	2011 and 2020	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45, Target 127, Target 128 and Target 134	
Supporting Policies: Mandates and Incentives	Regional public funding; regional Renewable Portfolio Standard; regional feed-in tariff.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>The Scottish government's June, 2009 Renewable Action Plan sets out a roadmap to meet the Scottish government's renewable energy targets. The targets rely on substantial investment in marine and tidal energy and infrastructure. There are clear short-term actions laid out for infrastructure, the supply chain, R&amp;D, planning, and skills.</p> <p>The main supporting mechanism for renewable energy in Scotland is the Renewables Obligation (Scotland), (ROS), which places a legal obligation on every electricity supplier in Scotland to supply electricity generated from renewable sources. With banding now in place, in order to give incentives for technological development in the renewable industry, Scotland is working with England on further changes required to align the program with demands of the EU 20% renewable target as well as on the emerging details of a feed-in tariff mechanism for micro-generation.</p> <p>Scotland's government tripled funding for micro-generation in 2008, and is providing over £1 million of funding to a European Green Energy Centre over the next 3 years. In August, 2009, the Scottish Government announced that it would significantly increase financial support for wave and tidal energy.</p> <p>The Scottish government is preparing a measurement framework for tracking progress against targets and measuring carbon abatement from renewable energy development. The deadline for the framework in year end 2009.</p> <p>20.1% of power generation came from renewables in 2007.</p>	

# Europe EU Member States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 136

Country/Region	United Kingdom: Wales	
Policy Type	Government aspiration	
Policy Name/Description	Source 100% of electricity from renewables by 2025	
Date Announced	2008	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	Not modeled	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 43, Target 44, Target 45, Target 127 and Target 128	
Supporting Policies: Mandates and Incentives	Regional public funding; national Renewable Portfolio Standard; national feed-in tariff.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>Wales launched its sustainable development scheme, One Wales: One Planet, on May, 22<sup>nd</sup>, 2009. The plan sets a goal to reach 100% renewable electricity by 2025.</p> <p>The main supporting mechanism is the UK Renewables Obligation (RO), which requires electricity suppliers in Wales to source an increasing proportion of their electricity from renewable sources and gain Renewable Obligation Certificates (ROCs), or pay a buy-out price for the ROCs. A banding structure was introduced to the RO in April, 2009, to ensure support for a more diverse array of technologies, including those that are currently further from commercial deployment. Feed-in tariffs are currently being considered as part of a consultation.</p> <p>Wales has spent £6.5bn on renewable energy projects. The region is also developing community renewables schemes with European funding to increase support for small-scale renewable energy in the home.</p> <p>The Welsh Assembly oversees implementation of the renewable target under the Sustainable Development Scheme. The Assembly will work closely with the Sustainable Development Commission and the Sustainable Development Forum of Wales.</p> <p>Wales was granted permission for a 750 MW wind farm, which, when finished in 2014, will be the second largest in the world. This will also help the UK meet its 15% renewable target by 2020. Despite this, Friends of the Earth have said that the aim to source 100% electricity from renewables by 2025 is ambitious.</p>	

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Non-European Union Member States

### Target 137

<b>Country/Region</b>	<b>Belarus</b>
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2005
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	32 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	N/A
<b>Commentary</b>	<p>Belarus ratified the Kyoto Protocol in August, 2005, following a decree signed by the country's President. Under the agreement, Belarus pledged to reduce greenhouse gas emissions by 8% below 1990 levels for the period 2008-2012.</p> <p>Belarus was not a party to the UNFCCC when the Kyoto Protocol was adopted and, hence, its greenhouse gas reduction target was not assigned at the same time as the Annex B countries targets were. Belarus submitted a request to amend Annex B to the Kyoto Protocol to the UNFCCC in March, 2006, and the amendment, with an emission reduction target for Belarus, was adopted in November, 2006.</p> <p>As a result of substantial deindustrialization after the fall of the Soviet Union, Belarus's emissions dropped considerably. According to the Ministry of Foreign Affairs, the country emitted 60-65 million tons of greenhouse gas emissions at the time it ratified Kyoto, and therefore, it has about 50-55 million tons of "hot air", or extra AAUs, per year.</p>



# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 138

<b>Country/Region</b>	<b>Croatia</b>
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 5% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2007
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National combined heat and power regulations; national Environmental Protection and Energy Efficiency Fund; national tax incentives for renewable equipment; national feed-in tariffs.
<b>Commentary</b>	<p>Croatia has an individual Kyoto target to reach a level of emissions 5% below 1990 levels for the period 2008-2012. In 2006, emissions were 14% lower than base year levels. Projections developed before the economic downturn show that with existing policies and measures, emissions will rise to 11% below base year levels by 2010. With additional measures, including use of the Kyoto Protocol mechanisms, Croatia could reduce emissions to 13% below base year levels.</p> <p>Croatia has developed a detailed set of policies to underpin its emissions target. The country's Energy Sector Development Strategy was adopted by the Croatian Parliament in March, 2002, and it sets out strategy for a period of 10 years. It calls for improvements in energy efficiency, diversification of energy-generating products and sources, utilization of renewable sources of energy, and safe energy provision and supply.</p> <p>The development of renewable energy supply is supported by the Environmental Protection and Energy Efficiency Fund. The fund provides interest free loans, subsidies, and grants. Personal tax deductions are allowed for investments in solar equipment. And in August, 2007, Croatia instituted a feed-in tariff system, which requires the Croatian Electricity Operator to pay a fixed premium price for electricity produced from renewable sources or cogeneration units fueled by natural gas.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 139

Country/Region	Iceland
Policy Type	International treaty
Policy Name/Description	Kyoto Protocol: 10% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012
Date Announced	2002
Target Date	2008-2012
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2012
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	EU Emissions Trading Scheme (EU-ETS), national tax incentives.
Commentary	<p>Iceland has an individual Kyoto Protocol emissions target to reach a maximum level of emissions 10% above 1990 levels for the period 2008-2012.</p> <p>In 2006, emissions were 26% higher than 1990 levels. Projections developed before the financial downturn hit Iceland show that with existing policies emissions will decrease to a level 4% above base year level during 2008-2012. Since these were developed, Iceland's economy has been seriously hit by the financial downturn. Paul Thomsen, IMF Mission Chief for Iceland and Deputy Director in the European Department has noted that "the economy is facing a relatively deep recession of 10 percent of GDP." As one of the hardest hit countries in the downturn, Iceland's emissions are likely to drop as output is curtailed and investments are postponed.</p> <p>Iceland has a Climate Policy in place, formulated by the Ministry for the Environment. Iceland joined the European Union Emissions Trading Scheme (EU-ETS) in November, 2008, although as of May, 2009, no installations in Iceland are covered by the scheme. Iceland is a founding member of the International Partnership for Hydrogen Economy and participates in the EU Hydrogen and Fuel Cells Technology Platform. Tariffs on non-polluting and low-polluting vehicles have been lowered, and the tax system has been altered, to make small diesel-powered cars more competitive.</p> <p>Over 70% of Iceland's energy comes from renewable resources (hydro and geothermal). Fossil fuels are still used in transport on land, sea and in the air. Emissions from fishing fleet constitute a fourth of total emissions in Iceland. Encouraging energy efficiency in the fishing industry is a key component of the country's climate change policy.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 140

Country/Region	Iceland
Policy Type	Legislation
Policy Name/Description	50-70% reduction in greenhouse gas emissions below 1990 levels by 2050
Date Announced	2007
Target Date	2050
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	EU Emissions Trading Scheme (EU-ETS), national tax incentives.
Commentary	<p>Iceland has a Climate Policy in place, formulated by the Ministry for the Environment. Iceland joined the European Union Emissions Trading Scheme (EU-ETS) in November, 2008, although as of May, 2009, no installations in Iceland are covered by the scheme. Iceland is a founding member of the International Partnership for Hydrogen Economy and participates in the EU Hydrogen and Fuel Cells Technology Platform. Tariffs on non-polluting and low-polluting vehicles have been lowered, and the tax system has been altered, to make small diesel-powered cars more competitive.</p> <p>Over 70% of Iceland's energy comes from renewable resources (hydro and geothermal). Fossil fuels are still used in transport on land, sea and in the air. Emissions from fishing fleet constitute a fourth of total emissions in Iceland. Encouraging energy efficiency in the fishing industry is a key component of the country's climate change policy.</p>

## Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 141

<b>Country/Region</b>	Liechtenstein
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	2004
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	EU Emissions Trading Scheme, national tax incentives, national Climate Protection Act.
<b>Commentary</b>	<p>Liechtenstein's individual Kyoto Protocol emissions target is to reach a level of emissions 8% below 1990 levels for the period 2008-2012. In 2006, emissions were 19% higher than base year levels. Projections developed before the economic downturn show that with existing policies, emissions will reach a level 4% above base year levels by 2010. Liechtenstein hopes that with the use of Kyoto mechanisms, a level 14% below base-year levels can be achieved.</p> <p>Liechtenstein joined the EU Emissions Trading Scheme in 2008, and currently has two installations covered under the scheme. To implement its obligations under Kyoto, the country has created a Climate Protection Act and embedded its climate policy in its individual sectoral policies. The goal of the new law is to reduce greenhouse gas emissions through the application of market instruments.</p>

## Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 142

Country/Region	Monaco
Policy Type	International Treaty
Policy Name/Description	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
Date Announced	2006
Target Date	2008-2012
CO <sub>2</sub> Abatement Potential	Not modeled
Policy Category	Emissions target: No carbon price
Supporting Policies: Mandates and Incentives	N/A
Commentary	<p>Monaco ratified the Kyoto Protocol in February, 2006, committing to an 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012.</p> <p>For the commitment period 2008-2012 of the Protocol, Monaco plans to obtain carbon credits from green investments in developing countries.</p> <p>Since 2000, greenhouse gas emissions registered at the national level have fallen continuously. In 2006, the last year for which data is available, emissions were 13% below 1990 levels, putting Monaco on track to meet its Kyoto commitment.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 143

<b>Country/Region</b>	Norway
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 1% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: Cap-and-trade and Carbon tax
<b>Supporting Policies: Mandates and Incentives</b>	EU Emissions Trading Scheme; national carbon tax; national Fund for Renewable Energy and Energy Efficiency; national tax incentives.
<b>Commentary</b>	<p>Norway's individual Kyoto Protocol target is to reach a maximum level of emissions 1% above 1990 levels for the period 2008-2012. In 2006, emissions were 8% higher than base year level. Projections developed before the economic downturn show that with existing policies, emissions will remain at a level 8% higher than base year by 2010. Norway hopes to use Kyoto Protocol mechanisms and carbon sinks to achieve its 1% above base-year emissions target.</p> <p>Norway's Ministry of the Environment is responsible for climate policy, and has developed a comprehensive building strategy and action plan on renewable energy.</p> <p>Norway joined the European Union Emissions Trading Scheme (EU-ETS) in 2008. Presently, about 70% of Norwegian emissions are either covered by the emissions trading scheme or subject to a carbon tax, introduced in the 1990s.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 144

<b>Country/Region</b>	Norway
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	30% reduction in greenhouse gas emissions below 1990 levels by 2020
<b>Date Announced</b>	January, 2008
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade and Carbon tax
<b>Supporting Policies: Mandates and Incentives</b>	EU Emissions Trading Scheme; national carbon tax; national Fund for Renewable Energy and Energy Efficiency; national tax incentives.
<b>Commentary</b>	<p>Norway's 2007 White Paper on Climate Change proposed that the country should adopt the world's most ambitious climate targets, including a reduction of greenhouse gas emissions by the equivalent of 30 percent of its own 1990 emissions by 2020. While the 2020 target has since been surpassed by the United Kingdom's commitment, Norway's pledge was the most ambitious emissions reduction program in force when it was adopted.</p> <p>Norway's Ministry of the Environment is responsible for climate policy. Research and technological development are major priority areas in the government's climate policy. The White Paper sets out a number of proposed measures for reducing greenhouse gas emissions in Norway. These include prohibiting landfilling of biodegradable waste, prohibiting the installation of oil-fired boilers in new buildings, and increasing the capital of the fund for the promotion of energy efficiency measures and renewable energy by up to NOK 10 billion (\$154 million) by 2012.</p> <p>Norway joined the European Union Emissions Trading Scheme (EU-ETS) in 2008. Presently, about 70% of Norwegian emissions are either covered by the emissions trading scheme or subject to a carbon tax, introduced in the 1990s.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 145

<b>Country/Region</b>	Norway
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	CO <sub>2</sub> neutral by 2030 (in the context of a global agreement)
<b>Date Announced</b>	January, 2008
<b>Target Date</b>	2030
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled
<b>Policy Category</b>	Emissions target: Cap-and-trade and Carbon tax
<b>Supporting Policies: Mandates and Incentives</b>	EU Emissions Trading Scheme; national carbon tax; national Fund for Renewable Energy and Energy Efficiency; national tax incentives.
<b>Commentary</b>	<p>Norway's 2007 White Paper on Climate Change proposed that Norway should have the world's most ambitious climate targets including a target to become CO<sub>2</sub> neutral by 2030 in the context of a global agreement.</p> <p>Norway's Ministry of the Environment is responsible for climate policy. Research and technological development are major priority areas in the government's climate policy. The White Paper sets out a number of proposed measures for reducing greenhouse gas emissions in Norway. These include prohibiting landfilling of biodegradable waste, prohibiting the installation of oil-fired boilers in new buildings, and increasing the capital of the fund for the promotion of energy efficiency measures and renewable energy by up to NOK 10 billion (\$1.535 billion) by 2012.</p> <p>Norway joined the European Union Emissions Trading Scheme (EU-ETS) in 2008. Presently, about 70% of Norwegian emissions are either covered by the emissions trading scheme or subject to a carbon tax, introduced in the 1990s.</p> <p>According to <i>The New York Times</i>, "the feat is being achieved largely by sleight-of-hand accounting and huge donations to environmental projects abroad, rather than meaningful emissions reductions that might be replicated elsewhere."</p>



# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 146

<b>Country/Region</b>	Russia
<b>Policy Type</b>	International Treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 0% change in greenhouse gas emissions from 1990 levels for the period 2008-2012
<b>Date Announced</b>	October, 2004
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	1040 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National emissions target (Target 147); national Renewable Portfolio Standard (Target 148).
<b>Commentary</b>	<p>Russia's lower house of Parliament ratified the Kyoto Protocol in October, 2004.</p> <p>The Russian Ministry of Energy is tasked with taking a large number of measures in support of this target, including: deciding on pricing for electricity produced from renewables; attracting private investment for new and existing projects; engaging with domestic industrial sectors and services; improving reporting on the use of renewables in electricity generation; and raising public awareness about renewable energy sources.</p> <p>According to the Russian Regional Environmental Center, climate change is not among the top Russian policy priorities. Climate change and sustainable energy issues are split up between 9 Ministries and Agencies, with a low level of co-operation. There are weak signals from federal to regional and local authorities. And enormous oil and gas resources slow down the transfer to low-carbon and renewable sources of energy.</p> <p>According to data submitted to the UN, emissions of greenhouse gases rose by 0.3% in 2007 to the highest levels since 1994. This is still about 34% below 1990 levels, due to substantial deindustrialization after the fall of the Soviet Union.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 147

<b>Country/Region</b>	Russia
<b>Policy Type</b>	Executive Order
<b>Policy Name/Description</b>	40% reduction in energy intensity per unit of GDP from 2007 levels by 2020
<b>Date Announced</b>	June, 2008
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	455 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 148).
<b>Commentary</b>	<p>On June, 4<sup>th</sup>, 2008, Russian President Dmitry Medvedev signed a decree to cut Gross Domestic Product (GDP) energy intensity by 40% by 2020.</p> <p>The decree set out the following measures, which will be adopted between 2008-2010: introducing efficiency standards in energy-intensive sectors; strict restrictions on further use of obsolete technologies; labeling of power-intensive goods; incentives for businesses that undertake efficiency improvements; and public sector R&amp;D in the area of energy-saving technologies.</p> <p>According to the Russian Regional Environmental Center, climate change is not among the top Russian policy priorities. Climate change and sustainable energy issues are split up between 9 Ministries and Agencies, with a low level of co-operation. There are weak signals from federal to regional and local authorities. And enormous oil and gas resources slow down the transfer to low-carbon and renewable sources of energy.</p> <p>According to data submitted to the UN, emissions of greenhouse gases rose by 0.3% in 2007 to the highest levels since 1994. This is still about 34% below 1990 levels, due to substantial deindustrialization after the fall of the Soviet Union.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 148

<b>Country/Region</b>	Russia	
<b>Policy Type</b>	Executive Order	
<b>Policy Name/Description</b>	20% of power to come from renewables including hydropower (4.5% excluding hydropower) by 2020	
<b>Date Announced</b>	January, 2009	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	35 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 146 and Target 147	
<b>Supporting Policies: Mandates and Incentives</b>	National public funding; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The Executive Order sets several specific targets for expanding the share of renewable energy in electricity generation. The Ministry of Energy is in charge of developing a plan to achieve the target, but has not yet released a plan.</p> <p>Russia invests public funds in research and energy generation infrastructure, and there are a number of projects across Russia that promote biofuels, wind energy, geothermal power, water power and solar power. However there are still legislative hurdles, financing issues, artificially cheap mainstream sources of energy, and a general perception that Russia has so much oil and gas that renewable energy does not need to be a focus.</p> <p>The Russian Ministry of Energy has been tasked with deciding on pricing for electricity produced from renewables, attracting private investment for new and existing projects, engaging domestic industrial sectors and services, improving statistical reporting on the use of renewables in electricity generation, and raising public awareness about renewable energy sources. Execution of these tasks is not yet at an advanced stage.</p> <p>Less than 1% of power came from renewables in 2008, making the target seem ambitious.</p>	

## Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 149

Country/Region	Switzerland
Policy Type	International Treaty
Policy Name/Description	Kyoto Protocol: 8% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
Date Announced	2003
Target Date	2020
CO <sub>2</sub> Abatement Potential	5 MT of hot air in 2012
Policy Category	Emissions target: Cap-and-trade and Carbon tax
Supporting Policies: Mandates and Incentives	Voluntary agreements for emission cuts; national carbon tax; national Renewable Portfolio Standard (Target 151).
Commentary	<p>Switzerland's individual Kyoto Protocol target is to reach a level of emissions 8% below 1990 levels for the period 2008-2012.</p> <p>In 2006, emissions were 1% higher than base year levels. Projections developed before the economic downturn show that with existing policies, emissions will decrease to a level 3% below base year levels for the period 2008-2012. Kyoto mechanisms could reduce this further to 6% below.</p> <p>From July, 2001, the Swiss business community embarked on the process of concluding voluntary agreements for greenhouse gas emission reductions under the CO<sub>2</sub> Act. Under the legislation, the Federal Council decided to introduce a CO<sub>2</sub> tax of CHF 35/ton (\$31.16/ton) of CO<sub>2</sub> on process and heating fuels.</p> <p>In 2008, Switzerland announced that it would set up an emissions trading scheme for companies that would like to be exempted from the domestic carbon tax. Under the scheme, companies would have the possibility of using Kyoto Protocol mechanisms for compliance.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 150

<b>Country/Region</b>	Switzerland
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Reduce fossil fuel consumption by 20% by 2020
<b>Date Announced</b>	2003
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled
<b>Policy Category</b>	Emissions target: Cap-and-trade and Carbon tax
<b>Supporting Policies: Mandates and Incentives</b>	Voluntary agreements for emission cuts; national carbon tax; national Renewable Portfolio Standard (Target 151).
<b>Commentary</b>	<p>The specific targets of the Swiss Energy Program and Action Plan are to: reduce consumption of fossil fuels by about 10%; cap electricity demand growth at 5%; increase the use of renewable energies in heat production by about 3%; increase the use of renewable energies in electricity production by 1%; and reduce fossil fuel consumption by 20% all by 2020.</p> <p>In order to implement the strategy, the Federal Department of the Environment, Transport, Energy and Communications prepared draft action plans for energy efficiency and the use of renewable energy, which were approved by the Federal Council on 20 February 2008. The action plan for increasing energy efficiency encompasses 15 measures in the areas of buildings, mobility, appliances, training and further education, research and technology transfer. The action plan for promoting renewable energy encompasses 7 measures including promoting renewable heat production, biomass energy, hydropower, research and technology transfer, training and further education.</p> <p>From July, 2001, the Swiss business community embarked on the process of concluding voluntary agreements for greenhouse gas emission reductions under the CO<sub>2</sub> Act. Under the legislation, the Federal Council decided to introduce a CO<sub>2</sub> tax of CHF 35/ton (\$31.16/ton) of CO<sub>2</sub> on process and heating fuels.</p> <p>In 2008, Switzerland announced that it would set up an emissions trading scheme for companies that would like to be exempted from the domestic carbon tax. Under the scheme, companies would have the possibility of using Kyoto Protocol mechanisms for compliance.</p>

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 151

<b>Country/Region</b>	<b>Switzerland</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Action Plan on Renewables: 24% renewable energy in total primary energy supply by 2020	
<b>Date Announced</b>	March, 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 149 and Target 150	
<b>Supporting Policies: Mandates and Incentives</b>	Feed-in tariffs; Public funding; Tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The Action Plan for Renewable Heat Sources to raise the share of Renewable Energy in Total Primary Energy Supply from 16.2% to 24% by 2020 was announced in March, 2008. The plan focuses on heat production and streamlining hydropower regulation. This plan complements the Swiss Energy Program that aims to promote energy efficiency and the use of renewable energy.</p> <p>There is an aggressive system of feed-in tariffs in place in Switzerland for solar, wind, biomass, geothermal, and hydropower, which are differentiated by size, technology and application. In July, 2008, the Swiss tariffs were revised, and are now set at among the highest levels in the world. Other supporting policies include incentives for heat pumps, pellets, solar thermal, and admixture of biogas in gas grid. A biomass strategy is in place, and government funding is provided for information, training and R&amp;D activities. As of July, 2008, all biofuels are exempt from the mineral oil tax.</p> <p>The strength of the Swiss Energy Program lies in the close links between federal government, the cantons, municipalities, partners from trade, environmental, and consumer organizations.</p> <p>Currently, renewables have a 16.2% share of the Swiss energy mix.</p>	

# Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 152

Country/Region	Turkey	
Policy Type	Government aspiration	
Policy Name/Description	10% wind and solar in the installed energy mix by 2020	
Date Announced	2008	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	35 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National feed-in tariffs; national Renewable Energy Law; multilateral financing.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>In 2008, the Turkish Ministry of Energy and Natural Resources pledged to increase the share of wind and solar installed capacities in the installed mix from 0.5% to over 10% by 2020.</p> <p>Turkey launched the Renewable Energy Law in 2005 and it details a system of feed-in tariffs to stimulate renewable energy, predominantly wind power. The tariffs are determined by the EPDK (Electricity Market Regulation Authority), based on the previous year's average wholesale price. Tariffs are valid for 10 years and have increased investment activity in Turkey in both the wind and hydro markets. Previous tariff rates were set quite low (€0.05/kWh) for 7 years, but despite this, investors were able to use the lower price guarantee as a means of "insurance" that allowed them to secure project financing. In May, 2009, the government introduced a higher €0.28 per kWh tariff for solar PV for the first 10 years that would then decline to €0.22 for 10 years.</p> <p>A Wind Energy Potential Atlas is published on the internet to provide investors with information.</p> <p>In April and May, 2009, the World Bank released \$600 million to support financing renewable energy projects.</p> <p>0.5% of installed energy capacity in 2008 came from wind and solar.</p>	

## Europe Non-EU Members: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 153

Country/Region	Ukraine
Policy Type	International Treaty
Policy Name/Description	Kyoto Protocol: 0% change in greenhouse gas emissions from 1990 levels for the period 2008-2012
Date Announced	2004
Target Date	2008-2012
CO <sub>2</sub> Abatement Potential	470 MT of hot air in 2012
Policy Category	Emissions target: No carbon price
Supporting Policies: Mandates and Incentives	N/A
Commentary	<p>The Ukraine ratified the Kyoto Protocol in April, 2004, committing to a 0% change in emissions from 1990 levels for the period 2008-2012.</p> <p>The Ukrainian government recently announced its intention to sell US \$3.5 billion worth of carbon credits to buyers in Japan, Switzerland and New Zealand.</p> <p>Ukraine's most recent greenhouse gas inventory showed that in 2004, greenhouse gas emissions stood at only 45% of their 1990 levels, and basic forecasts indicate that in 2012, emissions will not exceed 1990 levels. Current estimates indicate that the Ukraine has over 1 billion Assigned Amount Units (AAUs) that could be sold in the Kyoto Protocol's first commitment period.</p>



# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Latin America

### Target 154

Country/Region	Argentina	
Policy Type	Legislation	
Policy Name/Description	8% of electricity from renewable sources by 2016 (excluding large hydro)	
Date Announced	January, 2007	
Target Date	2016	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National tax exemptions; national feed-in tariffs.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>Argentina adopted a National Renewable Policy in January, 2007. The policy set an 8% renewable target. According to a Washington Action Program progress report issued at the end of February, 2009, Argentina's government is continuing to work in order to accomplish its renewable objectives.</p> <p>Supporting policies for the development of renewable energy were developed through Law 25,019, passed in 1998, and Law 26,190, passed in 2007. The 1998 law declared wind and solar generation of national interest and introduced a mechanism for an additional payment per generated kWh. In 1998, this meant a 40% premium over market prices. It also granted tax exemptions for a period of 15 years from the law's promulgation. The 2007 law complemented the previous one, creating a trust fund whose resources will be allocated to pay a premium for electricity produced from renewable sources.</p> <p>During 2006, feed-in tariff policies were enacted in Argentina, at the equivalent of \$0.30 per kWh.</p> <p>The National Promotion Direction (DNPROM) within the Energy Secretariat (SENER) is responsible for the design of programs and actions conducive to the development of renewable energies and energy efficiency initiatives.</p> <p>6% of power generation came from renewables in 2007, excluding large hydropower.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 155

<b>Country/Region</b>	<b>Brazil</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Maintain a share of >80% power generation from renewables through 2030	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2030	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 156); national feed-in tariffs; national subsidies; national public funding; national PROINFA program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In 2008, Brazil pledged to continue to generate more than 80% of its power from renewables through 2030.</p> <p>For the past few years, Brazil has been trying to diversify its electricity supply fuel mix away from hydroelectric power because of the risk of power shortages during times of severe drought. The country released a new energy plan in December, 2008, called The Brazilian National Energy Plan for 2008-2017. This plan emphasizes the development of nuclear power.</p> <p>Increases in Brazil's electricity generation from non-hydropower renewable energy sources have been supported primarily by the federal Program of Incentives for Alternative Electricity Sources (PROINFA), which was enacted in 2001. Phase I of the program guaranteed power purchase agreements for 3,300 MW of biomass, wind, and small hydro capacity through 2008. A second phase was intended to increase non-hydroelectric generation to 10% of total electricity generation by 2027. Until a replacement policy is put in place, growth in non-hydroelectric renewable generation is expected to be relatively slow according to the IEA. Importantly, the current government favors moving away from feed-in tariffs to a tendering scheme.</p> <p>Renewables accounted for 87% of total electricity generation in Brazil in 2007.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 156

<b>Country/Region</b>	<b>Brazil</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Obtain 7,000 MW of power from non-hydro renewables between 2008 and 2010	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National feed-in tariffs; national subsidies; national public funding; national PROINFA program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Brazil released a new energy plan in 2008, titled The Brazilian National Energy Plan for 2008-2017. The plan establishes a target to reduce reliance on hydropower and increase non-hydroelectric renewable generation.</p> <p>Brazil has municipal laws governing solar energy that require the installation of solar heating in new buildings.</p> <p>Increases in Brazil's electricity generation from non-hydropower renewable energy sources have been supported primarily by the federal Program of Incentives for Alternative Electricity Sources (PROINFA), which was enacted in 2001. Phase I of the program guaranteed power purchase agreements for 3,300 MW of biomass, wind, and small hydro capacity through 2008. A second phase was intended to increase non-hydroelectric generation to 10% of total electricity generation by 2027. Until a replacement policy is put in place, growth in non-hydroelectric renewable generation is expected to be relatively slow according to the IEA. Importantly, the current government favors moving away from feed-in tariffs to a tendering scheme.</p> <p>Brazil currently produces 87% of electricity from hydro sources, which cannot count towards this target. The government is hosting its first auction for projects in the renewable energy sector on November 25<sup>th</sup>, 2009.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 157

<b>Country/Region</b>	<b>Brazil</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	72% reduction in deforestation by 2017 compared to 2006 levels	
<b>Date Announced</b>	December, 2008	
<b>Target Date</b>	2017	
<b>CO<sub>2</sub> Abatement Potential</b>	220 MT of abatement in 2012 and 440 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	Reforestation plan; Amazon Fund;	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Brazil released a new energy plan in 2008, titled The Brazilian National Energy Plan for 2008-2017. As part of this plan, the Brazilian government set a target of reducing deforestation by 72% by 2017. The baseline deforestation rate is an average of the deforestation rates in the 10 years leading up to 2006.</p> <p>The overall plan is underpinned by the Sustainable Amazon Plan (PAS) and the Plan of Action for Protection and Control of Deforestation in the Legal Amazon. There is a new Amazon Fund where foreign nations are encouraged to contribute financially to the conservation of the Amazon. Norway has donated \$130 million to the fund so far.</p> <p>The plan stipulates the replanting of nearly 14 million acres of forest, and will fund sustainable development projects in areas dominated by the logging industry. Patrols in the Amazon will also be increased.</p> <p>Under the Plan of Action for Protection and Control of Deforestation sanctions have been strengthened and measures to curb unsustainable logging have been put in place. Dozens of monitoring and enforcement operations have been undertaken to stop illegal logging.</p> <p>According to the WWF, Brazil has reduced deforestation in the Amazon by 56% since 2004, representing a decrease in emissions of over 1 GT.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 158

Country/Region	Brazil	
Policy Type	Legislation	
Policy Name/Description	4% biodiesel blend requirement	
Date Announced	2003, revised May, 2009	
Target Date	Onwards	
CO <sub>2</sub> Abatement Potential	No impact on BAU in 2012 and 2020	
Policy Category	Renewable Fuel Standard	
Related Emissions Target(s)	N/A	
Supporting Policies: Mandates and Incentives	National biodiesel program; national tax exemptions; multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 2
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>In 2003, the Brazilian Government created the National Program of Production and Use of Biodiesel (PNPB). This program aims to increase the use of biodiesel in the Brazilian energy mix by requiring 2% blending of biodiesel by 2008, and 5% by 2013. In 2008 the 2% target became mandatory after a period of voluntary uptake, and this was subsequently increased to 3% and then 4% in 2009.</p> <p>The program provides a number of incentives for the production of biodiesel, including incentives targeting small farmers. These include the introduction of economic incentive instruments, different tax regimes, targeted technical support, and considerable financial support.</p> <p>In 2004, the National Economic and Social Development Bank announced the creation of the Program of Financial Support and Investments in Biodiesel in Brazil. Petrobras announced that it will invest \$2.4 billion in biofuel production over the next 10 years. Brazil intends to hold an auction to meet the 4% biodiesel mandate.</p> <p>There is excess biodiesel capacity in Brazil, and producers have welcomed the higher mandates. They are now pushing the government to bring forward to 2010 the 5% blending requirement.</p>	

## Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 159

Country/Region	Costa Rica
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	Carbon neutral society by 2021
<b>Date Announced</b>	May, 2007
<b>Target Date</b>	2021
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 160); national tax on gasoline; national C-Neutral Certification Scheme.
<b>Commentary</b>	<p>In June, 2001, Costa Rica's President announced the intention that the country be carbon neutral by 2021.</p> <p>At the heart of the efforts are payments to compensate landowners for growing trees to capture carbon. This program began in 1997, and is funded by a 3.5% tax on gasoline, which is disbursed to landowners through loans and grants. Another key component of the national strategy will be a C-Neutral Certification Scheme to ensure the tourism industry and other sectors mitigate all of the greenhouse gases that they emit. Under this certification system tourists and businesses will be charged a voluntary tax to offset their emissions, with one ton of carbon priced at \$10. The money will be used to fund fuel conservation, reforestation and research. To augment the development of C-Neutral, Costa Rica is cultivating a carbon certificate market.</p> <p>46.7% of the country's primary energy came from renewables in 2004, while 94% of electricity came from renewable sources. In 2007, Costa Rica planted more than 5 million trees, making it the highest per capita planter in the world.</p>

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 160

Country/Region	Costa Rica	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	80-90% of newly installed generation capacity from renewable sources (excluding thermal plants)	
<b>Date Announced</b>	2000	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National tax exemptions; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>This target was established in the Costa Rica National Plan for the Expansion of Electricity Generation for 2000-2010, which set out a number of clear target implementation strategies.</p> <p>The state-run telecoms monopoly, ICE, is the only entity that currently enjoys benefit of a tax exemption on purchases of renewable power and the only one that can legally connect such equipment to the electrical grid. According to Jim Ryan of Costa Rica Tourism, those few pioneers who have installed small renewable generation systems are advising those considering the same to keep their plans a secret from ICE in order to avoid obstacles and penalties.</p> <p>Costa Rica gets some funding from the World Bank for its Umbrella Project for Renewable Energy Sources. The World Bank has also co-funded wind projects in Costa Rica. National government support has been low.</p> <p>The government's Natural Resources Department and the Ministry of Environment and Energy are tasked with developing Costa Rica's energy policy. However this could be undermined by ICE, which plans to increase fossil fuel use for power generation from 13% to 38%, and which currently holds near-monopoly power over electrical grid access for renewables.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 161

Country/Region	Jamaica	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Energy Policy 2009-2030: 11% of renewables in the energy mix by 2012; 12.5% by 2015; 20% by 2030	
<b>Date Announced</b>	May, 2009	
<b>Target Date</b>	2030	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National tax exemptions; national net metering; national grants and loans; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 1	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In May, 2009, the Jamaican government appointed a five-person team to examine and make necessary adjustments to the country's energy policy. Jamaica's Energy Policy 2009-2030 was subsequently released in June, 2009, providing a framework for the sustainable management of energy resources and for the development of viable renewable energy resources, with renewables expected to represent 20% of the energy mix by 2030.</p> <p>The plan includes the following elements: creating an inventory of all potential renewable sites; introducing incentives and favorable planning conditions for renewables; introducing national vehicle emission standards; and complying with international conventions on climate change.</p> <p>The policy will be reviewed as necessary, based on results of assessments by the Ministry of Mining and Energy on what is and is not working. A number of incentives for solar energy use are in place, including net metering, zero tax and duty on solar equipment, government grants, and other grants and loans.</p> <p>The government relies heavily on private investment for renewable projects. The Ministry of Mining and Energy, in conjunction with the Planning Institute of Jamaica (PIOJ), is working with multilateral lending institutions including the World Bank and the Inter-American Development Bank to obtain technical assistance grants to develop renewable projects. The Ministry is also in dialogue with the institutions to help develop a plan for Jamaica's energy future</p> <p>5.6% of energy came from renewables in 2009.</p>	



# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 162

Country/Region	Mexico
Policy Type	Voluntary
Policy Name/Description	50% reduction in greenhouse gas emissions from 2002 level by 2050
Date Announced	December, 11 <sup>th</sup> , 2008
Target Date	2050
CO <sub>2</sub> Abatement Potential	325 MT of abatement in 2020
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	National Renewable Portfolio Standard (Target 163); national Automobile Pollution Plan; Multilateral funding.
Commentary	<p>On December, 11<sup>th</sup>, 2008, Mexico became the first developing country to announce a national cap-and-trade program, with a proposal to reduce emissions to 50% below 2002 levels by 2050. The plan sets emission limits in sectors including electricity, oil refining, and cement production. The architecture of Mexico's plan draws heavily on research by the Center for Clean Air Policy, which is collaborating with Mexico's government on the design of the greenhouse gas reduction program.</p> <p>Mexico's 2008 renewable energy law established an \$800 million fund, partly to finance renewable energy projects. Mexico has said that it will implement this plan if it gets financial support from developed countries. The \$5.2 billion Clean Technology Fund, which is a multilateral fund managed by the World Bank, provides additional support to this target. Mexico has agreed to an investment plan through the fund.</p> <p>Mexico plans to install 7,000 MW of renewable energy capacity to generate 16,000 GWH per year from solar and wind power by 2012. The country also plans to phase-out all buses and trucks more than 10 years old and to increase the transportation of goods by rail by 10% before 2012.</p> <p>A large proportion of Mexico's reductions in emissions have come from the transition of oil-fired power plants to newer plants powered by natural gas. The private sector is also driving the growth of United Nations Clean Development Mechanism projects.</p> <p>The latest official data on greenhouse gas emissions, from 2002, indicate that Mexico released into the atmosphere 643 MT of CO<sub>2</sub> in that year: 61% from energy generation and consumption, 22% from industry and 14% from deforestation.</p>

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 163

Country/Region	Mexico	
Policy Type	Legislation	
Policy Name/Description	Law for the Use of Renewable Sources of Energy: 8% of power to come from renewables by 2012 (excluding large hydro)	
Date Announced	December, 2005	
Target Date	2012	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2012 and 5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 162	
Supporting Policies: Mandates and Incentives	National tax exemptions; national Renewable Energy Law; multilateral funding.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>In December, 2005, the Chamber of Deputies approved the Law for the Use of Renewable sources, establishing a goal of having renewables constitute 8% of Mexico's power generation by 2012, excluding large hydro projects.</p> <p>On October 28<sup>th</sup>, 2008, Mexico's President into effect a decree stipulating that the country would establish a national renewable energy plan by June 30<sup>th</sup>, 2009. In August, 2009, Mexico released a national renewable energy plan with specific targets through 2012.</p> <p>Until November, 2008, Article 27 of the Mexican Constitution made it unconstitutional for the private sector to develop renewable power in Mexico. The enactment of a new law for the use of Renewable Energy and the Financing of the Energy Transition substantially improves the legal framework for private investment in renewable energy projects. Availability of support mechanisms such as certification procedures, best practices manuals, AND guidelines for project development, are still very limited in Mexico.</p> <p>A new initiative by the Energy Secretariat, supported by the Global Environment Facility, seeks to establish a green fund to foster green power projects in Mexico.</p> <p>Mexico is endowed with plentiful renewable resources, but they remain virtually untapped with the exception on geothermal and large hydropower. In 2006, renewable energy represented 22% of power generating capacity in Mexico; however 19% of this was large hydro. Historical achievement of targets has been mixed, with the Energy Sector Program 2001-2006 failing to result in 1,000 MW of new renewable resources.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 164

Country/Region	Nicaragua	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	38% of electric power from renewable sources by 2011	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2011	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National Law on Promotion of Electricity with Renewable Resources; national tax exemptions; Multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Nicaragua made a pledge at the Washington International Renewable Energy Conference to increase the penetration of renewables in the electric power mix. This pledge was modified at the end of February, 2009.</p> <p>In 2005 the Government approved Law 532, the Law on Promotion Electricity Generation with Renewable Resources. This law declared the development and exploitation of renewable resources to be in the national interest.</p> <p>The Law on Promotion of Electricity Generation with Renewable Resources established tax incentives for renewables in 2005 including: exemption from customs duties, exemption from VAT, exemption from income tax, exemption of all the municipal taxes on real estate, sales and registrations, exemption of taxes on the exploitation of natural resources, and exemption from fiscal seals tax.</p> <p>Nicaragua generated 27% of its electricity from renewable sources in 2008.</p>	

# Latin America: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 165

Country/Region	Paraguay	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	50% biofuels in the national fuel pool by 2013	
<b>Date Announced</b>	2008	
<b>Target Date</b>	2013	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Fuel Standard	
<b>Related Emissions Target(s)</b>	N/A	
<b>Supporting Policies: Mandates and Incentives</b>	National Biofuel Law; national tax exemptions; multilateral funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 2
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In 2008, Paraguay announced a National Biofuels Development Plan, by which it aims to expand biofuels from 5% to 50% of the fuel pool by 2013.</p> <p>In October, 2005, the Paraguayan Congress passed Law 2.748 for Biofuels Production, which was followed by Decree 7.412 in 2006 which provides for the implementation of regulations under the law. Minimum mix mandates are established for biofuels at 1% in diesel for 2007, 3% in 2008 and 5% in 2009. Due to the lack of sufficient local supply, in June, 2009 the biodiesel mix requirement was reduced to 1% until further notice. Mix mandates for ethanol of a minimum of 20% and a maximum of 24% were also established.</p> <p>The National Congress has put in place a set of incentives for biofuels. The Promotion of Biofuels Law established tax incentives for biofuels, including reduced corporate tax, tax exemptions on leases, royalties and technology. In May, 2008, the government passed Decree 12240 reducing VAT on biodiesel and ethanol to 2% and eliminating import duties on flex fuel and E85 new and used cars.</p> <p>Financing is available through multilateral banks, bilateral memoranda of understanding, and MERCOSUR funds. Investment so far has been in small ethanol plants, with investment in biodiesel production taking place at a slower rate.</p> <p>In 2009 biofuels make up a very small proportion of the energy mix in Paraguay, which is dominated by biomass, petroleum and hydroelectric power.</p>	

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## North America – Canada

### Target 166

Country/Region	Canada
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 6% reduction in greenhouse gas emissions below 1990 levels for the period 2008-2012
<b>Date Announced</b>	December, 17, 2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	175 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National emissions target (Target 167), Provincial emissions targets (Target 169, Target 171, Target 173 and Target 176); national Renewable Fuel Standard (Target 168); provincial Renewable Portfolio Standards (Target 170, Target 174, Target 175 and Target 178); provincial vehicle efficiency standard (Target 172); provincial coal-fired power policy (Target 177); provincial tax exemptions for alternative vehicles and provincial building codes.
<b>Commentary</b>	<p>On December, 17<sup>th</sup>, 2002, Canada ratified the Kyoto Protocol, which came into force in February, 2005.</p> <p>In January, 2008, the Canadian Government announced that it would begin developing energy efficiency regulations and introduced a policy that would reduce national industrial emissions intensity to 18% below 2006 levels by 2010 to help meet the Kyoto target. Despite these efforts, the UN reported in April, 2009, that Canada is lagging in its Kyoto obligation. The country's greenhouse gas inventory revealed that emissions are 33.8% above its Kyoto commitment, with growth in emissions attributed to Alberta's oil sands and increased reliance on coal-fired power.</p> <p>In May, 2007, the Friends of the Earth sued the federal government for failing to meet the Kyoto Protocol obligations to cut greenhouse gas emissions. The lawsuit was based on a clause in the Canadian Environmental Protection Act that requires the government to "prevent air pollution that violates an international agreement binding on Canada."</p> <p>Some provinces are pursuing policies to curtail emissions, including the Western Climate Initiative, which British Columbia, Manitoba, and Ontario have joined.</p>

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 167

<b>Country/Region</b>	Canada
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	20% reduction in greenhouse gas emissions from 2006 levels by 2020; 60-70% reduction in emissions by 2050
<b>Date Announced</b>	April, 2007
<b>Target Date</b>	2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	210 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	Provincial emissions targets (Target 169, Target 171, Target 173 and Target 176); national Renewable Fuel Standard (Target 168); provincial Renewable Portfolio Standards (Target 170, Target 174, Target 175 and Target 178); provincial vehicle efficiency standard (Target 172); provincial coal-fired power policy (Target 177); provincial tax exemptions for alternative vehicles and provincial building codes.
<b>Commentary</b>	<p>In April, 2007, the Canadian Government announced a new plan: “Turning the Corner: An Action Plan to Reduce Greenhouse Gas and Air Pollution”. The plan set the Government goal to reduce greenhouse gas emissions by 20% from 2006 levels by 2020, and places the country on a path to 60-70% reductions by 2050.</p> <p>The Government has implemented a renewable fuel standard to achieve 5% ethanol and 2% biodiesel blends by 2010, and has an aggressive goal to source 90% of electricity from low-carbon sources, including clean coal and nuclear, by 2020. Some provinces are also pursuing policies to curtail emissions, including the Western Climate Initiative, which British Columbia, Manitoba, and Ontario have joined. The Government’s Economic Plan includes over CAD\$2 billion of green investments designed to protect the environment and stimulate the economy.</p> <p>In May, 2007, the Friends of the Earth sued the Canadian government for failing to meet the Kyoto Protocol obligations to cut greenhouse gas emissions. The lawsuit was based on a clause in the Canadian Environmental Protection Act that requires the government to “prevent air pollution that violates an international agreement binding on Canada.” Canada’s emissions were 30% above 1990 levels in 2007. It is estimated that even with this Action Plan in place, Canada will only be in compliance with its Kyoto target in 2025.</p>

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 168

Country/Region	Canada	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Renewable Fuel Bill C-33: 5% ethanol and 2% biodiesel fuel blends by 2010.	
<b>Date Announced</b>	October, 2006	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2012 and 5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Fuel Standard	
<b>Related Emissions Target(s)</b>	Target 166 and Target 167	
<b>Supporting Policies: Mandates and Incentives</b>	Provincial level renewable fuel standards in Ontario, Manitoba, British Columbia and Saskatchewan; subsidies for research and development in biofuels; federal tax breaks for biodiesel; provincial tax breaks for biodiesel.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In October, 2006, the federal government announced its intention to develop a federal Renewable Fuels Standard, including the mandate of an average of 5% renewable fuel content in gasoline by 2010. Bill C-33 was passed by the Standing Senate Committee on Energy, the Environment and Natural Resources on June, 26<sup>th</sup>, 2008. It was then reported to the full Senate, passed, and gained Royal Assent on the same day.</p> <p>According to the Canadian Renewable fuels Association, Canada currently has 1.4 billion liters in ethanol production capacity with 600 million liters under construction – adding up to 2 billion liters required to meet the standard of 5% by 2010.</p> <p>Up to CAN\$41.5 billion will be allocated over seven years as an operating incentive to producers of renewable fuels. Incentive rates will be up to \$0.10 per liter for renewable alternatives to gasoline and up to \$0.20 per liter for renewable alternatives to diesel for the first three years, then decline thereafter. In 2003, the federal government exempted biodiesel from the \$0.04 per liter federal excise tax. Provincial authorities have also acted to implement biodiesel incentives to stimulate production. British Columbia, Ontario and Manitoba now offer tax exemptions.</p> <p>To enable compliance, a credit and trading system will be established. Under the trading system, companies will have an option of obtaining credits from others rather than actually having renewable fuel content in their fuel.</p>	

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 169

Country/Region	Canada - Alberta
Policy Type	Legislation
Policy Name/Description	Climate Change and Emissions Amendment Act: 50% reduction in greenhouse gas emissions intensity by 2020
Date Announced	January, 2008
Target Date	2020
CO <sub>2</sub> Abatement Potential	115 MT of abatement in 2020
Policy Category	Emissions target: No carbon price
Supporting Policies: Mandates and Incentives	Provincial Renewable Portfolio Standard (Target 170); provincial renewable fuel standard
Commentary	<p>Alberta's Climate Change and Emissions Management Amendment Act received Royal Assent in November, 2008. The Act sets a target of reducing emissions intensity of GDP to 50% of 1990 levels by 2020.</p> <p>The Act requires facilities with greenhouse gas emissions above certain thresholds to report their emissions and also grants Alberta's cabinet the authority to regulate emissions and offsets. In addition to reducing emissions to meet its target, a facility can comply by offsetting its emissions in accordance with Alberta's offset project guidelines. Facilities can also obtain "fund credits" by paying into a Climate Change and Emissions Management Fund \$15/ton of emissions reductions required.</p> <p>The Amendment Act is part of Alberta's Climate Change Strategy which focuses around three key themes: Conserving and using energy efficiently; implementing carbon capture and storage; and greening energy production in Alberta.</p> <p>Alberta is one of the largest fossil fuel energy producers in the world especially from its large deposits of oil sands. The Action plan cites CCS as the abatement measure with the greatest potential. , Canada-Alberta ecoENERGY, which is a dedicated task force on CCS, is already in place and there is the intention to establish a multi-disciplinary carbon capture and storage Development Council. The Albertan government is investing \$2 billion in CCS.</p> <p>Initial unaudited results for 2008 released by the government of Alberta, show that companies have reduced emissions by 6.5 MT to date through operational changes and investing in verified offsets created by other projects in Alberta. However, a 2009 report conducted by the Global Forest Watch found that greenhouse gas emissions from Alberta's oil sands might be up to 25% higher than previously known owing to the omission of the impact of forest and peatlands in calculations.</p>



# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 170

Country/Region	Canada – Alberta	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	20% renewable by 2020	
<b>Date Announced</b>	2006	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 166, Target 167 and Target 169	
<b>Supporting Policies: Mandates and Incentives</b>	Energy Environment Technology Fund; Biogas credits	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In 2006, the Energy Environment Technology Fund of Alberta was launched with a target of reaching 20% renewable electricity in the province by 2020. Renewable energy in the province is a key theme within the Alberta Climate Change Strategy.</p> <p>There are a number of policies in place to support this target. In 2008, a renewable fuel standard requiring 5% ethanol and 2% biodiesel blends by 2010 was adopted by the province. The province also offers biogas producer power credits to support commercial production of biogas-electricity. There are currently no incentives in place to support wind power production.</p> <p>In 2008, 7% of Alberta's electricity generation was derived from renewable sources, with 2% from wind, 1% from biomass, and 4% from hydro. According to the Canadian Wind Energy Association, Alberta is now designing transmission upgrades to connect 3,000 MW of wind in the southwest of the province. However, given the low penetration of renewable electricity to date and this lack of dedicated implementation capacity, unless there is imminent reform, the 2020 target of 20% renewable seems ambitious.</p>	

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 171

Country/Region	Canada – British Columbia
Policy Type	Legislation
Policy Name/Description	Greenhouse Gas Reduction Targets Act: 33% reduction in greenhouse gas emissions below 2007 levels by 2020; 80% by 2050.
Date Announced	November, 2007
Target Date	2020 and 2050
CO <sub>2</sub> Abatement Potential	30 MT of abatement in 2020
Policy Category	Emissions target: Cap-and-trade and Carbon tax
Supporting Policies: Mandates and Incentives	Provincial vehicle efficiency standard (Target 172); provincial carbon tax; provincial green building code; “LiveSmart BC” initiative; provincial tax breaks for biodiesel.
Commentary	<p>The November, 2007 Greenhouse Gas Reduction Targets Act established British Columbia’s commitment to reduce greenhouse gas emissions by 33% compared to 2007 levels by 2020.</p> <p>British Columbia’s Climate Action Plan outlines comprehensive strategies and initiatives that will help the province achieve approximately 73% of its 2020 goal. The plan outlines a new green economy with a wide range of specific actions that will make the province more efficient and productive while reducing greenhouse gas emissions. In addition, the plan discusses how the Climate Action Team for British Columbia will develop strategies to achieve the rest of the 2020 target</p> <p>Incentives included in the plan include \$1.8 billion in tax cuts funded by the revenue-neutral carbon tax. Revenue collected from the tax must, by law, be recycled into the economy in the form of tax cuts. The government is legally compelled to table an annual public plan outlining how every cent of carbon tax revenue will be balanced by a tax reduction. A LiveSmart BC initiative was launched in 2008 to provide incentives to reward smart choices that save energy.</p> <p>The Province is a member of the Climate Registry, an international partnership working to create a common approach to measuring and reporting greenhouse gas emissions. It is also a member of the Western Climate Initiative (WCI), enabling it to participate in a regional cap-and-trade system to reduce emissions from industrial polluters.</p>

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 172

Country/Region	Canada – British Columbia	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	Greenhouse Gas Reduction (Vehicles Emissions Standards) Act: Reduce greenhouse gas emissions from vehicles by 30% relative to 2008 models by 2016	
<b>Date Announced</b>	April, 2008	
<b>Target Date</b>	2016	
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled	
<b>Policy Category</b>	Industry/Sector Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 166, Target 167, and Target 171	
<b>Supporting Policies: Mandates and Incentives</b>	Provincial tax exemptions for hybrid vehicles; provincial transit plan, which includes substantial public funding.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>British Columbia's Ministry of Environment announced the Greenhouse Gas Reduction (Vehicle Emissions Standards) Act in April, 2008. The legislation establishes vehicle emission standards to reduce greenhouse gas emissions by 30% relative to 2008 models.</p> <p>Details on implementation strategies for the legislation can be found within the British Columbia Climate Action Plan.</p> <p>A 'fleet average' approach will enable manufacturers to keep selling vehicles that exceed the allowed emissions – provided they sell enough low-carbon vehicles for their fleets to meet the fleet average.</p> <p>C\$14 billion has been invested in a provincial transit plan. Substantial tax exemptions for efficient vehicles have also been implemented, including waiving the provincial sales tax for hybrid vehicles.</p> <p>British Columbia's Ministry of Environment oversees climate change programs in the province and has set up the Climate Action Team to monitor progress.</p>	

## North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 173

Country/Region	Canada - Manitoba
Policy Type	Legislation
Policy Name/Description	Climate Change and Emissions Reductions Act: 6% reduction in greenhouse gas emissions below 1990 levels by 2012; 15% by 2020.
Date Announced	June, 2008
Target Date	December, 31 <sup>st</sup> , 2012
CO <sub>2</sub> Abatement Potential	Not modeled
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	Provincial Renewable Portfolio Standard (Target 174); provincial ethanol fuel mandate; provincial 'Driving Green' program including rebates for hybrid vehicles; provincial building efficiency codes; provincial tax breaks for biodiesel.
Commentary	<p>Enacted in June, 2008, The Climate Change and Emissions Reductions Act (CCERA) binds the province to reducing greenhouse gas emissions to 6% below 1990 levels by the end of 2012.</p> <p>The Act is backed by "Beyond Kyoto," Manitoba's updated Climate Change Action Plan, a comprehensive strategy outlining over 60 actions that will achieve greenhouse gas reductions from all sectors. Manitoba is also a member of the Western Climate Initiative (WCI) cap-and-trade scheme, enabling it to trade emission credits regionally and meet its longer-term WCI 15% reduction target by 2020 under the scheme.</p> <p>According to Manitoba's Climate Action Plan, since 2000, Manitoba's emissions have remained relatively stable. They are expected to decline by 2010.</p> <p>For 2010, 2012 and every fourth year after 2012, the minister responsible for administering the Climate Change and Emissions Reductions Act must prepare a report that assesses the current and predicted impacts of climate change for Manitoba and describes the government's policies, programs, incentives and measures for assisting Manitoba in reducing emissions.</p>

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 174

Country/Region	Canada – Manitoba	
<b>Policy Type</b>	Executive Order	
<b>Policy Name/Description</b>	1,000 MW installed wind capacity 2016	
<b>Date Announced</b>	November, 2005	
<b>Target Date</b>	2016	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 166, Target 167, Target 173 and Target 185	
<b>Supporting Policies: Mandates and Incentives</b>	Federal wind power production incentive; provincial tax incentives.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In November, 2005, Manitoba's Energy, Science and Technology Minister announced that the provincial government, in conjunction with Manitoba Hydro, the electric power and natural gas utility, would encourage the development of 1,000 MW of wind power over 10 years. The province and Manitoba Hydro released an invitation for expressions of interest from parties that have the potential to deliver wind-power projects between 10 MW and 1,000 MW.</p> <p>In 2005, the Canadian federal government implemented a number of measures that may bolster the effectiveness of Manitoba's efforts. The \$260 million federal wind power production incentive covers about half of the cost premium of wind projects. There are also tax incentives in place in Manitoba, which allow for accelerated depreciation of wind energy investments.</p> <p>Growth in wind power has been rapid in Manitoba. Before the 99 MW wind energy project in St. Leon opened in 2006, there was no installed commercial-scale wind power generation in the province. Today there is around 400 MW wind capacity installed.</p>	

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 175

Country/Region	Canada – Nova Scotia	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Renewable Energy Standard Regulations: 5% of the total electricity generation from new renewable sources by 2010; 10% by 2013.	
<b>Date Announced</b>	February, 2007	
<b>Target Date</b>	2010 and 2013	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 166 and Target 167	
<b>Supporting Policies: Mandates and Incentives</b>	Federal wind power production incentive; provincial rebates.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In January, 2007, the Nova Scotia Department of Energy introduced regulations that require 20% of Nova Scotia's electricity to be generated by renewable energy by 2013. The legislation calls for the addition of 5% of new renewables to the total electricity supply by 2010, and 10% by 2013.</p> <p>In January, 2009, a detailed energy strategy was unveiled for Nova Scotia. The plan contains a detailed timeline for implementation of the 2013 target for renewables and sets out action plans to achieve the target as well as suggesting that a longer-term target of 25% renewable electricity by 2020 should be implemented.</p> <p>In 2005, the Canadian federal government implemented a number of measures that may bolster the effectiveness of Nova Scotia's efforts. The \$260 million federal wind power production incentive covers about half of the cost premium of wind projects. There are also some provincial incentives in place for renewables, including a rebate on solar water heating.</p> <p>Around 70 MW of wind capacity has been installed. If the target is to be met, Nova Scotia will need to deploy 210 MW of additional wind by 2010 and 510 MW additional by 2013. Nova Scotia Power has expressed concern that it might not meet the target due to delays in approved wind projects.</p> <p>A daily penalty of no more than \$500,000 is in place for failure to comply with the target.</p>	

## North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 176

Country/Region	Canada - Ontario
Policy Type	Legislation
Policy Name/Description	6% reduction in greenhouse gas emissions below 1990 levels by 2014; 15% by 2020.
Date Announced	June, 2007
Target Date	2014
CO <sub>2</sub> Abatement Potential	Not modeled
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	Provincial coal-fired power policy (Target 177); "MoveOntario 2020" transportation plan; Feed-in tariffs for renewable projects; and provincial tax breaks for biodiesel.
Commentary	<p>Ontario launched its Climate Change Action Plan in June, 2007, establishing a target to reduce emissions by 6% compared to 1990 levels by 2014.</p> <p>Ontario is a member of the Climate Registry, an international partnership working to create a common approach to measuring and reporting greenhouse gas emissions. It is also a member of the Western Climate Initiative (WCI), the Midwest Greenhouse Gas Reduction Gas Initiative as well as being an observing state to the Regional Greenhouse Gas Initiative (RGGI) cap-and-trade schemes. The WCI enables Ontario to trade emission credits regionally. In June, 2008, Ontario and Quebec signed a Memorandum of Understanding to develop a regional cap-and-trade system for implementation as early as 2010.</p> <p>Coal-fired electricity generation is one of the province's largest sources of greenhouse gas emissions, and bold action has been taken in setting the industry standard to eliminate coal burning in Ontario's four remaining coal-fired power stations by year end 2014. It is estimated that this move could reduce greenhouse gas emissions by up to 30 MT. The Province is also on target to sign contracts for at least 2,700 MW of new renewable power by 2010, and has introduced attractive incentive schemes for small power producers who can access 20-year fixed price contracts for renewable projects. The Province's transportation plan, "MoveOntario 2020," also aims to reduce greenhouse gas emissions from the sector.</p>

# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 177

Country/Region	Canada – Ontario	
Policy Type	Legislation	
Policy Name/Description	Eliminate coal-fired power by December, 31 <sup>st</sup> , 2014	
Date Announced	June, 18 <sup>th</sup> , 2007	
Target Date	2014	
CO <sub>2</sub> Abatement Potential	30 MT of abatement in 2020	
Policy Category	Sector/Industry Specific Regulation	
Related Emissions Target(s)	Target 166, Target 167, Target 176 and Target 185	
Supporting Policies: Mandates and Incentives	Green Energy Act 2009	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>In June, 2007, Ontario's Government announced that it would close its remaining coal-fired power plants by 2014. This legislation makes Ontario the first jurisdiction in North America with a regulation in place to eliminate coal-fired power. Behind the overarching goal, there is a detailed coal phase-out plan.</p> <p>Ontario is making steady progress towards this goal. Currently, it only uses coal during peak demand, and it has already closed its Lakeview coal-fired plant. Ontario's coal-fired generation fell by 36% between 2003 and 2008.</p> <p>The Clean Air Alliance reported that Ontario has the capacity to achieve a virtually complete coal phase-out by January 1<sup>st</sup>, 2010, 4 years earlier than the target date. In January, 2009, the Independent Electricity System Operator (IESO) supported the view that Ontario is well positioned for the phase-out of coal-fired power.</p> <p>As coal plants are phased out, they will be replaced with renewable sources. The Green Energy Act, implemented in May, 2009, helps support this transition by putting in place a robust regulatory framework to bring more renewable projects to the province and to boost energy efficiency. There is currently 782 MW of wind capacity in place in Ontario and in January, 2009, contracts for six new wind energy projects totaling almost 500 MW were announced.</p>	



# North America – Canada: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 178

Country/Region	Canada – Quebec	
Policy Type	Government aspiration	
Policy Name/Description	Energy Strategy 2006-2015: 4,000 MW wind energy by 2015	
Date Announced	May, 2006	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	10 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 166, Target 167 and Target 185	
Supporting Policies: Mandates and Incentives	Federal wind power production incentive; provincial tax incentives.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>The Government of Quebec laid out the renewable targets within the “Quebec Energy Strategy 2006 to 2015.” The plan defines the Province’s energy goals for the next decade. Major components of the plan include investment in research and innovation and to strengthen the link between hydroelectricity and wind power.</p> <p>In April, 2009, Quebec had 532 MW of installed wind capacity. In October 2004 and February, 2005, Hydro-Quebec, one of Canada’s largest purchasers of electricity generated by wind energy, announced an aggregate of 990 MW of new wind power projects that would be installed between 2006 and 2012. Additionally in May, 2009, two new RFPs for 500 MW of wind energy were announced. The Quebec government anticipates that the two RFPs will generate \$1.3 billion in investment.</p> <p>The Government of Quebec’s commitment to wind power has been demonstrated in its employment programs. A 30% refundable tax credit for wages paid to eligible employees is available from the government for the production of wind generated electricity in the Gaspésie-Îles-de-la-Madeleine region. Additionally, incentives are available for wind generation by a private investment promotion and job creation fund that offers a number of incentives to qualifying wind power projects.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## North America – United States

### Target 179

Country/Region	United States
<b>Policy Type</b>	Proposed Legislation
<b>Policy Name/Description</b>	American Clean Energy and Security Act (ACES): 17% reduction in greenhouse gas emissions below 2005 levels by 2020; 83% below 2005 levels in 2050
<b>Date Announced</b>	May, 2009
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	1105 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	2 regional emissions targets (Target 184 and Target 185); 32 state emissions targets (Target 186, Target 188, Target 193, Target 194, Target 196, Target 198, Target 199, Target 201, Target 206, Target 207, Target 210, Target 211, Target 213, Target 214, Target 218, Target 221, Target 224, Target 225, Target 227, Target 228, Target 230, Target 232, Target 233, Target 240, Target 244, Target 245, Target 249, Target 251, Target 252, Target 255, Target 257, and Target 259); federal renewable fuel standard (Target 181); proposed federal vehicle efficiency standard (Target 183); proposed federal Renewable Portfolio Standard (Target 182); 38 state Renewable Portfolio Standards (Target 187, Target 189, Target 190, Target 192, Target 195, Target 197, Target 200, Target 203, Target 204, Target 205, Target 208, Target 209, Target 212, Target 215, Target 216, Target 219, Target 220, Target 222, Target 223, Target 226, Target 229, Target 231, Target 234, Target 235, Target 236, Target 237, Target 238, Target 241, Target 242, Target 246, Target 247, Target 248, Target 250, Target 253, Target 254, Target 256, Target 258, and Target 260); state lighting standard (Target 191); state power sector standard (Target 202); 3 state energy efficiency standards (Target 217, Target 239 and Target 243); state biomass target (Target 254).
<b>Commentary</b>	<p>In June, 2009, the House of Representatives passed the American Clean Energy and Security Act (ACES), sponsored by Rep. Henry A. Waxman, Chairman of the House Energy and Commerce Committee, and Rep. Edward J. Markey, Chairman of the House Select Committee on Energy Independence and Global Warming.</p> <p>The ACES contains three primary programs for reducing carbon emissions: (1) a cap on large domestic sources of emissions; (2) a program to reduce tropical deforestation; and (3) an offset program.</p> <p>The program would be implemented by adding two new provisions to the Clean Air Act to be primarily administered by the EPA. The new obligations would be phased in for different covered entities from 2012 to 2016.</p>

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 180

Country/Region	United States
Policy Type	Proposed legislation
Policy Name/Description	Save Our Climate Act: 80% reduction in greenhouse gas emissions below 1990 levels by 2050
Date Announced	February, 2009
Target Date	2050
CO <sub>2</sub> Abatement Potential	Not modeled
Policy Category	Emissions target: Carbon tax
Supporting Policies: Mandates and Incentives	2 regional emissions targets (Target 185 and Target 184); 32 state emissions targets (Target 186, Target 188, Target 193, Target 194, Target 196, Target 198, Target 199, Target 201, Target 206, Target 207, Target 210, Target 211, Target 213, Target 214, Target 218, Target 221, Target 224, Target 225, Target 227, Target 228, Target 230, Target 232, Target 233, Target 240, Target 244, Target 245, Target 249, Target 251, Target 252, Target 255, Target 257, and Target 259); federal Renewable Fuel Standard (Target 181); proposed federal vehicle efficiency standard (Target 183); proposed federal Renewable Portfolio Standard (Target 182); 38 state Renewable Portfolio Standards (Target 187, Target 189, Target 190, Target 192, Target 195, Target 197, Target 200, Target 203, Target 204, Target 205, Target 208, Target 209, Target 212, Target 215, Target 216, Target 219, Target 220, Target 222, Target 223, Target 226, Target 229, Target 231, Target 234, Target 235, Target 236, Target 237, Target 238, Target 241, Target 242, Target 246, Target 247, Target 248, Target 250, Target 253, Target 254, Target 256, Target 258, and Target 260); state lighting standard (Target 191); state power sector standard (Target 202); 3 state energy efficiency standards (Target 217, Target 239 and Target 243); state biomass target (Target 254).
Commentary	The Save Our Climate Act has not come into force as of publication. It would impose a tax on carbon-based fossil fuels. The Act targets reducing emissions by 80% below 1990 levels by 2050, and imposes an initial tax of \$10/ton of CO <sub>2</sub> e tax on fossil fuels. The tax would increase by \$10/ton each year, freezing when a Department of Energy report determines that emissions have decreased by 80% from 1990 levels.

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 181

<b>Country/Region</b>	<b>United States</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Energy Independence and Security Act of 2007: 36 billion gallons of ethanol production by 2022.	
<b>Date Announced</b>	January, 2008	
<b>Target Date</b>	2022	
<b>CO<sub>2</sub> Abatement Potential</b>	260 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Fuel Standard	
<b>Related Emissions Target(s)</b>	Target 179	
<b>Supporting Policies: Mandates and Incentives</b>	Proposed national carbon tax (Target 180); volumetric ethanol excise tax credit; biodiesel tax credit; states such as Louisiana, Missouri, Montana and Oregon have also implemented renewable fuel standards.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>A detailed, year-by-year requirement is in place and the legislation establishes specific volume standards for cellulosic biofuel, biomass-based biofuel, advanced biofuel and total renewable fuel that must be used in transportation fuel each year.</p> <p>The impacts of the requirement on petroleum consumption, fuel costs and energy security have been studied and are well documented.</p> <p>In support of this target, the Department of Energy is pushing cutting edge research and development in biofuels with a budget increase from below \$100 million a year in 2006 to \$198 million a year today. Compliance with the mandate is measured through a system of Renewable Identification Numbers. Gasoline producers and importers are assigned a number of Renewable Identification Numbers that they must hand over to the Environmental Protection Agency each year. The Renewable Identification Numbers can be traded on the Environmental Protection Agency's Moderated Transaction System.</p> <p>Robust civil penalties are in place of up to \$32,500 for each day of violation of the mandate or each instance of violation. Violators are also fined the amount of economic benefit they accrued in instances of non-compliance.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 182

Country/Region	United States	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	American Clean Energy and Security Act: Combined renewable electricity and electricity savings of 6% 2012 rising to 20% by 2020	
<b>Date Announced</b>	May, 2009	
<b>Target Date</b>	2012 and 2020	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 460 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179	
<b>Supporting Policies: Mandates and Incentives</b>	38 state Renewable Portfolio Standards (Target 187, Target 189, Target 190, Target 192, Target 195, Target 197, Target 200, Target 203, Target 204, Target 205, Target 208, Target 209, Target 212, Target 215, Target 216, Target 219, Target 220, Target 222, Target 223, Target 226, Target 229, Target 231, Target 234, Target 235, Target 236, Target 237, Target 238, Target 241, Target 242, Target 246, Target 247, Target 248, Target 250, Target 253, Target 254, Target 256, Target 258, and Target 260)	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: N/A	Sovereign Credit Risk: N/A
	Public Financing: N/A	Integrated Plan: N/A
	Enforcement: N/A	Implementation Capacity: N/A
	Monitoring: N/A	Historical Achievement: N/A
<b>Overall Risk Assessment</b>	N/A: Awaiting Senate Bill and House Reconciliation	
<b>Supporting Commentary</b>	<p>In June, 2009, the House of Representatives passed the American Clean Energy and Security Act (ACES), sponsored by Rep. Henry A. Waxman, Chairman of the House Energy and Commerce Committee, and Rep. Edward J. Markey, Chairman of the House Select Committee on Energy Independence and Global Warming.</p> <p>The ACES contains three primary programs for reducing carbon emissions: (1) a cap on large domestic sources of emissions; (2) a program to reduce tropical deforestation; and (3) an offset program.</p> <p>The renewable electricity standard is an amendment of the Public Utility Regulatory Policies Act of 1978 (PURPA). The ACES requires retail electric suppliers to meet a growing percentage of their load with electricity generated from renewable resources and electricity savings. The combined renewable electricity and electricity savings requirement begins at 6% in 2012 and gradually rises to 20% in 2020. In 2020, 15% of the electricity load in each state must be met with renewable electricity and 5% can be met with electricity savings. Upon petition by the governor, the renewable requirement can be reduced to 12% and the electricity savings can be increased to 8%. As an alternative means of complying with the RES, a retail electric supplier may submit, in lieu of a federal REC or MWh of electricity savings, an “alternative compliance payment” equal to \$25, adjusted for inflation.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 183

Country/Region	United States	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	Fleet average efficiency of 35.5 miles per gallon by 2016	
<b>Date Announced</b>	May, 2009	
<b>Target Date</b>	2016	
<b>CO<sub>2</sub> Abatement Potential</b>	170 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 179	
<b>Supporting Policies: Mandates and Incentives</b>	CO <sub>2</sub> /CAFÉ credits; federal grants; state initiatives supporting clean vehicles.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>This proposal calls for incremental increases in fuel economy of 5% per year from 2012 to 2016. The National Highway Traffic Safety Administration is being required to set individual CAFE standards for every model year from 2011 on to ensure achievement of the target.</p> <p>Flexible mechanisms, including CO<sub>2</sub>/CAFÉ credits, are being used to incentivize compliance. They are earned based on fleet average performance. At the end of each model year, when sales of the model year are complete, a sales-weighted fleet average will be calculated for each averaging set under the proposal (cars and trucks). Under this approach, car and/or truck fleets that achieve a fleet average CO<sub>2</sub>/CAFÉ level better than the standard would earn credits.</p> <p>10 auto executives and the President of the United Auto Workers joined President Obama for the announcement of the target. Substantial public money has been made available in support of this target. In August, 2009, President Obama announced \$2.4 billion in grants to companies developing car battery and hybrid technologies.</p> <p>A penalty of \$5.50 times the number of vehicles in the fleet times the number of tenths of a mpg by which the fleet average falls below the standard has been proposed for non-compliance. The Environmental Protection Agency notes that there have been no instances of noncompliance with its national LEV and Tier 2 corporate average standards, on which the compliance mechanisms of this target are closely based.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 184

Country/Region	United States – Regional Greenhouse Gas Initiative
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): Cap greenhouse gas emissions from power plants at current levels in 2009, and then reduce emissions by 10% by 2018 in 10 northeastern states, including Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island and Vermont.
<b>Date Announced</b>	December, 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	40 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	State emissions targets (Target 193, Target 194, Target 196, Target 206, Target 207, Target 210, Target 211, Target 213, Target 214, Target 224, Target 225, Target 227, Target 228, Target 232, Target 233, Target 244, Target 245, Target 251, Target 252); state renewable portfolio standards (Target 195, Target 197, Target 208, Target 209, Target 212, Target 215, Target 226, Target 229, Target 234, Target 235, Target 246, Target 253, Target 254); proposed federal vehicle efficiency standard (Target 183).
<b>Commentary</b>	<p>This is the first mandatory market-based effort in the US to reduce greenhouse gas emissions. RGGI is composed of individual CO<sub>2</sub> budget trading programs in each of the 10 states – and these programs are implemented through state regulations, based on a RGGI Model Rule and linked through CO<sub>2</sub> allowance reciprocity.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 185

Country/Region	United States – Western Climate Initiative
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Western Climate Initiative (WCI): 15% reduction in greenhouse gas emissions from 2005 levels by 2020 by 11 US states and Canadian provinces, including Arizona, British Columbia, California, Manitoba, Montana, New Mexico, Ontario, Oregon, Quebec, Utah, and Washington. 6 Mexican states, 6 US states and one Canadian province are also WCI observers.
<b>Date Announced</b>	August, 22 <sup>nd</sup> , 2007
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	200 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Proposed federal carbon tax (Target 180); state and provincial emissions targets (Target 171, Target 172, Target 173, Target 176, Target 186, Target 188, Target 221, and Target 230, Target 240, Target 249, Target 257); state and provincial Renewable Portfolio Standards (Target 174, Target 178, Target 187, Target 189, Target 190, Target 222, Target 231, Target 241, Target 250 and Target 258); proposed federal vehicle efficiency standard (Target 183); state lighting standard (Target 191); provincial vehicle efficiency standard (Target 172); provincial coal-fired power policy (target 177).
<b>Commentary</b>	<p>On September 23<sup>rd</sup>, 2008, the WCI released its design recommendations for a regional multi-sector cap-and-trade program. The target has been carefully set according to: analysis of each state's emissions inventories; the aggregation of greenhouse gas emissions and emissions goals of WCI partners; gross emissions estimates; and consumption-based emissions estimates for the electricity sector.</p> <p>The program will be implemented in two phases. Beginning on January 1<sup>st</sup>, 2012, emissions from electricity generation and large industrial and commercial sources will be covered. In the second phase, beginning in January, 2015, the program will expand to cover emissions from transportation and residential, commercial, and industrial fuel use not otherwise covered.</p> <p>The overall target represents an aggregate of goals set by each individual state. A reporting committee will oversee jurisdictional rules, reporting tools and a regional emissions database. Mandatory reporting of greenhouse gas emissions will begin prior to the cap-and-trade program and each partner will update the other WCI partners on their climate plans every two years to ensure adequate progress is taking place.</p> <p>In 2008, to encourage emissions reductions before the official launch of the program, criteria for acceptable "early action offsets" were developed.</p>



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 186

Country/Region	United States – Arizona
<b>Policy Type</b>	Executive Order
<b>Policy Name/Description</b>	Executive Order 2006-13: Reduce greenhouse gas emissions to 2000 levels by 2020; achieve a 50% reduction below 2000 levels by 2040.
<b>Date Announced</b>	August, 2006
<b>Target Date</b>	2020 and 2040
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade under the Western Climate Initiative; state Renewable Portfolio Standard (Target 187); state appliance efficiency standards; state building energy code; state energy standards for public buildings; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>Arizona has developed a detailed Climate Change Action Plan behind this target with 49 recommendations for addressing and reducing greenhouse gas emissions. Prior to the first meeting of the Climate Change Action Group, a preliminary inventory and forecast of greenhouse gas emissions for Arizona was produced for 1990-2020. It showed that the state's net emissions increased by 56% between 1990 and 2005, and that emissions were forecast to increase by 148% from 1990 to 2020, taking into account the effect of business-as-usual energy efficiency measures.</p> <p>The Climate Change Action Group acknowledged that the high business-as-usual growth of emissions posed a challenge. They identified a set of interventions focused on energy efficiency and renewable energy as the most promising methods to reduce emissions.</p> <p>A number of streams of financing are being brought together to support Arizona's plan. The state received an award of \$22.8 million from the US Department of Energy for the Weatherization Assistance Program. The funding will be used to weatherize 6,500 homes in the state over the next 3 years. After demonstration of successful implementation of this plan, Arizona will receive more than \$28 million in additional funds. The Arizona Department of Environmental Quality also received \$1.73 million from the American Recovery and Reinvestment Act of 2009. The funding will support clean diesel projects and loan programs to address diesel engine fleet.</p> <p>Arizona is a signatory to the Western Climate Initiative (WCI), which allows it to participate in emissions trading to meet its obligations. It must report to its WCI partners every two years on its climate plans.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 187

Country/Region	United States – Arizona	
Policy Type	Legislation	
Policy Name/Description	15% of energy from renewables by 2025 (4.5% by 2012 from distributed energy resources)	
Date Announced	February, 2006	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	10 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	Target 179, Target 180, Target 185 and Target 186	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits, state tax credits for solar and wind projects; state green building incentives; state Renewable Industries program; state solar access law; state solar/wind permitting standards.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 3
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>Arizona has a Climate Change Action Plan and 7-8 years of operational experience with its renewable portfolio standard. There is a detailed compliance schedule with interim targets to achieve 2.5% by 2010, 5% by 2015, and 10% by 2020 with a specified amount of distributed generation for each compliance year. In Arizona, winning technologies are likely to be biogas, large scale solar, hydroelectric, wind and geothermal.</p> <p>The state has a number of policies in place that could complement the RPS. These include a property tax exemption for solar energy property, a solar and wind equipment tax exemption, and a residential solar and wind energy systems tax credit. There are also supporting rules, regulations, and policies in place, such as the green building requirement for city buildings, and renewable energy and green buildings standards for state buildings. In July, 2009, Arizona's Governor signed the Renewable Industries program into law. The program will offer \$350 million in refundable tax credit to stimulate new investment through renewable energy manufacturing. There are also flexible compliance mechanisms in place to support target achievement.</p> <p>In 2007, 5.9% of total electricity generation in Arizona was from renewables, according to the Energy Information Administration. The interim target was for 1.5% by 2007, meaning that Arizona appears to have reasonable renewable penetration. However the majority of this renewable power was from hydropower and the standard requires that distributed energy must account for 5% of the annual renewable energy requirement in 2007.</p>	

## Target 188

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – California
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Assembly Bill 32: Reduce greenhouse gas emissions to 1990 levels by 2020
<b>Date Announced</b>	February, 26 <sup>th</sup> , 2007
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	65 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under the Western Climate Initiative; state Renewable Portfolio Standards (Target 189 and Target 190); state lighting efficiency standard (Target 191); federal and state vehicle emissions standards; state appliance efficiency standards; state building energy code; state energy standards for public buildings; net metering; state solar access law; federal Energy Star homes program.
<b>Commentary</b>	<p>In 2006, the state legislature passed and Governor Arnold Schwarzenegger signed AB 32, the Global Warming Solutions Act of 2006. This established the 2020 greenhouse gas emissions reduction goal as state law. It directed the California Air Resources Board (CARB) to begin developing discrete early actions to reduce greenhouse gases while also preparing a scoping plan to identify how best to reach the 2020 limit.</p> <p>During 2009, CARB staff will draft rule language to implement the plan and will hold workshops on each of the major provisions. In 2010, the early action measures will take effect. By 2011, regulations should be adopted to achieve the maximum technologically feasible and cost-effective reductions in emissions, including provisions for using market and alternative compliance mechanisms.</p> <p>The AB 32 scoping plan details how CARB will implement a broad-based cap-and-trade program linked to the Western Climate Initiative. Design and implementation of this must be finalized by January, 2011.</p> <p>AB 32 also put a multi-agency response team in place to achieve this target and coordinate responses. A Climate Action Team has been established representing key state agencies responsible for implementing strategies and programs to reduce emissions.</p> <p>Research initiatives in California, such as the climate change research subprogram at CARB, have also been particularly active since the passage of AB 32. The subprogram is pursuing substantial work on low-emissions vehicles.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 189

Country/Region	United States – California	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Senate Bills 1078 and 107: 20% of electricity from three major utility providers must be produced from eligible renewable sources by 2010	
<b>Date Announced</b>	2002; revised in 2006 and 2008	
<b>Target Date</b>	2010	
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 185 and Target 188	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state feed-in tariff; state public benefits fund; state rebate programs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>The California Public Utilities Commission (CPUC) notes that to achieve the 2010 target, four new transmission lines will be needed at a cost of \$4 billion. Three of these lines were underway as of June, 2009, but there was no detail in the Commission's report about when the fourth transmission line would begin construction.</p> <p>A feed-in tariff is in place allowing eligible customer-generators to enter into 10-, 15- or 20-year standard contracts with their utilities to sell the electricity produced by small renewable energy systems – up to 1.5 MW – at time-differentiated market-based prices. Regulators have announced that they may extend their feed-in tariff. In July, 2009, Assembly Bill 1106 passed a key Senate committee. The bill would establish two tiers of incentives for renewable energy generators selling electricity to utilities up to 5 MW and from 5 MW to 10 MW. Other incentives in the state for renewable energy include the federal Production and Investment Tax Credits; local loan programs, local renewable rebate programs, and a public benefits fund for renewables.</p> <p>Renewable resources currently provide around 11% of California's electricity, mainly from geothermal, biomass, and small hydro. On this basis, the California Energy Commission has already acknowledged that it will miss the 2010 target by at least 3 years. With three years to make up for deficits, penalties at the discretion of the CUPC, and deferrals able to delay payment for non-compliance, the penalty regime does not appear robust enough to encourage full compliance.</p> <p>Transmission, contract failure, siting challenges, tax incentive uncertainty and slow permitting have all contributed to delays in renewable scale up.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 190

Country/Region	United States – California	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Senate Bills 1078 and 107: 33% of electricity must be produced from eligible renewable sources by 2020	
<b>Date Announced</b>	2002; revised in 2006 and 2008.	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	65 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 185 and Target 188	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state feed-in tariff; state public benefits fund; state rebate programs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Detailed analysis has been conducted on the target. Every scenario studied by the California Public Utilities Commission shows California failing to meet the target by 2020. Achievement by 2021 "represents a best case scenario as it assumes no external risks, no resource constraints in processing numerous transmission and generation applications, and that the California ISO is able to successfully implement its planned new process to review and approve more than one major transmission application per year." A California Public Utilities Commission study found that the target may require a state intervention of \$60 billion in generation and transmission from 2010 to 2020. Given current budgetary conditions, this may not be possible.</p> <p>A feed-in tariff is in place allowing eligible customer-generators to enter into 10-, 15- or 20-year standard contracts with their utilities to sell the electricity produced by small renewable energy systems – up to 1.5 MW – at time-differentiated market-based prices. Regulators have announced that they may extend their feed-in tariff. In July, 2009, Assembly Bill 1106 passed a key Senate committee. The bill would establish two tiers of incentives for renewable energy generators selling electricity to utilities up to 5 MW and from 5 MW to 10 MW. Other incentives in the state for renewable energy include the federal Production and Investment Tax Credits; local loan programs, local renewable rebate programs, and a public benefits fund for renewables.</p> <p>Renewable resources provide around 11% of California's electricity, mainly from geothermal, biomass, and small hydro. Large investments in infrastructure and technology are needed to bring down the price of clean energy if the state is to meet future renewable targets.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 191

Country/Region	United States – California	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Assembly Bill 1109: 50% reduction in energy use for lighting in indoor residences and state facilities and a 25% reduction in energy use for commercial and outdoor lighting by 2018	
<b>Date Announced</b>	February, 2007	
<b>Target Date</b>	2018	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 185 and Target 188	
<b>Supporting Policies: Mandates and Incentives</b>	State public benefits fund; state green building code; state Energy Star lighting program; state energy efficiency loans program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>California will phase out inefficient lightbulbs as part of AB 1109. In September 2008 a Lighting Task Force Report was issued, providing a high level of detail about the plan and costs.</p> <p>To achieve the lighting efficiency levels specified in AB 1109, California will apply existing appliance standards to lighting products and will expand incentives for energy-efficient lighting.</p> <p>The Lighting Task Force is responsible for making "recommendations on methods of collection, recycling, education, outreach, labeling, and designations for end of life residential fluorescent lamps." The State Energy Resources Conservation and Development Commission " is required to prescribe, by regulation, standards for energy conservation and efficiency, including the adoption of efficiency standards for outdoor lighting.</p> <p>A variety of other policies are in place to support target achievement, including the California Energy Star Lighting program and the California loans program for energy efficiency. The California Energy Commission will provide up to \$40 million in loans to schools, hospitals, and local governments for the installation of energy-saving measures.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 192

Country/Region	United States – Colorado	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	House Bill 1281: 20% renewable generation by 2020 for investor-owned utilities; 10% by 2020 for electric cooperatives and municipal utilities.	
<b>Date Announced</b>	March, 2007	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state loan programs; state grant program; state public benefits fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Originally set in 2004 at 10% by 2015, Colorado soon found that it could meet its Renewable Portfolio Standard (RPS) about 8 years early, so in 2007, House Bill 1281 amended the RPS to 20% by 2020.</p> <p>The RPS has been a powerful driver for the scale up of renewable energy and enforcement is modeled on the extremely successful sulfur emissions reduction scheme. Companies must file annual renewable compliance plans to the Colorado Public Utilities Commission. Each qualifying retail utility must submit an annual report to the commission providing information relating to the actions taken to comply with the standard.</p> <p>Tradable renewable energy credits (RECs) may be used to satisfy the standard. Utilities that do not generate the required amount of electricity from eligible renewables may purchase RECs from utilities that exceed the requirement. Financial penalties are assessed at the discretion of the Public Utilities Commission, but penalties can be waived with sufficient cause. Funding:</p> <p>Colorado is one of very few states to specifically address a possible Federal RPS by allowing credits to count against both the Colorado target and a prospective federal requirement. Eligible renewables are specifically defined. Detailed planning for how to spend \$49 million of stimulus money to incentivize renewable deployment has also been conducted.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 193

Country/Region	United States – Connecticut
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	10% reduction in greenhouse gas emissions from 1990 levels by 2020; 75% by 2050.
<b>Date Announced</b>	February, 2005
<b>Target Date</b>	2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade under the Regional Greenhouse Gas Initiative (Target 184 and Target 194); state Renewable Portfolio Standard (Target 195); state appliance efficiency standards; state building energy code; energy standards for public buildings; net metering; federal vehicle emissions standard; federal Energy Star homes program.
<b>Commentary</b>	<p>Connecticut has a detailed Climate Action Plan in place with 55 specific actions on how to reduce emissions in the state. The plan was developed by the Governor's Steering Committee on Climate Change, comprised of members of both the legislative and executive branch of state government. The Steering Committee continues to meet quarterly now that the plan has been released, and a variety of subcommittees are taking further work forward. The plan looks at the impact of both federal and state mandates to ensure that Connecticut meets its targets.</p> <p>Modeling has been conducted on a number of emissions reduction pathways, and scenario results will be released in July 2010. Following that, recommended emissions reduction strategies will be developed for release in 2011.</p> <p>There are a number of supporting policies in place to support Connecticut's greenhouse gas emissions reduction target. These include: regional cap-and-trade under the Regional Greenhouse Gas Initiative, vehicle tailpipe emission standards, and a state Renewable Portfolio Standard. Rebates are also provided for the purchase of newly constructed homes meeting higher energy efficiency standards under the Energy Star homes program.</p>



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 194

Country/Region	United States – Connecticut
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade under RGGI; state Renewable Portfolio Standard (Target 195); state appliance efficiency standards; state building energy code; state energy standards for public buildings; net metering; federal vehicle emission standard; federal Energy Star homes program.
<b>Commentary</b>	<p>Connecticut signed the RGGI Memorandum of Understanding on December, 20<sup>th</sup>, 2005. Implementation of RGGI is a part of Connecticut's detailed Climate Change Action Plan, which includes 55 specific actions on how to reduce emissions in the state. The plan was developed by the Governor's Steering Committee on Climate Change, comprised of members of both the legislative and executive branch of state government. The Steering Committee continues to meet quarterly now that the plan has been released, and a variety of subcommittees are taking further work forward. The plan looks at the impact of both federal and state mandates to ensure that Connecticut meets its targets.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 195

Country/Region	United States – Connecticut	
Policy Type	Legislation	
Policy Name/Description	13% of total electricity generation from renewables by 2009; 27% of total electricity generation from renewables by 2020.	
Date Announced	1998	
Target Date	2009 and 2020	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 , Target 180, Target 184 and Target 193	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction funds; state clean energy fund; state rebate programs; state building energy code.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 3	Historical Achievement: 3
Overall Risk Assessment	<b>3</b>	
Supporting Commentary	<p>Separate portfolio standards are required for energy resources classified as Class 1 (solar power, wind power, fuel cells, methane gas from landfill, ocean thermal, wave or tidal, low-emission advanced renewable energy conversion), Class 2 (waste-to-energy, biomass facilities and older run-of-the-river hydropower) or Class 3 (CHP systems with minimum operating efficiency of 50%; electricity savings from load management). The standard also requires each electric supplier and each electric distribution company to obtain at least 4% of its retail load by using combined heat and power systems and energy efficiency by 2010.</p> <p>The Connecticut legislature has made almost annual changes to the Renewable Portfolio Standard (RPS) since its inception. This has resulted in an unstable policy climate in the state, which has not encouraged developers to invest in projects that might not qualify from one compliance year to the next.</p> <p>Providers that fail to comply with the RPS during an annual period must pay \$0.055 per kWh to the Connecticut Department of Public Utilities.</p> <p>In 2008, Connecticut had 3 MW installed solar capacity, and renewables made up 3.3% of electricity generation in the state in 2007, according to the Energy Information Administration, making the 2009 target very difficult to achieve.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 196

Country/Region	United States – Delaware
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade under Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standard (Target 197); state building energy code; state energy standards for public buildings; net metering; public benefits fund; solar access law; federal Energy Star homes program.
<b>Commentary</b>	<p>Delaware signed the RGGI Memorandum of Understanding on December 20<sup>th</sup>, 2005. The state participates through its Department of Natural Resources and Environmental Control and its Public Service Commission.</p> <p>Senate Bill No.263 grants legal authority to Delaware to participate in RGGI, and the state's Regulation No. 1147 set out implementation rules for Delaware's RGGI cap-and-trade program.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 197

Country/Region	United States – Delaware	
Policy Type	Legislation	
Policy Name/Description	Senate Bill 19 (2007): Retail electricity suppliers must purchase 20% of the electricity sold in the state from renewable sources by 2019 (2.005% from solar by 2019)	
Date Announced	2008	
Target Date	2019	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 , Target 180, Target 184 and Target 245	
Supporting Policies: Mandates and Incentives	Federal Production and Investment tax credits; Regional Greenhouse Gas Initiative auction funds; state green energy fund; state grant program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>In 2005, Senate Bill 74 established a renewable portfolio standard (RPS) which requires retail electricity suppliers to purchase 10% of the electricity sold in the state from renewable sources by 2019. Senate Bill 19 of 2007 increased the RPS target to 20%, of which 2.005% must come from solar PV.</p> <p>Most of Delaware's renewable incentives come from the Green Energy Fund. The R&amp;D Grants and the Technology and Demonstration Grants programs allow companies to apply for grants to develop and test renewable power. With the passing of the federal Investment Tax Credit, many states responded by lowering direct grant percentages to residents and non-residential entities to allow greater participation for the same level of total subsidy. The state of Delaware continued to allow applications for 50% grants. In Delaware, this created a large over-subscription to the program. The state now has a rebate backlog of \$1.5 million for projects already installed.</p> <p>Beginning in compliance year 2010 and in each year afterward, the schedule will be reviewed and accelerated or decelerated as necessary. Suppliers must submit a report detailing compliance status annually. Suppliers failing to comply with the standard must pay into the Delaware Green energy Fund an Alternative Compliance Payment (ACP) of \$25 per MWh of shortfall. The ACP increases in subsequent years for suppliers who elect to pay it. The solar ACP was set at \$250 per MWh, and is set to increase to \$300 per MWh after the first year of use.</p> <p>According to the Energy Information Administration, 0.6% of Delaware's electricity generation came from renewables in 2007 (all hydro).</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 198

Country/Region	United States – Florida
<b>Policy Type</b>	Executive Order
<b>Policy Name/Description</b>	Executive Order 07-127: Reduce greenhouse gas emissions to 2000 levels by 2017 and 1990 levels by 2025; 80% reduction from 1990 levels by 2050.
<b>Date Announced</b>	July, 2007
<b>Target Date</b>	2017, 2025 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	State House Bill 7135; state clean car emission rule; state building energy code; state energy standards for public buildings; net metering; state solar and wind Access Law; federal vehicle emissions standard; proposed state vehicle emission standard; federal Energy Star homes program.
<b>Commentary</b>	<p>On July, 13<sup>th</sup>, 2007, Florida's Governor Charlie Crist issued Executive Order 07-127 which established statewide emission reduction targets for 2017, 2025, and 2050.</p> <p>A clear strategy with over 50 recommendations to meet the target is in place in the state Climate Action Plan. There is also a well-coordinated Action Team on Energy and Climate Change to oversee progress toward the target.</p> <p>In 2008, House Bill 7135 created the Florida Energy and Climate Commission within the Executive Office of the Governor to centralize energy and climate policy. It requires emitters to report emissions via the Climate Registry. And through the establishment of the Florida State Greenhouse Gas Reduction Scorecard, the state has begun to track greenhouse gas emissions from state-owned vehicles and facilities.</p> <p>A variety of policies are in place that will help Florida achieve its emissions reduction target, including the Florida clean car emission rule. Florida has also proposed adopting tough new standards for vehicle emissions. The new standards would lead to a 6% reduction in emissions from new cars and light trucks sold between 2013 to 2016.</p> <p>Florida has made funding available to support its emissions reduction plan. In January, 2008, Florida's Governor announced a \$200 million energy and economic development budget recommendation focusing on increasing energy efficiency, stimulating renewable development and using markets to reduce greenhouse gas emissions.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 199

Country/Region	United States – Hawaii
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Act 234: Reduce greenhouse gas emissions to 1990 levels by 2020 (25% reduction)
<b>Date Announced</b>	June, 2007
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	State Renewable Portfolio Standard (Target 200); state building energy code; state energy standards for public buildings; net metering; and federal Energy Star homes program.
<b>Commentary</b>	<p>In June, 2007, Hawaii's Governor approved House Bill 226 (HB226) establishing a Greenhouse Gas Emissions Reduction Task Force to prepare a work plan and regulatory regime to allow the state to achieve its emissions reduction target. The bill does not describe exactly how this will be achieved; rather it directs the administration to produce appropriate regulations to meet the emissions target.</p> <p>The Greenhouse Gas Emissions Task Force is comprised of representatives from the state government, from business, from academia, and from civil society. It is currently in the process of developing a plan for "maximum practically and technically feasible and cost-effective reductions in greenhouse gas emissions." The plan will be submitted to the Legislature in 2010, allowing 10 years for implementation.</p> <p>Emissions have grown by about 25% since 1990. In support of cutting its emissions by a quarter, Hawaii has a Renewable Portfolio Standard, which sets a goal of 40% of electricity from renewables by 2030. A feed-in tariff is in place to support this.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 200

Country/Region	United States – Hawaii	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	House Bill 1464: Utilities must source 10% of electricity from renewables by 2010, 15% by 2015, 25% by 2020 and 40% by 2030	
<b>Date Announced</b>	2001	
<b>Target Date</b>	2010, 2015, 2020 and 2030	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 , Target 180 and Target 199	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment tax credits; proposed state feed-in tariff; state grant program; state Clean Energy Initiative.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Hawaii established a renewable portfolio goal in 2001. This was later replaced with an enforceable standard in 2004 and amended again in 2006. The standard has been significantly expanded by legislation passed in 2009. HB 1464 increased the amount of renewable energy generation required by utilities to 40% by 2030.</p> <p>In January, 2008, the US Department of Energy and the State of Hawaii signed a Memorandum of Understanding establishing the Hawaii Clean Energy Initiative. This agreement established an aggressive goal to increase Hawaii's renewable and clean energy production capabilities, and to transition exclusively to renewable energy use on the smaller islands. Hawaii's Public Utilities Commission (PUC) has also proposed feed-in tariff legislation, establishing a 20-year, \$0.70 per kWh feed-in tariff for photovoltaic systems up to 20 MW in size. Hearings were heard in April, 2009 on the tariffs.</p> <p>A detailed plan has been released to implement the Hawaii Clean Energy Initiative with actions including a commitment to integrate 1,100 MW of additional renewable energy on the Hawaiian grids; the construction of an undersea cable connecting Maui, Moloki and Lanai into one electrical grid; and a prohibition on the construction of any new coal plant in Hawaii.</p> <p>An electric utility company and its electric utility affiliates may aggregate their renewable portfolios in order to achieve the renewable portfolio standard (i.e., the Hawaiian Electric Company and its affiliates – Maui Electric Company and Hawaii Electric Light Company – may add together their renewable energy numbers to meet the goal). The PUC has the authority to assess penalties if a supplier fails to comply with the standards.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 201

Country/Region	United States – Illinois
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	Reduce greenhouse gas emissions to 1990 levels by 2020 and 60% below 1990 levels by 2050.
<b>Date Announced</b>	February, 2007
<b>Target Date</b>	2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	40 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	State power sector standard (Target 202); state Renewable Portfolio Standard (Target 203); state energy efficiency standard; state building energy code; state energy standards for public buildings; federal Energy Star homes program.
<b>Commentary</b>	<p>In October, 2006, then-Illinois Governor Rod Blagojevich launched the state's Global Warming Initiative by signing an Executive Order that created the Illinois Climate Change Advisory Group (ICCAG), the first such effort by a Midwest state. As part of the Governor's Global Warming Initiative, Illinois joined New Mexico to become only the second state in the nation to join the Chicago Climate Exchange (CCX). As a CCX member, the state makes a voluntary, but legally binding, commitment to reduce GHG emissions from state buildings and vehicle fleets. In February, 2007, the statewide emission reduction target was formally announced by Governor Blagojevich.</p> <p>Illinois is a member of the Climate Registry, a voluntary North American greenhouse gas tracking system for businesses and governments to document their current levels of greenhouse gas emissions.</p> <p>Illinois has a binding renewable portfolio standard requiring utilities to source 25% of their power from wind and other renewable sources by 2025 and the Governor has also approved an energy efficiency standard requiring utilities to meet 2% of customer energy needs through energy savings by 2015.</p>



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 202

Country/Region	United States – Illinois	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Clean Coal Portfolio Standard Act: 50% reduction in CO <sub>2</sub> emissions from power plants between 2009-2015; 70% reduction in emissions for power plants from 2016-2017; 90% reduction in emissions for power plants built after 2017.	
<b>Date Announced</b>	January, 2009	
<b>Target Date</b>	2015 and 2017	
<b>CO<sub>2</sub> Abatement Potential</b>	45 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 179 , Target 180 and Target 201	
<b>Supporting Policies: Mandates and Incentives</b>	30-year purchase agreements guaranteed to one initial clean coal facility.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>From 2009-2015, new coal-fired stations must capture and store 50% of CO<sub>2</sub> emissions. For plants built in 2016-2017, 70% of CO<sub>2</sub> must be captured and stored. And after 2017, all new plants must capture and store 90% of CO<sub>2</sub>. In July, 2008, the Illinois House passed SB 1987, also known as the Clean Coal Portfolio Standard Act, which creates a framework for the development of coal gasification projects with carbon capture and storage. To qualify as a clean coal facility under the new legislation, a plant must capture at least 50 percent of its total CO<sub>2</sub> emissions, as well as limit regulated pollutants, such as sulfur dioxide, nitrogen oxides, carbon monoxide, particulates and mercury, to levels that are no higher than those of natural gas-fired plants.</p> <p>SB 1987 stipulates continuous monitoring for storage sites. Compliance with sequestration requirements and offset purchase requirements will be reviewed annually by an independent expert retained by the owner of the initial clean coal facility, with the advance written approval of the Attorney General.</p> <p>If utilities cannot demonstrate compliance, they must obtain offsets that are permanent, additional, verifiable, real, located within the state of Illinois, and legally and practically enforceable.</p> <p>Illinois has a history of being able to unlock significant action quickly. From 2006 to 2007 it increased its renewables capacity by about 250%. Exelon – a large Illinois electric and gas utility – has a plan in place to reduce, offset or displace over 15 MT of greenhouse gas emissions per year by 2020.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 203

Country/Region	United States – Illinois	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	10% of electricity generation from renewables by 2015; 25% of electricity generation from renewables by 2025 (with 75% of that from wind)	
<b>Date Announced</b>	May, 2007	
<b>Target Date</b>	2015 and 2025	
<b>CO<sub>2</sub> Abatement Potential</b>	Not applicable in 2012 and 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 , Target 180 and Target 201	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state bond program; state grant programs; state rebate programs; state public benefits fund; net metering.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In May, 2007, the Illinois House of Representatives passed its Renewable Portfolio Standard, requiring the state to buy 2% of its power from renewable sources by June, 2008, 10% by June, 2015 and 25% by June, 2025. In August, 2007, Illinois enacted legislation that created the Illinois Power Agency responsible for developing electricity procurement plans for investor-owned electric utilities. A detailed plan and schedule for compliance is in place.</p> <p>The Illinois legislature has developed an enhanced net metering bill for a broad range of renewable technologies, which may help spur renewable uptake further. However, HB 5855, which would have introduced a feed-in tariff for renewables, has not progressed in the state legislature since January, 2009. There are, however, a number of other incentive schemes in place, including a public benefits fund supporting renewable energy. The Renewable energy Resources Trust Fund supports renewables through grants, loans and other incentives administered by the Illinois Department of Commerce and Economic Opportunity. The state Finance Authority can also issue tax-exempt bonds and credit enhancements for eligible renewable projects.</p> <p>Illinois increased its renewable capacity by about 250% between 2006 and 2007. While it was growing from a small base, it was on track to meet the 2008 target by 2007.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 204

Country/Region	United States – Indiana	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	Senate Bill 420: 15% of electricity generation from renewable sources by 2025	
<b>Date Announced</b>	April, 2009	
<b>Target Date</b>	2025	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state grant program; net metering; proposed feed-in tariffs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The Indiana House is considering a bill that would require Indiana to source 15% of its electricity from renewable sources by 2025. The bill passed the Senate in February, 2009, and the House in April, 2009. However, the General Assembly failed to agree on compromise language by April 29<sup>th</sup>, 2009, which was the deadline for the law to take effect this year.</p> <p>There are currently no supporting feed-in tariffs in place to drive renewable deployment, although in January, 2009, an Advanced Renewable Energy Tariff Act was introduced into the Indiana General Assembly and has been referred to the Committee on Commerce, Energy, Technology and Utilities. As introduced in HB 1622, the feed-in tariffs proposed for Indiana are generously high. Until the feed-in tariff is approved, supporting policies remain unpredictable, although the requirement that generators contract with a utility to receive these tariffs adds a bureaucratic element to the program. There are some state rebate and grant programs in place to support renewable projects.</p> <p>State utilities would be required to report to the Public Utilities Commission on an annual basis, but the robustness of the arrangements are unknown given the lack of a track record or available monitoring documents.</p> <p>Penalties are proposed for non-compliance in the form of an "equalization fund" administered by the Public Utilities Commission, but it is unclear if the penalties will be sufficient</p> <p>According to the Energy Information Administration, Indiana currently produces less than 0.5% of its power from renewables, and it increased this amount negligibly from 2003 to 2007.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 205

Country/Region	United States – Kentucky	
<b>Policy Type</b>	Government aspiration	
<b>Policy Name/Description</b>	25% of total energy needs should be met through energy efficiency and conservation measures and renewable electricity by 2025.	
<b>Date Announced</b>	November, 2008	
<b>Target Date</b>	2025	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state rebate programs; state loan programs.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 3	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The 25x25 Action Plan complements Gov. Beshear's energy plan, "Intelligent Energy Choices for Kentucky's Future", which was publicly introduced in November, 2008. The plan recommends a Renewable and Efficiency Portfolio Standard (REPS) for Kentucky. The REPS proposes that by 2025, 25% of Kentucky's energy needs should be met by energy efficiency and renewable energy resources. The Action Plan is still in consultation.</p> <p>\$12 billion of annual funding will be required under the plan, but has not been appropriated. The target is not binding and there are no sanctions or fines for non-compliance.</p> <p>Kentucky has limited experience with climate targets, and has grown its renewable generation capacity negligibly 2003 and 2007</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 206

Country/Region	United States – Maine
Policy Type	Legislation
Policy Name/Description	Act to Provide Leadership in Addressing the Threat of Climate Change: 10% reduction in greenhouse gas emissions from 1990 levels by 2020; 75-80% below 2003 levels in the long-term.
Date Announced	June, 2003
Target Date	2020
CO <sub>2</sub> Abatement Potential	5 MT abatement in 2020
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	Cap-and-trade scheme under the Regional Greenhouse Gas Initiative (Target 184 and Target 207); state Renewable Portfolio Standards (Target 208 and Target 209); state energy conservation standards for buildings; state solar access law; federal Energy Star homes program.
Commentary	<p>Subsequent to the enactment of the Act to Provide Leadership in Addressing the Threat of Climate Change, the state of Maine developed an Action Plan with 54 actions to take to meet its emissions target. The state's Department of Environmental Protection is monitoring progress on a biannual basis and is also required by law to create an annual statewide greenhouse gas inventory.</p> <p>Maine is a member of the Regional Greenhouse Gas Initiative (RGGI). Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 207

Country/Region	United States – Maine
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under the Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standards (Target 208 and Target 209); state energy conservation standards for buildings; state solar access law; federal Energy Star homes program.
<b>Commentary</b>	<p>Maine's Governor signed the RGGI initiative in December, 2005, and the Maine Climate Action Plan developed in 2004 had identified participation in RGGI as one of the most important actions Maine could take to reduce greenhouse gas emissions.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 208

Country/Region	United States – Maine	
Policy Type	Legislation	
Policy Name/Description	10% of electricity generation from renewables by 2017	
Date Announced	2006/2007	
Target Date	2017	
CO <sub>2</sub> Abatement Potential	No impact on BAU in 2012 and 1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179, Target 180, Target 206 and Target 207	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state generation information system certificates; state grant program; state rebate program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>This goal is to drive rapid deployment of new renewable energy capacity in the state. Eligible new renewables include those placed into service after September 1, 2005.</p> <p>Municipal solid waste and CHP systems are not eligible under the new renewable goal, and hydro facilities must meet all state and federal fish passage requirements. The 2006 goal was converted to a mandatory standard through Public Law, chapter 403.</p> <p>The Public Utilities Commission has since designated this standard to be the Class 2 standard of the state and issued a near-term Class 1 standard. Maine has pending in the legislature an Act to Establish Renewable Resources Program, which consists of market-rate payments per kWh for electricity generated by renewables. With the Act in force:</p> <ul style="list-style-type: none"> <li>• Utilities would pay a set price for renewable power, regardless of the amount of power they generate;</li> <li>• The price would be locked in by long-term contracts;</li> <li>• The price would be reduced with each new starting year;</li> <li>• The price would be set independently from the retail rate.</li> </ul> <p>A system of NEPOOL Generation Information System certificates (Similar to RECs) is currently in place to satisfy the requirement.</p> <p>The current Alternative Compliance Payment rate is \$60.92 per MWh, which is one of the highest in the US.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 209

Country/Region	United States – Maine	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Achieve 2,000 MW of wind power capacity by 2015 and 3,000 MW by 2020	
<b>Date Announced</b>	February, 2008	
<b>Target Date</b>	2015 and 2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 206 and Target 207	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state generation information system certificates; state grant program; state rebate program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Maine's task force on Wind Power submitted a final report early in 2008 that shows that there is potential for at least 300 MW of the 2020 goal to be achieved with offshore wind projects. The report also highlighted that Maine has as much onshore wind resource as the rest of New England combined, and should therefore be a leader in wind power.</p> <p>As of January, 2009, Maine had met 5% of its 2015 goal with 103.5 MW of installed capacity. This could rise to 18% of the 2015 goal with the addition of 272.5 MW of wind projects currently in development stage and 34% of the target could be met if an additional 309.5 MW of wind projects currently in the discussion phase are constructed.</p> <p>Beginning in January, 2009, Efficiency Maine is offering rebates for small wind energy installations for Maine residents and businesses. Residents can qualify for rebates worth up to \$2,000 and businesses can qualify for rebates up to \$4,000. In addition, as part of a pilot program, projects that meet the highest standards for siting and height can qualify for an added \$2,000 benefit.</p> <p>Maine's wind targets seem ambitious based on historic growth rates.</p>	



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 210

Country/Region	United States – Maryland
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Greenhouse Gas Reduction Act of 2009: 25% reduction in greenhouse gas emissions from 2006 levels by 2020
<b>Date Announced</b>	March, 2009
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	25 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under the Regional Greenhouse Gas Initiative (Target 184 and Target 211); state Renewable Portfolio Standard (Target 212); state clean cars act; Empower Maryland; state appliance efficiency standards; state building energy code; federal Energy Star homes program.
<b>Commentary</b>	<p>The Greenhouse Gas Reduction Act of 2009 requires the state to reduce greenhouse gas emissions 25% from 2006 levels by 2020. By 2011, the Department of Environment must: Develop a 2006 Statewide greenhouse gas emissions inventory; develop a projected business-as-usual emissions inventory for 2020; and develop and publish for public comment a proposed plan to achieve the emissions reduction.</p> <p>A final greenhouse gas emission reduction plan must be adopted by 2012. The plan must include regulations implementing all plan measures for which state agencies have existing statutory authority and a timeline for seeking any additional legislative authority necessary to fully implement the plan.</p> <p>Developing the plan may be difficult, in light of restrictions included in the newly-signed act. In the absence of new federal laws or regulations for reducing greenhouse gas emissions, the act prohibits state agencies from requiring the state's manufacturing sector to reduce their greenhouse gas emissions. State agencies are also prohibited from implementing policies that would cause a significant increase in costs for the state's manufacturing sector.</p> <p>Maryland has an existing Climate Action Plan in place drawn up by the Climate Change Commission, which details 42 options to reduce greenhouse gas emissions.</p> <p>Recent state initiatives, including membership of the RGGI cap-and-trade program, Clean Cars Act, and Empower Maryland have put the state on track to reduce emissions by 12.5%.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 211

Country/Region	United States – Maryland
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	April, 2007
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under the Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standard (Target 212); state clean cars act; Empower Maryland; state appliance efficiency standards; state building energy code; federal Energy Star homes program.
<b>Commentary</b>	<p>Maryland's Governor signed the RGGI scheme on April, 20<sup>th</sup>, 2007, making it the 10<sup>th</sup> state to sign the initiative.</p> <p>The state is in the process of developing a new plan for meeting emission reductions and this is expected to be ready in 2011. The state has an existing Climate Action Plan in place drawn up by the Climate Change Commission, which details 42 options to reduce greenhouse gas emissions.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 212

Country/Region	United States - Maryland	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Senate Bill 595: Provide 1% of retail sales from Tier 1 renewables and 2.5% from Tier 2 in 2006, gradually increasing to reach a level of 20% from Tier 1 in 2022 and 2.5% from Tier 2 by 2018.	
<b>Date Announced</b>	2004, revised in 2008 and 2009	
<b>Target Date</b>	2018 and 2022	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 184, Target 210 and Target 211	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state grant program; state rebate program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The plan has been revised three times in the last 5 years, resulting in significant uncertainty.</p> <p>Compliance with the target is demonstrated through Renewable Energy Credits (RECs). A REC has a three-year life during which it may be transferred, sold, or otherwise redeemed. Initially, RECs generated within the PJM region (Mid-Atlantic region power pool), in states adjacent to PJM, or delivered into PJM were eligible to be counted towards RPS compliance. This provision was changed in 2008 by H.B. 375 (effective 2011) to remove PJM-adjacent states from the geographic eligibility list. An electricity supplier that fails to meet the standard initially needed to make a payment into the Maryland Renewable Energy Fund. Payment rates vary depending on the tier shortfall, ranging from 0.2 cents per k/Wh to 45 cents per k/Wh. However, the Maryland Renewable Energy Fund was repealed in 2008, leading to uncertainty. It was replaced by a Strategic Energy Investment Fund.</p> <p>Payments into the fund will be used for grant and loan programs for Tier 1 renewable energy resources. Compliance fees for the solar obligation may only be used to support new solar resources in the state.</p> <p>In 2007, Maryland produced 4.5% percent of its electricity from renewables, surpassing the requirement according to the Energy Information Administration. However, the Clean Energy States Alliance reported in December, 2008, that Maryland has yet to site a large utility-scale renewable energy project despite enactment of the Renewable Portfolio Standard.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 213

Country/Region	United States – Massachusetts
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Massachusetts Global Warming Solutions Act: 10-25% reduction in greenhouse gas emissions below 1990 levels by 2020; 75-85% below 1990 levels in the long-term.
<b>Date Announced</b>	2008
<b>Target Date</b>	2020 onwards
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under the Regional Greenhouse Gas Initiative (Target 184 and Target 214); state Renewable Portfolio Standards (Target 215); Biofuels Act, 2008; state appliance efficiency standards; state green building strategy; net metering; federal Energy Star Homes Program.
<b>Commentary</b>	<p>The Global Warming Solutions Act was passed in the summer of 2008, setting long-term statewide greenhouse gas emissions reduction targets of 10-25% by 2020 and 80% by 2050. As part of the act, the Executive Office of Energy and Environmental Affairs has been instructed to produce a plan every 5 years for emissions reductions, compliance mechanisms, and appropriate incentives.</p> <p>A climate roadmap is to be published as a blueprint to ensure reductions happen.</p> <p>Massachusetts has developed a number of policies to support its emissions reduction target, including a state renewable portfolio standard, participation in the RGGI cap-and-trade scheme, appliance efficiency standards, a green building code, and a Biofuels Act that will come into force in 2010. The Biofuels Act will stipulate a minimum percentage of biofuels and bioheat in the Massachusetts energy mix.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 214

Country/Region	United States – Massachusetts
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	January, 2007
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under the Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standards (Target 215); Biofuels Act, 2008; state appliance efficiency standards; state green building strategy; net metering; federal Energy Star Homes Program.
<b>Commentary</b>	<p>Massachusetts Governor Deval Patrick signed the RGGI cap-and-trade scheme in January, 2007, committing the state to a regional effort to reduce greenhouse gas emissions in the power sector.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 215

Country/Region	United States – Massachusetts	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	15% of electricity retail sales from renewable sources by 2020 and an additional 1% of sales from renewable sources each year thereafter.	
<b>Date Announced</b>	1997, revised June, 2008	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 184, Target 213 and Target 214	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state solar rebate program; state loan program; state public benefit fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>The target gradually steps up from 1% in 2003 to 15% by 2020, with an additional 1% each year thereafter with no stated expiration date. Great detail is given on how to achieve the target, although the plan has had a mixed history of achievement, calling into question the realism of some provisions.</p> <p>In January, 2009, the Massachusetts Department of Energy Resources (DOER) released regulations expanding support for renewable energy and alternative energy technologies. The state has expanded the existing rebate program for solar power to meet its short term goal of 27 MW by 2011.</p> <p>Massachusetts Retail Electricity Suppliers' must submit Compliance Filings by July 1<sup>st</sup> of each year demonstrating that they met their RPS obligations for the previous calendar year. Regulations also require the DOER to issue an Annual Energy Resource Report summarizing information from Compliance Filings.</p> <p>Any retail electricity supplier that is required by the state renewable standard regulations to comply with those regulations may, if necessary, choose to discharge some or all of its obligations by making an Alternative Compliance Payment (ACP) in the appropriate amount to the Massachusetts Technology Park Corporation. The ACP rate for the 2008 RPS Compliance Year is \$58.58 per MWh. The MTC will provide a receipt for each ACP payment, and copies of the receipts would be included by the retail electricity supplier with its Annual Compliance Filing.</p> <p>While in 2007, Massachusetts overachieved its target, in each of the previous four years, it underperformed.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 216

Country/Region	United States – Michigan	
Policy Type	Legislation	
Policy Name/Description	Senate Bill 213: 10% of electricity generation from all utilities from renewable sources by 2015	
Date Announced	October, 2008	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state feed-in tariff; state rebate program; state loan program; state public benefit fund; state tax credits; net metering.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	1	
Supporting Commentary	<p>Each utility has a unique annual obligation based on its existing renewable energy portfolio and a robust trajectory to 10% renewable electricity by 2015. Utilities are responsible for filing a proposed renewable energy plan with the Michigan Public Service Commission (PSC). Significant detail is provided on what the plan should include.</p> <p>The bill includes an income tax credit to offset a portion of ratepayers' investments in renewable energy for Michigan and a net metering law that allows customers to sell renewable electricity they produce at their homes or businesses to their utility companies. Michigan also has feed-in tariffs. Wind is eligible for a sliding scale of payments that start at \$0.105/kWh for systems producing 700 kWh/m<sup>2</sup>/year of rotor swept area and progress down to \$0.08/kWh for systems producing 1,100 kWh/m<sup>2</sup>/year. The standard allows utilities to use energy optimization and advanced clean energy systems to meet a limited portion of the requirement.</p> <p>Compliance with the standard can be met by purchasing Renewable Energy Credits (RECs) with or without the associated renewable energy. The bill provides triple credits for power generated by solar power systems and partial extra credits for renewable power generated from equipment manufactured in Michigan or from systems constructed by a Michigan workforce, as well as for renewable power generated at peak times or generated at off-peak times but stored and provided to the grid at peak times.</p> <p>While Michigan's installed renewable capacity has grown slowly historically, this relatively new target may change that.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 217

Country/Region	United States – Michigan	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Natural gas utilities must improve efficiency by 0.5% per year by 2011; electricity providers must improve efficiency by 0.75% per year by 2011.	
<b>Date Announced</b>	October, 2008	
<b>Target Date</b>	2011	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Shareholder incentives; state energy efficiency grants; state public benefits fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>A multi-year phase-in of these efficiency measures has been developed under the Renewable Sources Act of 2008, including methods of cost recovery and limits on cost.</p> <p>The standard allows for “shareholder incentives” for utilities that exceed energy savings requirements. One company has already filed plans to establish a major energy efficiency program to meet the state’s goals.</p> <p>Authority for implementation has been granted to the Michigan Public Service Commission. While the Public Service Commission is granted wide-ranging authority to supervise implementation, the level of penalties for non-compliance, and the robustness with which they will be enforced, remains to be seen, as this target is early in implementation.</p>	



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 218

Country/Region	United States – Minnesota
Policy Type	Legislation
Policy Name/Description	Next Generation Energy Act of 2007: 15% reduction in greenhouse gas emissions below 2005 levels by 2015; 30% reduction by 2025; 80% reduction by 2050.
Date Announced	May, 25 <sup>th</sup> , 2007
Target Date	2015, 2025 and 2050
CO <sub>2</sub> Abatement Potential	25 MT of abatement in 2020
Policy Category	Emissions target: No carbon price
Supporting Policies: Mandates and Incentives	State Renewable Portfolio Standard (Target 219); state building energy code; state solar and wind access law; state conservation improvement program; net metering; federal Energy Star homes program.
Commentary	<p>The Next Generation Energy Act of 2007, signed by Minnesota's Governor Tim Pawlenty on May, 25<sup>th</sup>, 2007, outlines the goals for statewide greenhouse gas emissions reductions. A detailed Climate Action Plan is in place along with a dedicated Climate Change Advisory Board for Minnesota.</p> <p>The Climate Change Advisory Board includes representatives from local government, business, academia, and civil society. In the Climate Action Plan they developed, they recommend 46 policy actions to reduce greenhouse gas emissions.</p> <p>In a January, 2009, a progress report submitted to the Minnesota Legislature by the state's Department of Commerce stated that greenhouse gas emissions reached a peak in the state in 2005, at 154MT CO<sub>2</sub>e and are starting to decline. It is likely that emissions will continue to decline thanks to actions including Minnesota's Conservation Improvement Program, the state's Renewable Portfolio Standard and membership of the Midwestern Regional Greenhouse Gas Reduction Accord.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 219

Country/Region	United States – Minnesota	
Policy Type	Legislation	
Policy Name/Description	Senate Bill 4: 25% of utility electricity generation from renewable sources by 2025 (30% by 2020 for Xcel)	
Date Announced	2002	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	10 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179, Target 180 and Target 218	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; proposed state feed-in tariff; state renewable development fund; state rebate and grant programs.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	1	
Supporting Commentary	<p>Minnesota enacted legislation (SF 4) in February, 2007, that created a Renewable Portfolio Standard (RPS) for Xcel Energy and created a separate RPS for other electric utilities.</p> <p>Minnesota's RPS is similar in structure to Michigan's, although there are no rates for geothermal power included and small wind power is limited to a system with 1,000 square feet of swept area or less, reducing the potential of the bill to encourage deployment.</p> <p>Renewable energy credits are used for compliance, with a modest non-compliance penalty in place. The state referred a feed-in tariff policy to its Committee on Finance in February, 2008, for review. The Public Utility Commission (PUC) is in charge of implementation, and has engaged with stakeholders regularly to discuss achievement. Utilities are required to file annual compliance reports with the PUC. If the PUC finds a utility is noncompliant, it may order the utility to construct facilities, purchase eligible renewable electricity, purchase RECs or engage in other activities to achieve compliance. If a utility fails to comply, the PUC may impose a financial penalty on the utility in an amount not to exceed the estimated cost of achieving compliance. The penalty may not exceed the lesser of the cost of constructing facilities or purchasing credits, and proceeds must be deposited into a special account reserved for energy and conservation improvements.</p> <p>Between 2003 and 2007, the state's renewable capacity grew by 88%. In 2007, the summer renewable capacity had grown to 12.9%.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 220

Country/Region	United States – Missouri	
Policy Type	Legislation	
Policy Name/Description	Missouri Clean Energy Initiative (Senate Bill 54): 15% of electricity generation must come from renewables by 2021. There are incremental targets between now and 2021, including a 3% target by 2012, 7% by 2015 and 10% by 2020.	
Date Announced	November, 2008	
Target Date	2012, 2015, 2020 and 2021	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state solar power rebates and tax credits; state energy loan program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 1	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>Missouri's plans were passed as part of "Proposition C", a voter initiative that repealed the previous voluntary standard in 2008. Much of the detail of the program was left to be worked out by the Public Services Commission and the Department of Natural Resources.</p> <p>Utilities are expected to make a "good faith effort" to meet the target. Utilities that fall short of the requirement have to pay twice the going rate of the renewable energy credits (RECs) needed for compliance, and the state will use that money to buy RECs and to support renewable energy and energy efficiency. To limit the impact of the measure on consumers, the cost impact of complying with the renewable energy requirement is capped at a 1 percent cost increase.</p> <p>Solar power rebates and tax credits are in place, but Missouri's renewable policy has been characterized by volatility. Missouri also has an Energy Loan Program through which schools and local governments can get very low interest loans to purchase solar power equipment.</p>	

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 221

Country/Region	United States – Montana
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Western Climate Initiative (WCI): 15% reduction in greenhouse gas emissions below 2005 levels by 2020
<b>Date Announced</b>	November, 19 <sup>th</sup> , 2007
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 185
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Western Climate Initiative (WCI); state Renewable Portfolio Standard (Target 222)
<b>Commentary</b>	<p>Montana signed the Western Climate Initiative agreement on November, 19<sup>th</sup>, 2007, becoming the 7<sup>th</sup> US state to do so. In the Initiative's Memorandum of Understanding, WCI members agreed to jointly set a regional emissions target and establish a market-based system to aid in meeting the target.</p> <p>The Western Climate Initiative builds upon the West Coast Governor's Global Warming Initiative of 2003, which California signed with Oregon and Washington. The program will be implemented in two phases. Beginning on January 1<sup>st</sup>, 2012, emissions from electricity generation and large industrial and commercial sources will be covered. In the second phase, beginning in January, 2015, the program will expand to cover emissions from transportation and residential, commercial, and industrial fuel use not otherwise covered.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 222

Country/Region	United States – Montana	
Policy Type	Legislation	
Policy Name/Description	Montana Renewable Power Production and Rural Economic Development Act: 5% of retail electricity sales from eligible renewables for 2008-2009, 10% for 2010-2014, and 15% for 2015 and each year thereafter.	
Date Announced	April, 2005	
Target Date	2009, 2014 and 2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2012	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179, Target 180, Target 185 and Target 221	
Supporting Policies: Mandates and Incentives	Federal Production and Investment tax credits; Montana loan program; Montana grant program; Net Metering; Public Benefits Fund.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>Montana's renewable portfolio standard (RPS), enacted in April, 2005, as part of the Montana Renewable Power Production and Rural Economic Development Act (Senate Bill 415), includes specific procurement requirements to stimulate rural economic development. The RPS includes provisions for community renewable energy projects, defined as renewable energy projects under 25 megawatts (MW) where local owners have a controlling interest.</p> <p>For compliance year 2011 through compliance year 2014, public utilities must purchase both the Renewable Energy Credits (RECs) and the electricity output from community renewable energy projects totaling at least 50 MW in nameplate capacity. For compliance year 2015 and each following year, utilities must purchase both the RECs and the electricity output from community renewable energy projects totaling at least 75 MW in nameplate capacity. In addition, public utilities must enter into contracts that include a preference for Montana workers. A renewable energy tracking system is called for within the bill and leaves the option open to trade renewable credits outside of the state.</p> <p>The Public Utilities Commission is responsible for assessing a penalty of \$10/MWh for non-compliance.</p> <p>In 2007, 51.3% of Montana's summer electricity capacity was renewable, but only 3.5% of that total fell under qualifying renewable categories in the new legislation.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 223

Country/Region	United States – Nevada	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Gibbons' Law (SB 395): 20% of electricity from renewable sources by 2015; 25% by 2025.	
<b>Date Announced</b>	1999; revised June, 2009	
<b>Target Date</b>	2015 and 2025	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state rebate program; state tax abatements; state Temporary Renewable Energy Development Program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>Gibbons' SB 395 was signed into law in June, 2009. Gibbons law is part of a package of measures aimed at transforming Nevada into a renewable energy exporter. The law also: extends sales and property tax abatements for wholesale renewable energy projects in the state above 10 MW in size; establishes rebates for 2 MW of solar at schools; establishes a more efficient 30 day application approval process for the state's Solar Generations program; and requires that 6% of the Renewable Portfolio Standard (RPS) come from solar resources beginning 2016.</p> <p>Nevada has developed a detailed plan with a series of interim targets to meet the RPS. A wide range of underlying initiatives accompany the plan. To help spur renewable projects, Nevada's Public Utilities Commission (PUC) established the Temporary Renewable Energy Development (TRED) Program, which ensures prompt payment to renewable energy providers.</p> <p>The PUC has also established a program to allow energy providers to buy and sell portfolio energy credits (PECs) in order to meet energy portfolio requirements. One PEC represents one kilowatt-hour (kWh) of electricity generated by a portfolio energy system, with the exception of photovoltaics (PV), for which 2.4 PECs are credited per one actual kWh of electricity produced. A generator that fails to comply with the RPS is required to provide a detailed explanation of its noncompliance, including any information that would support its exemption from fines or other administrative action.</p> <p>As of 2007, Nevada generated 10.1% of its electricity generation from renewable sources, according to the Energy Information Administration.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 224

Country/Region	United States – New Hampshire
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	Reduce greenhouse gas emissions to 1990 levels by 2010; 10% below 1990 levels by 2020; 75-85% below 2005 levels by 2050.
<b>Date Announced</b>	March, 2009
<b>Target Date</b>	2010, 2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (Target 184 and Target 225); state Renewable Portfolio Standard (Target 226); state building codes; federal Energy Star homes program.
<b>Commentary</b>	<p>The New Hampshire Governor's Climate Change Task Force released its final plan to reduce greenhouse gas emissions and increase renewable energy use in the state in March, 2009. The plan sets out a systematic approach to achieving this goal. It includes 67 different recommendations with the long term goal of achieving an 80% reduction in greenhouse gas emissions below 1990 levels by the year 2050.</p> <p>There is a designated Climate Task Force with roles defined to implement the target. Among the recommendations, the plan calls for a maximization of energy efficiency in buildings, an increase in renewable and low carbon-emitting sources of energy, and a reduction in vehicle emissions through state actions.</p> <p>New Hampshire has a number of policies in place to help achieve its emissions target, including a state renewable portfolio standard, involvement in the Regional Greenhouse Gas Initiative (RGGI) cap-and-trade scheme, and state building codes and energy standards. Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 225

Country/Region	United States – New Hampshire
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standard (Target 226); state building codes; federal Energy Star homes program.
<b>Commentary</b>	<p>The Governor of New Hampshire signed the RGGI initiative on December 20<sup>th</sup>, 2005. There is a designated Climate Task Force with roles defined to implement actions to reduce greenhouse gas emissions in the state.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 226

Country/Region	United States – New Hampshire	
Policy Type	Legislation	
Policy Name/Description	23.8% of electricity from renewable sources by 2025	
Date Announced	May, 2007	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179, Target 180, Target 184, Target 224 and Target 225	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state rebate program; state Climate Action Plan.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>The New Hampshire Renewable Portfolio Standard (RPS) was enacted in May, 2007. Under the standard, the legislature established 4 classes of renewable electricity, which together include wind, geothermal, biomass, ocean thermal, wave, solar, methane gas and hydroelectric power. There is a compliance schedule that electric suppliers must meet every year through 2025.</p> <p>In March, 2009 New Hampshire unveiled a detailed Climate Action Plan, which contains 67 detailed recommendations. The state's action plan identifies a wide range of potential financing mechanisms for climate change action, but the level of funding appropriated against these to date is unclear.</p> <p>The New Hampshire Public Utilities Commission (PUC) has established a Renewable Energy Certificate (REC) program utilizing the regional Generation Information System (GIS) of energy certificates administered by ISO-New England and the New England Power Pool (NEPOOL). RECs from customer-sited sources are assigned to the system owner, and behind-the-meter generation located in New Hampshire is eligible to participate.</p> <p>Compliance reports are due to the PUC by July 1<sup>st</sup> of each year from each electricity provider. In lieu of meeting the portfolio requirements, an electricity provider may make payments to a new renewable energy fund established by this law to support renewable energy initiatives.</p> <p>In 2007, 10.3% of power came from renewable sources in the state according to the Energy Information Administration, with 4.8% of this from non-hydro resources.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 227

Country/Region	United States – New Jersey
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Reduce greenhouse gas emissions to 1990 levels by 2020; 80% reduction from 2006 levels by 2050.
<b>Date Announced</b>	2007
<b>Target Date</b>	2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	20 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (Target 184 and Target 228); state Renewable Portfolio Standard (Target 229); state appliance efficiency standards; state building codes; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>New Jersey has developed a robust integrated plan for meeting its emissions reduction target, charging the Department of Environmental Protection, the Board of Public Utilities, the Department of Transportation and Department of Community Affairs to evaluate methods to achieve – and even overachieve – 2020 target reductions. This evaluation has been conducted in conjunction with the state's energy master plan.</p> <p>The Department of Environmental Protection has developed a greenhouse gas emissions inventory as well as a system for monitoring emissions levels so progress is accurately tracked. The Department reports progress at least every two years. The Department of Environmental Protection is also charged with recommending actions if it appears that the state will fall behind target</p> <p>A variety of robust policies have been put in place to allow New Jersey to meet its emissions reduction target, including one of the most robust state Renewable Portfolio Standard regimes in the United States. New Jersey is also a signatory to the RGGI cap-and-trade scheme. Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 228

Country/Region	United States – New Jersey
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standard (Target 229); state appliance efficiency standards; state building codes; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>New Jersey's Governor signed the RGGI initiative in December, 2005. RGGI is part of the state's broader strategy, which has been developed and is being implemented by the Department of Environmental Protection, the Board of Public Utilities, the Department of Transportation and Department of Community Affairs.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 229

Country/Region	United States – New Jersey	
Policy Type	Legislation	
Policy Name/Description	22.5% electricity from renewables by 2020 (2.12% from solar; 17.88% from other Class I renewables; 2.5% from Class II or additional Class I renewables)	
Date Announced	September, 2001, revised 2007.	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	15 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179, Target 180, Target 184, Target 227 and Target 228	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state rebate program; state tax exemptions.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>New Jersey's renewable portfolio standard – one of the most aggressive in the United States – has developed a robust integrated plan with annual renewable targets for three different classes of renewables. Eligible renewables include: solar thermal, solar PV, landfill gas, wind, biomass, hydroelectric, geothermal, resource-recovery facilities approved by the Department of Environmental Protection, anaerobic digestion, tidal, wave, and fuel cells using renewable fuels.</p> <p>A variety of incentives have been developed to encourage scale-up, including Renewable Energy Certificates (RECs), tax exemptions and tax credits. RECs must be turned over to the Board of Public Utilities (BPU) annually to prove compliance.</p> <p>New Jersey's renewable standard has tough penalties for non-compliance, especially for solar. If a supplier/provider is not in compliance for a reporting year, the supplier/provider must remit an Alternative Compliance Payment and/or a Solar Alternative Compliance Payment for the amount of RECs and solar RECs that were required but not submitted.</p> <p>Each supplier/provider is required to file a report with the BPU by September 1<sup>st</sup> of each year demonstrating that the requirements for the preceding reporting year (ending May 31 of the same calendar year) have been met. Failure to comply with any provision of the RPS may result in suspension of the supplier's license, financial penalties, disallowance of recovery of costs in rates, and/or a prohibition on accepting new customers.</p> <p>New Jersey has achieved its interim targets to date.</p>	

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 230

Country/Region	United States – New Mexico
<b>Policy Type</b>	Executive Order
<b>Policy Name/Description</b>	Executive Order 05-033: Reduce greenhouse gas emissions to 2000 levels by 2012; 10% reduction in greenhouse gas emissions from 2000 levels by 2020; 75% below 2000 levels by 2050.
<b>Date Announced</b>	June, 2005
<b>Target Date</b>	2012, 2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	60 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Western Climate Initiative (WCI); state Renewable Portfolio Standard (Target 231); state building code; net metering; federal Energy Star Homes Program.
<b>Commentary</b>	<p>New Mexico's Governor Bill Richardson signed Executive Order 05-033 in June, 2005, spelling out emissions reduction strategies to address climate change in the state.</p> <p>New Mexico has a mandatory emission reporting requirement and is a signatory of the Climate Registry and the WCI cap-and-trade scheme.</p> <p>In March, 2009, the Governor announced that the state will receive \$20 million for energy efficiency and conservation projects as part of the American Recovery and Reinvestment Act of 2009.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 231

Country/Region	United States – New Mexico	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Senate Bill 418: 10% of electricity to be derived from renewables by 2011; 15% by 2015 and 20% by 2020	
<b>Date Announced</b>	March, 2007	
<b>Target Date</b>	2011; 2015 and 2020	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2012	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180 and Target 230	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state tax credits; state rebate program; state Solar Market Development Income Tax Credit; state Solar Rights Act.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In March, 2007, New Mexico passed SB 418 directing investor-owned utilities to generate 20% of total retail sales from renewables by 2020 with interim targets of 10% by 2011 and 15% by 2015. In August 2007, the Public Regulation Commission (PRC) issued an order and rules requiring that the target be met through a "fully diversified renewable energy portfolio" which is defined as a minimum of 20% solar power, 20% wind power, and 10% from either biomass or geothermal energy. Additionally, 1.5% must come from distributed renewables by 2011, rising to 3% in 2015.</p> <p>Supporting policies in place include: energy tax credits, renewable energy production tax credits, and sustainable building tax credits. The Solar Market Development Income Tax Credit, passed in 2006, provides a 30% income tax credit with a cap at \$9000. The Solar Rights Act, passed in 2007, prohibits home owners associations and municipalities from passing codes to prohibit installation of solar panels. SB 994 offers a 6% tax credit to companies building solar thermal plants capped at \$60 million and SB 463 gives a 5% tax credit to companies producing renewable energy systems. Compliance is demonstrated through the use of renewable-energy certificates (RECs).</p> <p>Governor Bill Richardson and the New Mexico Office of Recovery and Reinvestment have announced that a portion of the \$37 million of funding from the U.S. Department of Energy through the American Recovery and Reinvestment Act will be used to support achieving renewable targets.</p> <p>Renewable capacity doubled between 2003 and 2007, and stood at 8.1% of summer capacity in 2007.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 232

Country/Region	United States – New York
<b>Policy Type</b>	Executive Order
<b>Policy Name/Description</b>	State Energy Plan: 5% reduction in greenhouse gas emissions from 1990 levels by 2010; 10% reduction by 2020; and 80% reduction by 2050.
<b>Date Announced</b>	June, 2002 and August, 2009
<b>Target Date</b>	2012 and 2020
<b>CO<sub>2</sub> Abatement Potential</b>	50 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (Target 184, Target 233); New York Renewable Portfolio Standard (Target 234, Target 235); state appliance efficiency standards; state building code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>In June, 2002, the State Energy Planning Board released the 2002 State Energy Plan and Final Environmental Impact Statement, which established goals to reduce statewide emissions to 5% below 1990 levels by 2010 and 10% below 1990 levels by 2020. The plan was seen as a blueprint to inform energy decision making.</p> <p>In June, 2008, New York state began a new energy planning process and on August, 10<sup>th</sup>, 2009, released the Draft 2009 New York State Energy Plan. It details greenhouse gas inventories and forecasts for the state and sets out assessments on renewable energy, energy efficiency and energy demand. It also sets out the long-term target of 80% reduction in greenhouse gas emissions by 2050.</p> <p>A variety of robust supporting policies are in place, including state renewable portfolio standards, vehicle efficiency standards, other efficiency standards, and the implications of membership in the Regional Greenhouse Gas Initiative (RGGI) cap-and-trade scheme. Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 233

Country/Region	United States – New York
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standard (Target 234 and Target 235); state appliance efficiency standards; state building code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>Then-New York Governor George Pataki signed the RGGI initiative on December, 20<sup>th</sup>, 2005.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 234

Country/Region	United States – New York	
Policy Type	Legislation	
Policy Name/Description	25% of electricity generation from renewable sources by 2013	
Date Announced	September, 2004	
Target Date	2013	
CO <sub>2</sub> Abatement Potential	20 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 , Target 180, Target 184, Target 232 and Target 233	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state tax credits; state rebate program; state Renewable Portfolio Standard Fund; proposed “on-bill financing”.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
Overall Risk Assessment	2	
Supporting Commentary	<p>New York’s Renewable Portfolio Standard (RPS), which became law in September, 2004, identifies two tiers of eligible resources: Main Tier resources, and Customer-Sited Tier resources. Main Tier resources include methane digesters and other forms of biomass, liquid biofuels, fuel cells, hydroelectric power, solar PV, ocean, tidal, and wind power. Customer sited resources include fuel cells, solar PV, wind, and methane digesters. These resources are generally limited in capacity to the size of the load at the customer’s meter.</p> <p>The New York State Energy Research and Development Authority (NYSERDA) centrally procure long-term Renewable Energy Certificate (REC) contracts on behalf of utilities to meet the RPS. NYSEDA also manages a RPS fund gathered through a surcharge on each on each kilowatt-hour sold by the state’s investor-owned utilities.</p> <p>NYSERDA is responsible for implementation of most (24% of the 25%) of the goal. The rest is expected to come from individuals and businesses that choose to pay a premium on their electricity bill to support renewable energy.</p> <p>As of June, 2008, NYSEDA completed 4 competitive Main Tier solicitations resulting in 30 large-scale electricity generators participating in the RPS. As of that year, New York had the highest amount of installed renewable generation capacity in the Northeast. In May, 2009 the state announced that it would build 100 MW of solar PV power at public and private facilities to help meet the target, with construction starting in 2010. However, a January, 2009 NYSEDA report indicated that currently approved funding levels may be inadequate to meet the 2013 target.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 235

Country/Region	United States – New York	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	45% of electricity generation from renewable sources and efficiency by 2015	
<b>Date Announced</b>	September, 2004	
<b>Target Date</b>	2015	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 184, Target 232 and Target 233	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; Regional Greenhouse Gas Initiative auction proceeds; state tax credits; state rebate program; state Renewable Portfolio Standard Fund; proposed “on-bill financing”.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>This proposed target is known as the 45-by-15 program, and is seen as one of the nation’s most important energy efficiency and renewable energy initiatives. The state has developed a detailed set of initiatives to meet the target, and has modeled these plans.</p> <p>Governor David Paterson has proposed innovative financing mechanisms to meet the target. This includes “on-bill financing,” which is now being discussed in proceedings before the State Public Service Commission. The intention of the proposals is to help New Yorkers retrofit their homes and businesses and invest in energy efficiency and renewable energy.</p> <p>As of 2008, New York had the highest amount of installed renewable generation capacity in the Northeast.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 236

Country/Region	United States – North Carolina	
Policy Type	Legislation	
Policy Name/Description	SB 3: 10% of retail sales for electric cooperatives and municipal utilities from renewable sources by 2018; 12.5% of retail sales for investor-owned utilities from renewable sources by 2021.	
Date Announced	August, 20 <sup>th</sup> , 2007	
Target Date	2021	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment tax credits; North Carolina rebate program; North Carolina grant program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>On August 20<sup>th</sup>, 2007, SB 3 was signed into law, establishing North Carolina's Renewable Energy and Efficiency Portfolio Standard. Municipal utilities and electric cooperatives must meet a target of 10% renewables by 2018. Investor-owned utilities must meet a target of 12.5% renewables by 2021. 25% of both targets can be met through efficiency, rising to 40% after 2021. There are a number of interim targets leading up to the final targets in 2018 and 2021.</p> <p>Compliance can be met though generating electric power at a renewable facility, reducing energy consumption through implementation of an energy efficiency measure, purchasing electric power from a new renewable facility, or purchasing Renewable Energy Certificates (RECs) derived from in-state or out-of-state new renewable facilities. RECs cannot be used to meet more than 25% of the requirement. There are no specified penalties for non-compliance, which may make enforcement of the target difficult.</p> <p>North Carolina has a number of tax credits and production incentives in place. There is also a state grant and rebate program to encourage development of renewable electricity.</p> <p>In 2006 3.6% of North Carolina's electricity came from renewable sources according to the Energy Information Administration. The majority of this was from hydropower and wood/waste.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 237

Country/Region	United States – North Dakota	
<b>Policy Type</b>	Voluntary	
<b>Policy Name/Description</b>	HB 1506: 10% of electricity generation from renewable and recycled sources by 2015	
<b>Date Announced</b>	August, 20 <sup>th</sup> , 2007	
<b>Target Date</b>	2015	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state grant program state tax credits; net metering.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In March 2007, North Dakota enacted legislation (HB 1506) that set a goal that 10% of all retail electricity sold in the state be obtained from renewable energy and recycled energy by 2015.</p> <p>While ground rules have been established for what does and does not count as part of the target, the level of analysis conducted to formulate the plan is unclear.</p> <p>There are a number of incentives for renewable energy in place, including a tax credit against the state income tax for 15% of the purchase and installation cost of alternate energy systems, property tax exemptions for wind and solar systems, and a sales tax exemption for wind facilities. Net metering is also in place as a key enabler of renewable deployment.</p> <p>The North Dakota State Energy Program oversees the renewable target. The first compliance year for the target is 2015, and, as the standard is voluntary, a deterrent for non-compliance does not exist.</p> <p>In 2007, 6.2% of state generation came from renewables, according to the Energy Information Administration.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 238

Country/Region	United States – Ohio	
Policy Type	Legislation	
Policy Name/Description	SB 221: 25% of electricity from alternative energy resources by 2025, at least half of which must be generated from renewable energy resources	
Date Announced	May, 1 <sup>st</sup> , 2008	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state grant program; state tax exemptions; state Advanced Energy Fund; net metering.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>On May 1<sup>st</sup>, 2008, SB 221 was signed into law, establishing an alternative energy portfolio standard for Ohio. The law mandates that by 2025, 25% of electricity should come from alternatives and that 12.5% of this should be from renewables such as wind, solar, hydropower, geothermal or biomass. The other 12.5% can be met from alternative energy resources such as nuclear, fuel cells, energy efficiency and clean coal technology.</p> <p>The Public Utility Commission of Ohio (PUCO) is responsible for reviewing compliance with the renewable and solar targets and imposing penalties for non-compliance. Electric utilities and service companies may use Renewable Energy Credits (RECs) to satisfy all or part of the targets. The bill also creates a REC tracking system, which allows utilities to buy, sell, and trade credits to comply with the renewable energy and solar energy requirements. To facilitate enforcement, the PUCO is required to adopt rules establishing greenhouse-gas reporting requirements. This includes participation in the Climate Registry, which aims to develop a common system for tracking greenhouse gas emissions between jurisdictions.</p> <p>An Alternative Compliance Payment (ACP) is in place, and is initially set at \$45/MWh but will be adjusted according to the Consumer Price Index in future. The solar alternative compliance payment (SACP) is set at \$450/MWh in 2010 and 2011, and will be reduced by \$50 every two years thereafter to a minimum of \$50/MWh in 2024. The PUCO is also tasked with annually reviewing compliance with the targets and imposing penalties if they are not met.</p> <p>In 2007, the installed summer renewable capacity was only 0.6%, which represents a decline from 2003 figures.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 239

Country/Region	United States – Ohio	
Policy Type	Legislation	
Policy Name/Description	SB 221: 22% savings in electricity consumption by 2025	
Date Announced	May, 1 <sup>st</sup> , 2008	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	15 MT of abatement in 2020	
Policy Category	Sector/Industry Specific Regulation	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	State grant program; state tax credits; state building energy code; state energy standards for public buildings.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>SB 221 requires utilities to meet an energy efficiency standard. An implementation plan has been developed, which delegates authority to utilities and the Public Utilities Commission of Ohio. Utilities must propose effective programs to the PUCO for review, and work collaboratively to refine their proposals.</p> <p>The efficiency programs developed to meet this target – whether run by the utility or by an independent program administrator – must serve all electricity consumers, including residential, commercial and industrial power users. The PUCO is charged with monitoring and evaluating the results of efficiency programs adopted by utilities to ensure that they deliver meaningful results at a reasonable cost.</p> <p>Utilities are allowed to recover the cost of energy efficiency programs from their customers, but are not allowed to collect more than is actually spent on energy efficiency investments. If utilities implement more ambitious programs, the PUCO is allowed to use its discretion to allow them to recover more costs.</p> <p>The American Council for an Energy-Efficient Economy believes that by tapping into state and local energy efficiency and clean energy grants offered through the American Recovery and Reinvestment Act, Ohio should have sufficient funding to achieve its target.</p> <p>A number of policies are in place to spur uptake of energy efficient measures. Ohio helps low-income customers reduce their energy bills through free home energy audits and weatherization. There are also building efficiency standards in place under the state Building Energy Code.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 240

Country/Region	United States – Oregon
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Oregon Strategy for Greenhouse Gas Reductions: Stabilize greenhouse gas emissions by 2010; 10% reduction from 1990 levels by 2020; 75% reduction from 1990 levels by 2050.
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Western Climate Initiative (WCI); state Renewable Portfolio Standard (Target 241); state appliance efficiency standards; state building code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>In March, 2009 the Oregon Global Warming Commission announced that the state is on track to meet its 2010 emissions target. Increases in wind power, solar energy, and green architecture have played a large part in emissions reductions.</p> <p>A number of robust policies are in place to support achieving this target, including cap-and-trade under the Western Climate Initiative (WCI). There are also appliance efficiency standards and a state building code encouraging energy efficiency measures.</p> <p>The WCI cap-and-trade program will be implemented in two phases. Beginning on January 1<sup>st</sup>, 2012, emissions from electricity generation and large industrial and commercial sources will be covered. In the second phase, beginning in January, 2015, the program will expand to cover emissions from transportation and residential, commercial, and industrial fuel use not otherwise covered.</p> <p>A reporting committee will oversee jurisdictional rules, reporting tools and a regional emissions database. Mandatory reporting of greenhouse gas emissions will begin prior to the cap-and-trade program and each partner will update the other WCI partners on their climate plans every two years to ensure adequate progress is taking place.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 241

Country/Region	United States – Oregon	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Oregon Renewable Energy Act (SB 838): 10% of total electricity generation from new renewables by 2015; 25% of total electricity generation from new renewables by 2025.	
<b>Date Announced</b>	June, 2007	
<b>Target Date</b>	2011-2025	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179, Target 180, Target 185 and Target 240	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state tax credits; state grant program; state rebate program; state public benefits fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>As part of the Oregon Renewable Energy Act of 2007 (SB 838), the state of Oregon established a Renewable Portfolio Standard (RPS). Different RPS targets apply depending on a utility's size. Larger utilities must generate 5% of sales from eligible renewables by 2011; 15% by 2015; 20% by 2020; and 25% by 2025 and subsequent years. Smaller utilities must generate 5% of sales from renewables by 2025.</p> <p>Oregon's Department of Energy has prepared an action plan to achieve the target, with long-term, medium-term and short-term goals, which are specific, actionable and underpin the plan. Electric utilities are also being asked to draw up individual implementation plans.</p> <p>Oregon's RPS is backed by renewable energy certificates (RECs), which are robustly designed and include some penalties. While utilities are responsible for funding compliance, public financing for climate change programs in Oregon may be inadequate. \$180,000 has been appropriated for the Oregon Climate Change Research Institute, but other budgeting remains unclear.</p> <p>Penalties for non-compliance are set on a utility-by-utility basis. The Alternative Compliance Payment for Portland General Electric, for example, has been set at \$50/MWh in 2011.</p> <p>Oregon has a good track record at implementing other targets, such as its emissions cap, and Oregon's largest utilities are on target to meet or exceed the 2011 interim target.</p>	



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 242

Country/Region	United States – Pennsylvania	
Policy Type	Legislation	
Policy Name/Description	18% of electricity from alternative energy sources during compliance year 2020-2021	
Date Announced	2004	
Target Date	2021	
CO <sub>2</sub> Abatement Potential	15 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state rebate program; state grant program; state public benefits fund; net metering.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 3
Overall Risk Assessment	2	
Supporting Commentary	<p>Pennsylvania's Alternative Energy Portfolio Standard (AEPS) requires each electric distribution company and electric generation supplier to retail electric customers in Pennsylvania to supply 18% of its electricity using alternative-energy sources by 2021. The AEPS is detailed and technology-specific, specifying two tiers of energy sources under the law. The standard calls for utilities to generate 8% of their electricity by using Tier I energy sources, which include solar PV, solar thermal, wind, low-impact hydro, geothermal, biomass, biologically-driven methane gas, coal-mine methane, and fuel cells. The standard calls for utilities to generate 10% of their electricity by using Tier II sources, which include waste coal, distributed generation systems, demand-side management, large-scale hydro, municipal solid waste, wood pulping, and IGCC technology. There is also a minimum solar requirement, which rises to 0.5% by 2021.</p> <p>Pennsylvania's AEPS is backed by renewable energy certificates (RECs). There is a penalty for non-compliance of \$45/MWh for all renewables. A separate Alternative Compliance Payment for solar has been established, at 200% of the average market value of solar credits sold during the reporting period.</p> <p>The state has seen some success in developing its wind resources, which account for over 50% of the 312MW of new generation capacity installed since 1998.</p> <p>According to the Energy Information Administration, 2.1% of electricity generation in Pennsylvania came from renewables in 2007, resulting in failure to meet the AEPS for that year.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 243

Country/Region	United States – Pennsylvania	
Policy Type	Legislation	
Policy Name/Description	Energy Conservation Bill: Electricity use should be reduced by 1% by 2011 and 3% by 2013; every home and business must be equipped with smart meters by 2023	
Date Announced	November, 2008	
Target Date	2011; 2013 and 2023	
CO <sub>2</sub> Abatement Potential	No impact on BAU in 2012 and 2020	
Policy Category	Sector/Industry Specific Regulation	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state rebate program; state grant program; state public benefits fund; state building energy codes; state energy standards for public buildings.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>Pennsylvania passed the Energy Conservation Bill into law in November, 2008. The Public Utilities Commission (PUC) has been charged with establishing a working group for the program, and each electric distribution company was required to file an energy efficiency plan with the PUC by July 1<sup>st</sup>, 2009. Each electric distribution must file a new plan every five years. A detailed annual report is also required to monitor energy savings.</p> <p>Strict penalties are in place for those utilities that do not file plans. There are also penalties of up to \$20 million in place for failing to meet the 1% reduction by 2011.</p> <p>The Pennsylvania Public Utilities Commission has established 4 sustainable Energy Funds to promote renewables and energy conservation.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 244

Country/Region	United States – Rhode Island
<b>Policy Type</b>	Unclear Status
<b>Policy Name/Description</b>	Rhode Island Greenhouse Gas Action Plan: Reduce greenhouse gas emissions to 1990 levels by 2010; 10% reduction from 1990 levels by 2020.
<b>Date Announced</b>	2002
<b>Target Date</b>	2010 and 2020
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (Target 245); state Renewable Portfolio Standard (Target 246); state appliance efficiency standards; state building code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>Rhode Island developed a Greenhouse Gas Action Plan in 2002, and has been implementing the plan since then. Rhode Island has also signed the New England Governors/Eastern Canadian Premiers Climate Action Plan in 2001. A stakeholder Action Plan for greenhouse gas emissions has also been developed.</p> <p>The Rhode Island Climate Coalition is made up of 79 organizations to reduce climate change and help meet targets.</p> <p>Rhode Island is on track to meet the 2010 and 2020 targets.</p> <p>The state is also part of the RGGI initiative. Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 245

Country/Region	United States – Rhode Island
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative (RGGI): 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	February, 2007
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Regional Greenhouse Gas Initiative (RGGI); state Renewable Portfolio Standard (Target 246); state appliance efficiency standards; state building code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>Rhode Island's Governor signed the RGGI initiative in February, 2007. The Rhode Island Greenhouse Gas Action plan was developed in 2002 and details the state emission reduction targets.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 246

Country/Region	United States – Rhode Island	
Policy Type	Legislation	
Policy Name/Description	16% of electricity generation from renewable sources by 2020	
Date Announced	June, 2004	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179, Target 180, Target 184, Target 244 and Target 245	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; proposed feed-in tariff; state grant program; state rebate program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	2	
Supporting Commentary	<p>Rhode Island's Renewable Energy Standard (RES), enacted in June, 2004, requires the state's retail electricity providers – including non-regulated power producers and distribution companies – to supply 16% of their retail electricity sales from renewable resources by the end of 2019.</p> <p>In 2008, Rhode Island introduced a bill similar to feed-in tariff legislation in Michigan, but without a sliding scale of payments for wind power. Instead, systems 20 MW and under are eligible for a \$0.115 payment and systems between 20 MW and 50 MW are eligible for \$0.105 payment. This feed-in tariff scheme has been under negotiation since February, 2008.</p> <p>Purchasing and trading of renewable generation certificates is available through the New England Generation Information System. Efficiency standards are in place, as well as tax credits and rebates.</p> <p>There are flexible mechanisms for compliance and penalties imposed. Penalties are only imposed after a warning letter is issued and a license taken away. Alternative Compliance Payments are set at \$60.92/MWh.</p> <p>In 2007, renewables contributed 2.3% of state electricity generation, according to the Energy Information Administration.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 247

Country/Region	United States – South Dakota	
Policy Type	Voluntary	
Policy Name/Description	HB 1272: Combined conservation and renewable electricity standard of 10% by 2015	
Date Announced	February, 2008	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity and Sector Specific Regulation	
Related Emissions Target(s)	Target 179 and Target 180	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 3	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 3
	Monitoring: 2	Historical Achievement: 3
Overall Risk Assessment	<b>3</b>	
Supporting Commentary	<p>On February 21, 2008, HB 1272 was signed, establishing a voluntary Renewable Portfolio Standard (RPS).</p> <p>There is no publicly available integrated plan. Eligible renewables include electricity produced from wind, solar, hydroelectric, biomass and geothermal resources, and electricity generated from certain types of waste heat. In addition to meeting the technology eligibility criteria, electricity must also meet the Public Utility Commission's rules for tracking, recording and verifying Renewable Energy Credits.</p> <p>There are no clear state-level incentives in place. As a voluntary target, there are no penalties or sanctions for retail providers that fail to meet the goal.</p> <p>The first compliance year was 2008, and the state missed its interim target in that year. In 2007, 2.4% of electricity was generated by wind in the state according to the Energy Information Administration.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 248

Country/Region	United States – Texas	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Install 2,000 MW of renewable electricity capacity by 2009; 5,880 MW by 2015; and 10,000 MW by 2025	
<b>Date Announced</b>	1999 (2009 target) and 2005 (2015 and 2025 targets)	
<b>Target Date</b>	2009; 2015 and 2025	
<b>CO<sub>2</sub> Abatement Potential</b>	10 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 and Target 180	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state renewable credit trading; state tax exemptions; state rebate program; state grant program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>In 1999, the Public Utility Commission of Texas (PUCT) adopted rules for the state's Renewable Energy Mandate, establishing a Renewable Portfolio Standard (RPS) and a Renewable Energy Credit (REC) trading program. A detailed plan, with a series of interim targets, was developed to scale-up renewable power production over time.</p> <p>The REC trading program commenced operation in July 2001, and is currently authorized to continue through 2019. Under PUCT rules, one REC represents one MWh of qualified renewable energy generated and metered in Texas. A Capacity Conversion Factor (CCF) is used to convert MW goals into MWh requirements for each retailer in the competitive market. The CCF was originally administratively set at 35% for the first two compliance years, but is now based on the actual performance of the resources in the REC trading program for the previous two years. Program success has been attributed to the fact that RECs can be traded at any time and banked for 3 years.</p> <p>The PUCT is charged with enforcing compliance. There are Alternative Compliance Payments of \$50.00 or 200% of mean REC trading value for missing each MWh.</p> <p>According to the State Energy Conservation Office, Texas has been so successful in its RPS that its 10-year goal was met in just over 6 years and the state has already exceeded its 2015 target of producing 4.5% of its electricity from wind.</p>	

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 249

Country/Region	United States – Utah
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	Western Climate Initiative (WCI): Reduce greenhouse gas emissions to 2005 levels by 2020
<b>Date Announced</b>	May, 21 <sup>st</sup> , 2007
<b>Target Date</b>	2020
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 185
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade scheme under Western Climate Initiative (WCI); state Renewable Portfolio Standard (Target 250); state building energy code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>Utah Governor John Huntsman signed a Memorandum of Understanding to join the Western Climate Initiative in May, 2007. In the Initiative's Memorandum of Understanding, WCI members agreed to jointly set a regional emissions target and establish a market-based system to aid in meeting the target. Utah has pledged to reduce greenhouse gas emissions to 2005 levels by 2020.</p> <p>The Western Climate Initiative builds upon the West Coast Governor's Global Warming Initiative of 2003, which California signed with Oregon and Washington. The program will be implemented in two phases. Beginning on January 1<sup>st</sup>, 2012, emissions from electricity generation and large industrial and commercial sources will be covered. In the second phase, beginning in January, 2015, the program will expand to cover emissions from transportation and residential, commercial, and industrial fuel use not otherwise covered.</p>



# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 250

Country/Region	United States – Utah	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Energy Resource and Carbon Emission Reduction Initiative: 20% of adjusted retail power from renewables by 2025	
<b>Date Announced</b>	March, 2008	
<b>Target Date</b>	2025	
<b>CO<sub>2</sub> Abatement Potential</b>	5 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 , Target 180, Target 185 and Target 249	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment Tax Credits; state rebate program; state tax exemptions.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 3
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 3	Historical Achievement: 3
<b>Overall Risk Assessment</b>	<b>3</b>	
<b>Supporting Commentary</b>	<p>Utah enacted its Energy Resource and Carbon Emission Reduction Initiative in March, 2008. The law requires that utilities only need to pursue renewable energy to the extent that it is cost-effective to do so. Utah’s goal has no interim targets, reducing incentives for action in the short-term. A detailed Climate Action Plan could not be found in the public domain.</p> <p>Utilities may meet their targets by producing electricity with an eligible form of renewable energy or by purchasing Renewable Energy Certificates. The Utah Public Service Commission is charged with conducting policy reviews and plans. Electricity may be produced within the state, or within the geographic boundary of the Western Electricity Coordinating Council. Notably, each kWh of electricity produced using solar energy counts as 2.4 kWh for the purposes of meeting the goal.</p> <p>There are no robust penalties for non-compliance in place.</p> <p>In 2007 Utah generated 1.6% of its electricity from renewables according to the Energy Information Administration and as a proportion of total capacity; the renewable capacity has declined since 2003.</p>	

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 251

Country/Region	United States – Vermont
Policy Type	Legislation
Policy Name/Description	Act 168: 25% reduction in greenhouse gas emissions from 1990 levels by 2012; 50% by 2028 and, if possible with reasonable effort, 75% by 2050.
Date Announced	July, 1 <sup>st</sup> , 2006
Target Date	2010 and 2020
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2020
Policy Category	Emissions target: Cap-and-trade
Supporting Policies: Mandates and Incentives	Cap-and-trade under the Regional Greenhouse Gas Initiative (Target 252); state Renewable Portfolio Standards (Target 253 and Target 254); state building energy code; state appliance efficiency standards; state Clean Energy Development Fund (CEDF); net metering; US Energy Star Homes Program.
Commentary	<p>On July, 1<sup>st</sup>, 2006, Senate Bill 259 (Act 168) was signed, establishing a goal to reduce greenhouse gas emissions 25% from 1990 levels by 2012, 50% by 2028 and 75% by 2050. Vermont is also signatory to the New England Governors and the Eastern Canadian Premiers Action Plan.</p> <p>There is a state Climate Action Plan in place, approved in October, 2007, that sets out a strategy to address climate change in Vermont. Senate Bill 259 directs the Secretary of Natural Resources to coordinate efforts with the Governor's Commission on Climate Change. On June, 11<sup>th</sup>, 2008, Governor Jim Douglas signed Senate Bill 350, An Act Relative to Energy Independence and Economic Prosperity, which established the Vermont Climate Change Oversight Committee. The Committee is charged with advising on how to proceed with carbon emission reduction strategies.</p> <p>Vermont is a member of the Regional Greenhouse Gas Initiative (RGGI) cap-and-trade scheme. Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

# North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 252

Country/Region	United States – Vermont
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Regional Greenhouse Gas Initiative: 10% reduction in greenhouse gas emissions from the power sector by 2018
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2005
<b>Target Date</b>	2018
<b>CO<sub>2</sub> Abatement Potential</b>	Modeled as part of Target 184
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade under the Regional Greenhouse Gas Initiative (RGGI); Vermont Renewable Portfolio Standard (Target 253 and Target 254); Vermont Building Energy Code; Vermont Appliance efficiency standards; Vermont Clean Energy development fund (CEDF); Net Metering and US Energy Star Homes Program.
<b>Commentary</b>	<p>On December 20<sup>th</sup>, 2005 Vermont's Governor Jim Douglas signed the RGGI initiative.</p> <p>Under RGGI, regulated power plants will be able to use emissions allowances issued by any of the 10 states in the scheme to demonstrate compliance with the program. There is a detailed plan in place that allows participants to purchase offsets to meet 50% of their emission reductions. There are also some flexibility mechanisms and design elements in the RGGI model that could inflate the cap and could make the program less effective at reducing the region's emissions through local actions.</p> <p>RGGI permits are selling well at auction with 12.5 million sold in the first auction in 2008, each representing one ton of CO<sub>2</sub>. In December, 2008, RGGI sold 32 million permits and the March, 2009, auction – the first since RGGI states' cap-and-trade rules took effect – saw all 32 million allowances sold at the clearing price. The proceeds from these sales are fed back to power utilities to invest in clean technologies and efficiency measures. The fourth auction of allowances in June, 2009, raised \$104.2 million for Investment in the Green Economy in participating states.</p>

## Target 253

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Vermont	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Vermont Energy Act of 2009: 20% of electricity generation from renewable sources by 2017	
<b>Date Announced</b>	March, 2008	
<b>Target Date</b>	2017	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 179 , Target 180, Target 184, Target 251 and Target 252	
<b>Supporting Policies: Mandates and Incentives</b>	Federal Production and Investment tax credits; Regional Greenhouse Gas Initiative auction proceeds; Vermont Feed-in tariff; Vermont rebate program; Vermont grant program.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>On May 27<sup>th</sup>, 2009, the Vermont Energy Act of 2009 went into effect. The bill included changes to the state Sustainability Priced Energy Enterprise Development (SPEED) program that would implement a pilot feed-in tariff policy.</p> <p>There are few details about how Vermont plans to meet this target. To qualify as a SPEED project, a facility must be located in Vermont, must produce energy using renewables or qualifying CHP, and must have come into service after December 31<sup>st</sup>, 2004. In some situations, contracts with out-of-state renewables can also qualify.</p> <p>SPEED has a program cap of 50 MW and a contract term of 20 years. Wind energy tariffs are set at \$0.20/kWh for projects &lt;15 kW and \$0.14/kWh for projects &gt;15kW. Landfill and biogas tariff are set at \$0.12/kWh, and solar tariffs are set at \$0.30/kWh. The tariffs will be reviewed in September, 2009, and new rates will be set in January, 2010.</p> <p>There are no robust sanctions in place for non-compliance with the Renewable Portfolio Standard.</p> <p>While Vermont has a high proportion of renewables in its power generation base, this only grew by 1% between 2003 and 2007.</p>	

Target 254

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Vermont	
Policy Type	Legislation	
Policy Name/Description	25% of energy consumed within the state must come from renewable sources originating in America's forests, farms, and ranches by 2025	
Date Announced	January, 2007	
Target Date	2025	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Energy	
Related Emissions Target(s)	Target 179 , Target 180, Target 184, Target 251 and Target 252	
Supporting Policies: Mandates and Incentives	Federal Production and Investment tax credits; Regional Greenhouse Gas Initiative auction proceeds; Vermont Feed-in tariff; Vermont rebate program; Vermont grant program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>In addition to its Renewable Portfolio Standard, Vermont's energy legislation established a separate target of securing 25% of the energy consumed in the state from renewable sources originating in forests and farms as part of the Vermont 25 by 25 Initiative.</p> <p>A detailed plan released by the Vermont Agency of Agriculture, Food and Markets in January, 2008, showed how the state could meet 79% of this target from farm and forest resources.</p> <p>The 25 by 25 Initiative is led by a dedicated Steering Committee and supported by the Vermont Agency of Agriculture. The target is supported by state efficiency standards, a renewable feed-in tariff, and tax credits.</p> <p>7.8% of Vermont's renewable generation was derived from wood and waste in 2007.</p>	

Target 255

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Virginia
<b>Policy Type</b>	Executive Order
<b>Policy Name/Description</b>	Executive Order 07-59: 30% reduction in greenhouse gas emissions by 2025 against no specified baseline. Includes a goal to meet 19% of state electricity needs through efficiency initiatives.
<b>Date Announced</b>	December, 20 <sup>th</sup> , 2008
<b>Target Date</b>	2025
<b>CO<sub>2</sub> Abatement Potential</b>	Not modeled
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	State Renewable Portfolio Standard (Target 256); state building energy code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>Executive Order 59 set a greenhouse gas emission target of 30% below business-as-usual projections of emissions by 2025. In December, 2008, the Virginia Governor's Commission on Climate Change, which had been charged with developing a strategy to achieve Virginia's emissions reductions targets, released its final report. The 124-page Climate Change Action Plan lays out a detailed set of recommendations to meet the target. The recommendations are focused on energy efficiency and conservation, as well as renewable generation.</p> <p>Virginia is not obliged to carry out mandatory emission reporting, but the Climate Action Plan calls for the state to join the Climate Registry.</p>

Target 256

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Virginia	
Policy Type	Voluntary	
Policy Name/Description	15% of base year (2007) electricity sales from renewable sources by 2025; 12% by 2022	
Date Announced	2007	
Target Date	2022 and 2025	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 , Target 180 and Target 255	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state tax exemptions; state building energy code; state rebate program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 2
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>Virginia enacted a voluntary renewable energy portfolio goal in 2007. In December, 2008, Virginia expanded this with the release of its Climate Action Plan detailing actions for growth of renewable generation in the state. Eligible energy resources include solar, wind, geothermal, hydropower, wave, tidal, and biomass energy. Hydropower excludes pumped storage, and the amount of wood derived from trees that would be otherwise used by Virginia lumber and pulp manufacturers is capped at 1.5 million tons annually. Wind and solar power receive a double credit toward Renewable Portfolio Standard (RPS) goals. Electricity must be generated or purchased in Virginia or in the interconnection region of the regional transmission entity.</p> <p>There are a number of supporting policies in place, including tax incentives, a utility rebate program, and property tax exemptions for solar, solar manufacturing incentives.</p> <p>Each investor-owned utility must report to the Public Utility Commission annually before November 1<sup>st</sup> on its efforts to meet the Renewable Portfolio Standard (RPS). However, no robust penalties are in place for non-compliance.</p> <p>In 2007, 4.9% of total electricity generation was produced by renewable sources in Virginia, according to the Energy Information Administration. However, a portion of this was sourced from renewable sources not eligible under the RPS.</p>	

Target 257

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Washington
<b>Policy Type</b>	Legislation
<b>Policy Name/Description</b>	Senate Bill 6001 and House Bill 2815: 1990 greenhouse gas emissions levels by 2020; 25% reduction by 2035; and 50% reduction by 2050.
<b>Date Announced</b>	February, 2008
<b>Target Date</b>	2020, 2035 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: Cap-and-trade
<b>Supporting Policies: Mandates and Incentives</b>	Cap-and-trade under the Western Climate Initiative (WCI); state Renewable Portfolio Standard (Target 258); state appliance efficiency standards; state building energy code; net metering; federal Energy Star homes program.
<b>Commentary</b>	<p>In February, 2008, House Bill 2815 passed, requiring Washington to reduce emissions to 1990 levels by 2020. The bill further stipulates a 25% reduction from 1990 levels by 2035 and a 50% reduction by 2050. Senate Bill 6001 complements House Bill 2815, specifying a series of concrete measures to address emissions in the state including setting requirements on electric power utilities to comply with minimum emissions standards.</p> <p>Washington is a signatory to the Western Climate Initiative enabling the state to participate in trading CO<sub>2</sub> allowances. In the Initiative's Memorandum of Understanding, WCI members agreed to jointly set a regional emissions target and establish a market-based system to aid in meeting the target.</p> <p>The Western Climate Initiative builds upon the West Coast Governor's Global Warming Initiative of 2003, which California signed with Oregon and Washington. The program will be implemented in two phases. Beginning on January 1<sup>st</sup>, 2012, emissions from electricity generation and large industrial and commercial sources will be covered. In the second phase, beginning in January, 2015, the program will expand to cover emissions from transportation and residential, commercial, and industrial fuel use not otherwise covered.</p>



## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Washington	
Policy Type	Legislation	
Policy Name/Description	15% of electricity from renewable sources by 2020, along with deployment of all cost-effective conservation by 2020	
Date Announced	November, 7 <sup>th</sup> , 2006	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 , Target 180, Target 185 and Target 257	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state grant program; proposed state feed-in tariffs; state tax exemptions.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 2	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
Overall Risk Assessment	1	
Supporting Commentary	<p>In 2006, Washington established a Renewable Portfolio Standard (RPS), which started at 3% by 2012 and escalates to 15% by 2020. The RPS is based on work done by the Pacific Northwest Electric Power and Conservation Planning Council, with reference to its regional power plans.</p> <p>A number of supporting policies are in place, such as a building energy code, tax exemptions, and utility grant programs. The state published a bill in February, 2009 calling for a full system of feed-in tariffs for all renewables, but none are in place as of yet.</p> <p>The Washington Utilities and Transportation Commission may adopt rules to ensure the proper implementation and enforcement of the standard as it applies to investor-owned utilities. Utilities can comply with the standard by generating electricity from eligible renewables, by acquiring equivalent renewable energy credits, or a combination of both. A utility that fails to comply with the target will pay an administrative penalty to the state of \$59 for each MWh of shortfall.</p> <p>According to the Energy Information Administration, total renewable electricity generation in 2007 was 77.2%, but only 3.5% of this came from non-hydro sources. Most of the hydropower projects in the state do not qualify for meeting the standard.</p>	

Target 259

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Wisconsin
<b>Policy Type</b>	Government aspiration
<b>Policy Name/Description</b>	Reduce greenhouse gas emissions to 2005 levels by 2014; 22% reduction from 2005 levels by 2022; 75% reduction from 2005 levels by 2050.
<b>Date Announced</b>	July, 2008
<b>Target Date</b>	2014, 2022 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	25 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	State Renewable Portfolio Standard (Target 260); state building energy code; net metering; public benefits fund; federal Energy Star homes program.
<b>Commentary</b>	<p>Wisconsin has not adopted climate change legislation, but has been active on the issue and created a global warming task force. On July 24<sup>th</sup>, 2009, the Wisconsin Task Force on Global Warming released a report outlining strategies for the state to address climate change. It detailed 50 viable and actionable policy recommendations in the utility, transportation, agriculture, forestry, and industry sectors.</p> <p>Utilities may meet the standard, if they choose to do so, through renewable generation credits and energy savings. At least 5% of the standard must be generated, acquired, or saved using solar energy systems.</p> <p>Wisconsin is a signatory to the Midwestern Greenhouse Gas Accord and has other supporting initiatives to aid in meeting the targets including a state Renewable Portfolio Standard and a green building code. The Wisconsin public benefits fund, “Focus on Energy”, supports statewide programs that promote energy efficiency and renewable energy.</p>

Target 260

## North America – United States: Emissions targets and Renewable, Industry and Sector targets (Mandates)

Country/Region	United States – Wisconsin	
Policy Type	Legislation	
Policy Name/Description	10% electricity generation from renewable sources by the end of 2015	
Date Announced	March, 2006	
Target Date	2015	
CO <sub>2</sub> Abatement Potential	1 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 179 , Target 180 and Target 259	
Supporting Policies: Mandates and Incentives	Federal Production and Investment Tax Credits; state feed-in tariff; state rebate program; state grant program; state building energy code.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 2
Overall Risk Assessment	<b>2</b>	
Supporting Commentary	<p>Wisconsin completed 388 renewable energy projects in 2008, a 40% increase on 2007.</p> <p>In April, 2007, Wisconsin's Governor created the Governor's Task Force on Global Warming. The Task Force has recommended an advanced renewable tariff and in December, 2008, the Wisconsin's Public Service Commission (PSC) opened an investigation into advanced renewable tariff development.</p> <p>A Renewable Resource Credit Program has been established, enabling utilities to buy and sell Renewable Resource Credits (RRCs) from one another for any electricity generated in excess of the percentage specified for a given year. Credits may also be held for use in subsequent years. The PSC was one of principal developers of the Midwest Renewable Energy Tracking System (M-RETS), which is used to monitor trading.</p> <p>By June 1, 2016, the PSC is charged with determining if the state has met a renewable-energy goal of 10% by December 31, 2015. If the goal has not been achieved, the PSC must indicate why the goal was not achieved and must determine how it may be achieved.</p> <p>Electric providers, wholesale suppliers and customers of electric providers may petition the PSC for a one-year extension of a compliance deadline. No penalties for non-compliance are in place, reducing enforceability.</p> <p>In 2009, 4.5% of state electricity comes from renewables.</p>	

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Oceania

### Target 261

<b>Country/Region</b>	<b>Australia</b>
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 8% maximum increase in greenhouse gas emissions from 1990 levels for the period 2008-2012
<b>Date Announced</b>	December, 3, 2007
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	30 MT of hot air in 2012
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 263); national lighting efficiency standard (Target 264); New South Wales Renewable Portfolio Standard (Target 265); South Australia Renewable Portfolio Standard (Target 266);
<b>Commentary</b>	<p>Australia's Prime Minister signed the Kyoto Protocol on December, 3<sup>rd</sup>, 2007.</p> <p>A 2007 Australia Department of Climate Change audit of greenhouse gas emissions showed that Australia will meet its Kyoto commitment by 2010. The document details an exhaustive list of policies and programs across the national, state, territory and local government level aimed at reducing greenhouse gas emissions in Australia.</p> <p>Australia's National Greenhouse Accounts provide quarterly greenhouse gas emission estimates for the United Nations Framework Convention on Climate Change, and for tracking Australia's progress towards its Kyoto commitment.</p> <p>Australia's government is in the process of implementing a cap-and-trade scheme under a package of bills known as the Carbon Reduction Pollution Scheme. The scheme which was originally due to commence in July, 2010, has already been put back by a year to July, 2011, and debate still continues around the level of free allowances that would be given to large polluters and the set price of carbon for the first year.</p>

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 262

<b>Country/Region</b>	<b>Australia</b>
<b>Policy Type</b>	Proposed Legislation
<b>Policy Name/Description</b>	Carbon Pollution Reduction Scheme (CPRS): Unconditional 5% reduction in greenhouse gas emissions from 2000 levels by 2020; 25% reduction by 2020 in the context of a global agreement; 60% reduction by 2050
<b>Date Announced</b>	December, 2008
<b>Target Date</b>	2020 and 2050
<b>CO<sub>2</sub> Abatement Potential</b>	85 MT of abatement in 2020
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 263); national lighting efficiency standard (Target 264); New South Wales Renewable Portfolio Standard (Target 265); South Australia Renewable Portfolio Standard (Target 266);
<b>Commentary</b>	<p>The Carbon Pollution Reduction Scheme (CPRS) legislative package comprises 11 bills that were introduced in the House of Representatives in May, 2009. The introduction of these bills followed the release of a Green Paper on the CPRS in July, 2008 and a White Paper on the scheme in December 2008. Prime Minister Kevin Rudd announced that emissions would be reduced by 5-15% by 2020 via a cap-and trade system in December, 2008.</p> <p>The bill was amended in May, 2009, delaying its start date by a year to at least July, 2011, and increasing the reduction target for greenhouse gas emissions for 2020 from 15% to 25% in the context of a global agreement.</p> <p>In August, 2009, the Government decoupled Australia's Renewable Energy Target legislation from the CPRS after the CPRS was defeated in the Senate. The cap-and-trade scheme has faced criticism over the concessions that would be offered to large polluters and the low fixed price for carbon for the first year.</p> <p>The Government has indicated that it intends to reintroduce the bills before the end of 2009.</p>

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 263

<b>Country/Region</b>	<b>Australia</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Renewable Energy Target Scheme: At least 20% of electricity supply from renewables by 2020	
<b>Date Announced</b>	October, 2007	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	35 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emissions Target(s)</b>	Target 261 and Target 262	
<b>Supporting Policies: Mandates and Incentives</b>	State Renewable Portfolio Standards (Target 265 and Target 266); Feed-in tariffs in some states; the bill that established the Renewable Energy Target Scheme also implemented a solar credit mechanism, which is based on a renewable energy certificate multiplier for small-scale renewable energy.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 2
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>The legislation was originally part of the Carbon Reduction Pollution Scheme Bill, but was decoupled from this in August, 2009, and subsequently passed as the stand-alone Renewable Energy Target Scheme on August, 20<sup>th</sup>, 2009. Although a detailed renewable strategy has not yet been released, there are a number of supporting documents and studies, including: the Garnaut Climate Change Review, the December, 2008 Government White Paper, the July, 2008 Government Green Paper, and the consultation document on Design Options for the Expanded National Renewable Target Scheme.</p> <p>There are no national-level feed-in tariffs for renewable energy in Australia. As of May, 2009, feed-in laws had been passed in Queensland, South Australia and the Australian Capital Territory. Limited provisions have also been passed in Victoria. The Tasmanian, New South Wales and Western Australia Governments are considering a scheme, while the Northern Territory is not currently considering feed-in tariffs. The Renewable Energy Target Scheme implements a solar credit mechanism based on a Renewable Energy Certificate (REC) multiplier for small-scale renewable energy including solar photovoltaic, wind, and hydro systems. The bill also mandates a review of the operation of the legislation and the regulations underpinning the Renewable Energy Target scheme in 2014.</p> <p>8% of power generation came from renewables in Australia in 2005. The Office of the Renewable Energy Regulator, a statutory authority, has been established to oversee the implementation of the Australian Government's mandatory renewable energy target.</p>	

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 264

<b>Country/Region</b>	<b>Australia</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	Phase-out of all incandescent bulbs by 2009 with full enforcement of new lighting standards by 2009-2010	
<b>Date Announced</b>	February, 2007	
<b>Target Date</b>	2009-2010	
<b>CO<sub>2</sub> Abatement Potential</b>	No impact on BAU in 2012 and 5 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emissions Target(s)</b>	Target 261 and Target 262	
<b>Supporting Policies: Mandates and Incentives</b>	N/A	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 1	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>The Australian Government will implement this phase-out of incandescent light bulbs by introducing minimum energy performance standards (MEPS) for lighting products. A consultation paper, "Proposal to Phase-Out Inefficient Incandescent Light Bulbs", outlines the implications of MEPS for inefficient incandescent light bulbs, compact fluorescent lamps, and extra low voltage converters. As part of the effort to increase energy efficient lighting in buildings, the Government has also created the Lighting Best Practice Program.</p> <p>The Department of Environment, Water, Heritage and the Arts released all documentation on how the program will be run. Compliance will be assured by testing lightbulbs in accredited laboratories. There are several sanctions for non-compliance outlined in the proposal document. There is a 'shaming' option, where failed brands would be listed in the Australian Greenhouse Office annual report. Another sanction stipulated in the document is deregistration by the state authorities. Subsequent sale of deregistered lightbulbs would be a criminal offence. Re-registration of models that are subject to MEPS is subject to a new round of testing. The third sanction specified in the proposal involves legal action.</p> <p>In February, 2009, the first stage of the plan was successfully introduced in the form of an import restriction – Australian Customs Notice No 2009/04 – on inefficient incandescent lighting.</p>	

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 265

Country/Region	Australia – New South Wales	
Policy Type	Legislation	
Policy Name/Description	15% of electricity from renewable sources by 2020	
Date Announced	August, 2007	
Target Date	2020	
CO <sub>2</sub> Abatement Potential	5 MT of abatement in 2020	
Policy Category	Renewable Portfolio Standard: Electricity	
Related Emissions Target(s)	Target 261 and Target 262	
Supporting Policies: Mandates and Incentives	Proposed state feed-in tariffs for solar PV systems; state Energy Savings Fund; state GreenPower program; state Energy Management Program.	
Investor Risk Assessment Rationale (See exhibit 5) <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 2	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
Overall Risk Assessment	1	
Supporting Commentary	<p>New South Wales has put in place a target to generate 15% of electricity from renewables by 2020.</p> <p>The New South Wales government has announced its intention to introduce a solar feed-in tariff for small grid-connected solar PV systems, and has established a taskforce to determine the appropriate feed-in tariff. The government also has a GreenPower program, which allows customers to choose to have their electricity supplied from renewable sources for a small annual cost. Through the New South Wales Energy Management Program, Government departments are required to purchase a proportion of their electricity from renewable sources.</p> <p>There is an A\$200 million Energy Savings Fund in place to support demand management and local renewable projects.</p> <p>6.1% of the state's electricity came from renewable sources in 2009.</p>	



# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 266

Country/Region	Australia – South Australia	
<b>Policy Type</b>	Proposed legislation	
<b>Policy Name/Description</b>	33% of energy production from renewable sources by 2020	
<b>Date Announced</b>	June, 2009	
<b>Target Date</b>	2020	
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Energy	
<b>Related Emissions Target(s)</b>	Target 261 and Target 262	
<b>Supporting Policies: Mandates and Incentives</b>	Feed-in tariffs for solar PV systems; financing in the form of an A\$20 million Renewable Energy Fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 2
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>Premier Mike Rann announced in June, 2009, that his state budget will outline plans to increase the state's renewable energy target to 33% by 2020.</p> <p>The plan for achieving this target is not detailed and is still in the development stage. This target replaces the former target of 20% by 2014 which has already been surpassed, demonstrating a good track record with renewable targets in the state.</p> <p>South Australia has put in place a major solar power rebate to encourage the sector's development. Householders will be paid upward of double the basic electricity retail cost for feeding excess solar power onto the electricity grid. A new A\$20 million Renewable Energy Fund has also been announced to stimulate investment in the sector.</p>	

## Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

### Target 267

Country/Region	New Zealand
<b>Policy Type</b>	International treaty
<b>Policy Name/Description</b>	Kyoto Protocol: 0% change in greenhouse gas emissions target from 1990 levels for the period 2008-2012
<b>Date Announced</b>	2002
<b>Target Date</b>	2008-2012
<b>CO<sub>2</sub> Abatement Potential</b>	15 MT of abatement in 2012
<b>Policy Category</b>	Emissions target: No carbon price
<b>Supporting Policies: Mandates and Incentives</b>	National Renewable Portfolio Standard (Target 268); and national lighting efficiency standard (Target 269).
<b>Commentary</b>	<p>According to an April, 2009 government report, New Zealand is on target to easily achieve its Kyoto target for cutting greenhouse gases as a result of drought and a reassessment of its forests. The country expects to produce 9.6 MT less of CO<sub>2</sub> and other greenhouse gases than allowed in the Protocol's 2008-2012 period.</p> <p>However, previous estimates have not been as optimistic. A report from 2008 indicated that New Zealand would have a greenhouse gas deficit of around 21.7 MT. This discrepancy indicates some level of uncertainty around the estimates.</p>

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 268

<b>Country/Region</b>	<b>New Zealand</b>	
<b>Policy Type</b>	Voluntary	
<b>Policy Name/Description</b>	90% of electricity from renewable sources by 2025 (inclusive of large-hydro)	
<b>Date Announced</b>	March, 2008	
<b>Target Date</b>	2025	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Renewable Portfolio Standard: Electricity	
<b>Related Emission Target(s)</b>	Target 267	
<b>Supporting Policies: Mandates and Incentives</b>	Financing in the form of a NZ\$12 million Low Carbon Energy Technology Fund and a NZ\$8 million Marine Development fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 3	Sovereign Credit Risk: 1
	Public Financing: 1	Integrated Plan: 2
	Enforcement: 2	Implementation Capacity: 2
	Monitoring: 2	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>2</b>	
<b>Supporting Commentary</b>	<p>In 2007, the Labour-led Government announced an ambitious target for New Zealand to generate 90% of its electricity from renewable resources by 2025. While this target appears ambitious, New Zealand already generates about 65-70% of its electricity from renewable resources, with roughly 55% of total generation coming from hydro, 10% from geothermal and 2.5% from wind. While there has been a government change since the target was announced, the new National Party government has announced its support for the renewable requirement.</p> <p>Although renewable electricity generation is already mature in New Zealand, there are supporting funding initiatives in place, including the NZ\$12 million Low Carbon Energy Technology Fund and the NZ\$8 million Marine Development Fund. Owing to the change in Government, a new National Policy Statement for Renewables is under development by the Ministry of Energy Resources and is expected to be completed by the end of 2009.</p> <p>New Zealand currently lacks any form of robust incentives for renewable energy. There is no system of feed-in tariffs in place, nor is there a renewable certificate scheme or favorable tax incentives. The policy appears to rely on Government funded initiatives such as the Energy Efficiency and Conservation Authority's grant scheme.</p>	

# Oceania: Emissions targets and Renewable, Industry and Sector targets (Mandates)

## Target 269

<b>Country/Region</b>	<b>New Zealand</b>	
<b>Policy Type</b>	Legislation	
<b>Policy Name/Description</b>	20% reduction in lighting energy consumption by 2015	
<b>Date Announced</b>	June, 2008	
<b>Target Date</b>	2015	
<b>CO<sub>2</sub> Abatement Potential</b>	1 MT of abatement in 2020	
<b>Policy Category</b>	Sector/Industry Specific Regulation	
<b>Related Emission Target(s)</b>	Target 267	
<b>Supporting Policies: Mandates and Incentives</b>	Financing in the form of a NZ\$12 million Low Carbon Energy Technology Fund.	
<b>Investor Risk Assessment Rationale (See exhibit 5)</b> <i>Lower Risk = 1; Moderate Risk = 2; Higher Risk = 3</i>	Incentives: 1	Sovereign Credit Risk: 1
	Public Financing: 2	Integrated Plan: 1
	Enforcement: 3	Implementation Capacity: 1
	Monitoring: 1	Historical Achievement: 1
<b>Overall Risk Assessment</b>	<b>1</b>	
<b>Supporting Commentary</b>	<p>The Government announced a ban on imports of incandescent light bulbs into New Zealand from October, 2009, which is expected to reduce lighting energy consumption by 20% by 2015.</p> <p>A detailed 3-year efficiency lighting action plan is in place with six specific goals in the plan, including eliminating inefficient incandescent lighting, eliminating inefficient fluorescent lighting and eliminating inefficient street lighting. The goals are to be achieved through implementation of a number of specific programs and actions.</p> <p>The lighting strategy has been developed by the Efficient Lighting Group (ELG), which was formed by the Electricity Commission, the Energy Efficiency and Conservation Authority and Lighting Council New Zealand.</p> <p>The ELG is responsible for monitoring progress and adapting to changing needs through the strategy framework. Analysis and reporting form a key part of the strategy.</p> <p>Some Government funding is available through the NZ\$12 million Low Carbon Technology Fund, as well as other government funding mechanisms which aim to improve energy efficiency in homes.</p>	

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