Anticipation of qualification needs and skills for green jobs

Peter Szovics
Cedefop

Outline

1. **Introduction: Cedefop's role**

2. **Skill needs**

3. **Forecast of occupational skill needs**

4. **Forecast of skill supply**

5. **Skills for green jobs**

6. **Next steps**

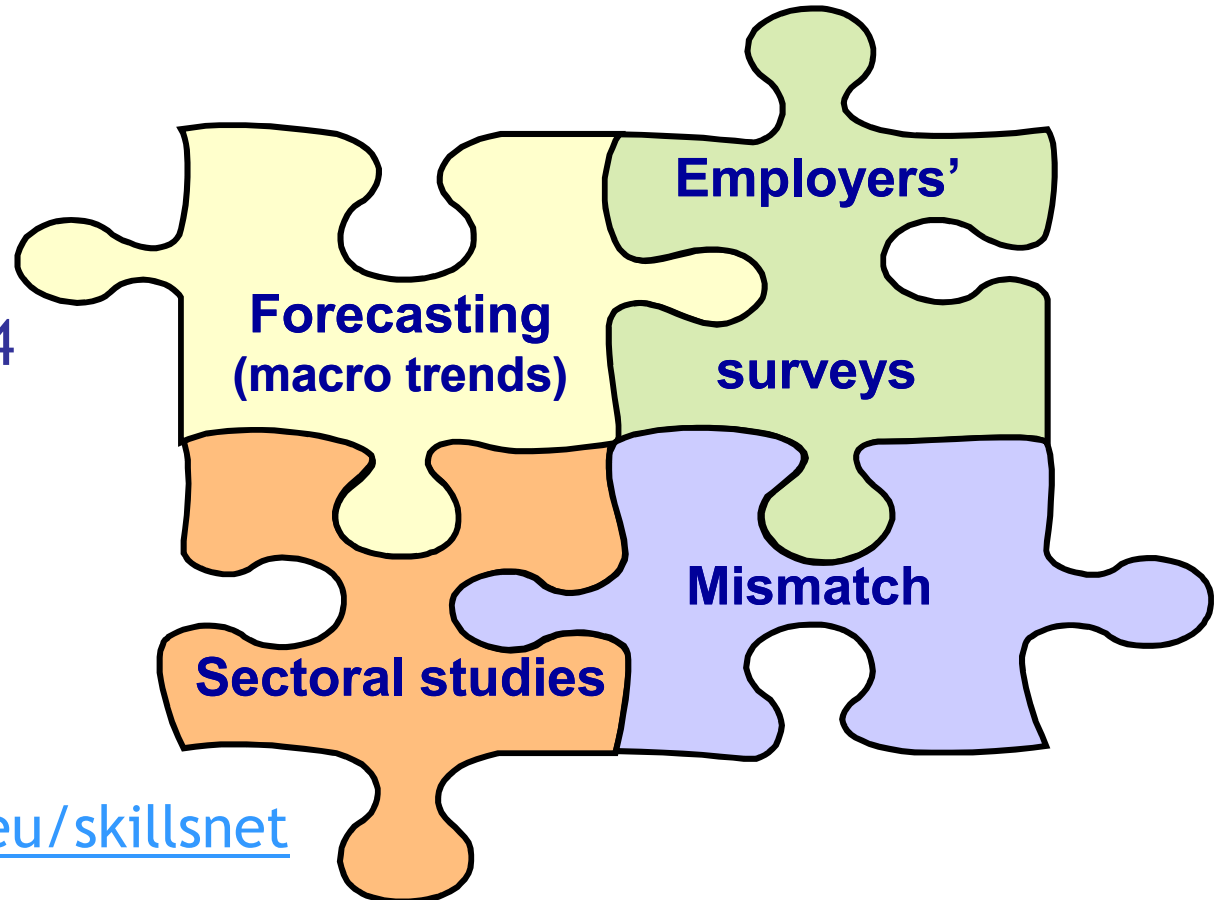# Cedefop's medium term priorities 2009-2011

'European VET policies, trends in skills and learning, VET's impact and visibility'

- informing European VET policies;

- raising the profile of VET;

- assessing VET's benefits;

- interpreting European trends in and challenges for skills, competences and learning.

Cedefop's skill needs: Where are we going?

- International network on early identification of skill needs established in 2004
- Platform for dialogue and information exchange
- On-going projects

www.cedefop.europa.eu/skillsnet

Forecasting (macro trends)

Employers' surveys

Sectoral studies

Mismatch

European skills forecasting

– comparable information Europe-wide

– feasible & cost-effective

1st stage: demand for skills (skill needs - jobs)

2nd stage: supply of skills (available skills – people)

3rd stage: supply and demand and identification of possible imbalances

Next stages: further improvement of methods and data bases

Sectoral workshops

- Trends and skill needs in the tourism sector 2004

- Identification of skill needs in nanotechnologies 2005

- Trends and skill needs in innovative agri-food and forestry-wood chains 2006

- Future skill needs in the health care sector 2008

- Future skill needs for the green economy 2008

- Skill needs and qualifications in logistics 2010

Employer's surveys

- assess qualitative changes in the demand for skills, competences and qualifications;

- identify existing employers surveys in the EU Member States and at EU level;

- Pan-European skill survey: comprehensive and comparable analysis of skill requirements at company level

Skills mismatch

- Understanding mismatch

- Target groups

- Polarisation

- Impact of recession on skills mismatch

- Impact of institutions on matching (Beveridge curve)

What Cedefop's forecast…

can provide?

- systematic analysis of the implications of continuation of past trends and patterns of behaviour
- alternative scenarios based on alternative assumptions
- basis for intelligent and informed debate and further research

cannot provide?

- precise predictions that can be used for detailed manpower planning (not a crystal ball)
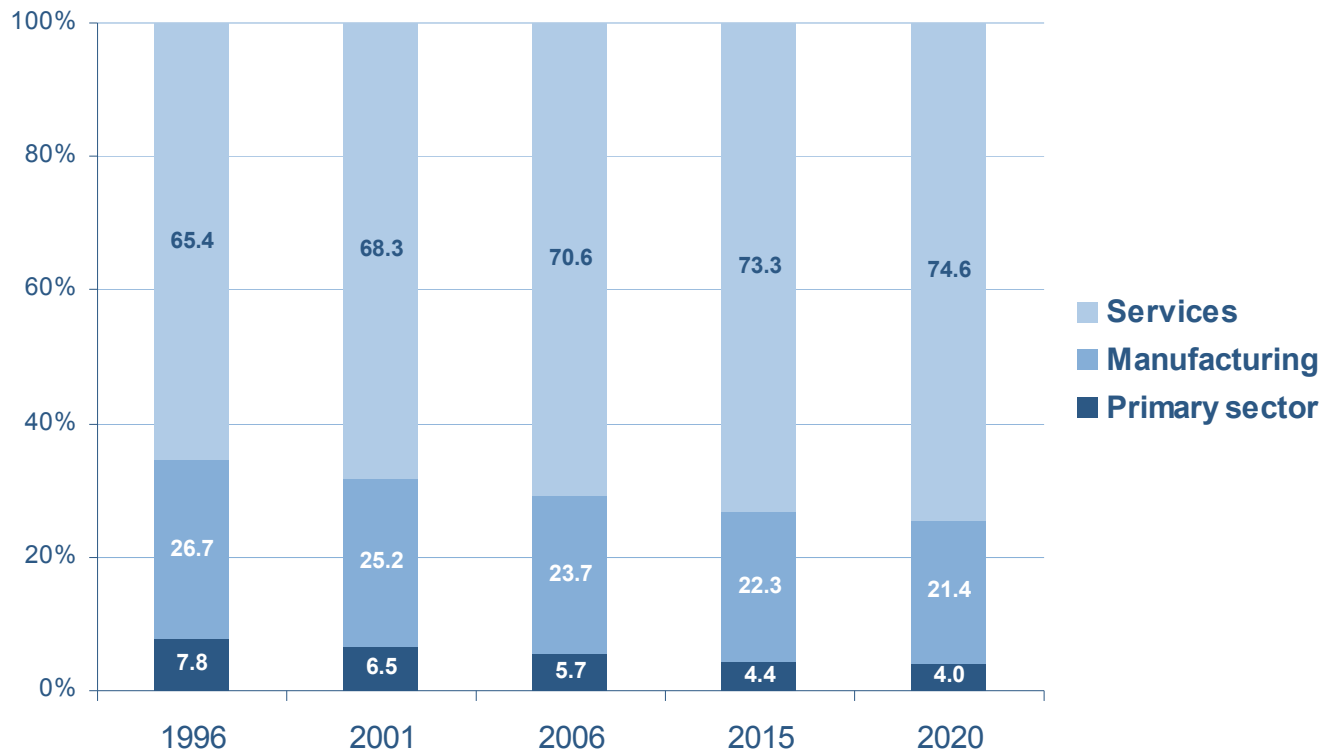- qualitative information on skills and competences

Medium-term forecast
of occupational skill needs

- consistent pan-European skills projections using comparable data

- Modular approach
  - sectoral scenarios (41),
  - expansion demand by occupations (27),
  - qualifications (3),
  - replacement needs.

- Scenarios (baseline, optimistic, pessimistic)

Shift towards services continues

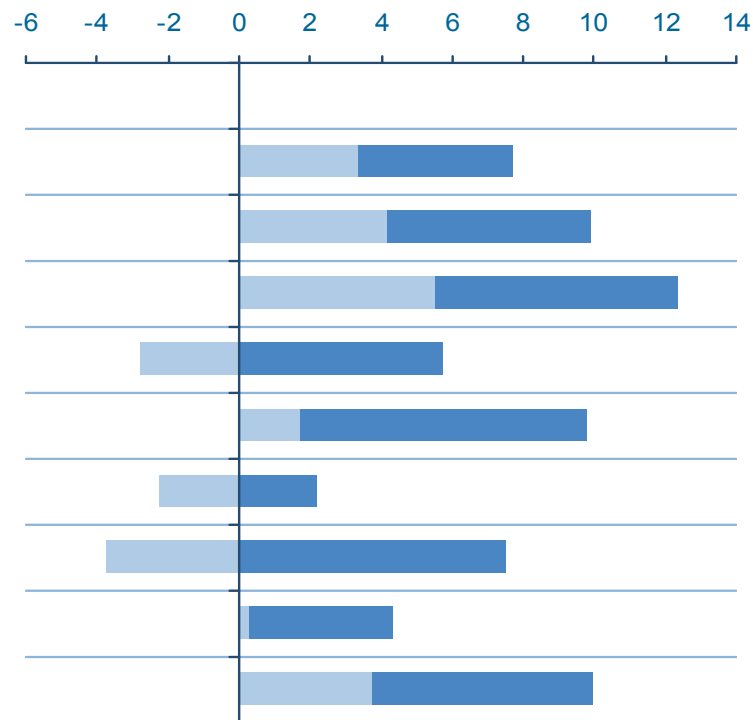**Employment trends by broad sector, shares in %, 1996-2020**

	1996	2001	2006	2015	2020
Services	65.4	68.3	70.6	73.3	74.6
Manufacturing	26.7	25.2	23.7	22.3	21.4
Primary sector	7.8	6.5	5.7	4.4	4.0

EU-25+
Negative scenario

High demand for skilled occupations – but also for elementary jobs Replacement needs will play important role

Change 2006-2020 in million jobs

■ **Expansion demand (net change)**

■ **Replacement demand**

| | -6 | -4 | -2 | 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 |

Legislators, senior officials and managers

Professionals

Technicians and associate professionals

Clerks

Service workers and shop and market sales workers

Skilled agricultural and fishery workers

Craft and related trades workers

Plant and machine operators and assemblers
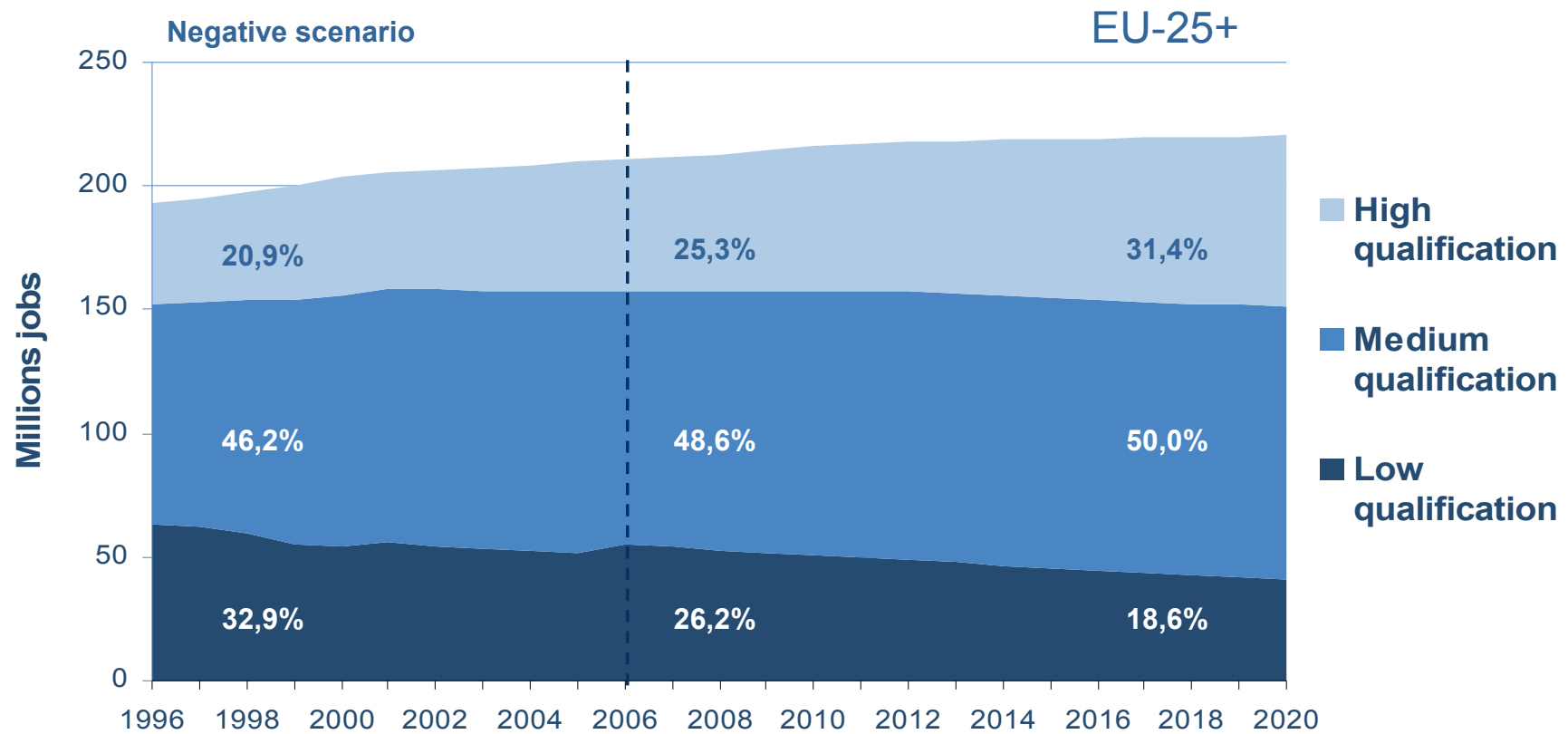
Elementary occupations

EU-25+
Negative scenario

More high and medium qualified jobs in future
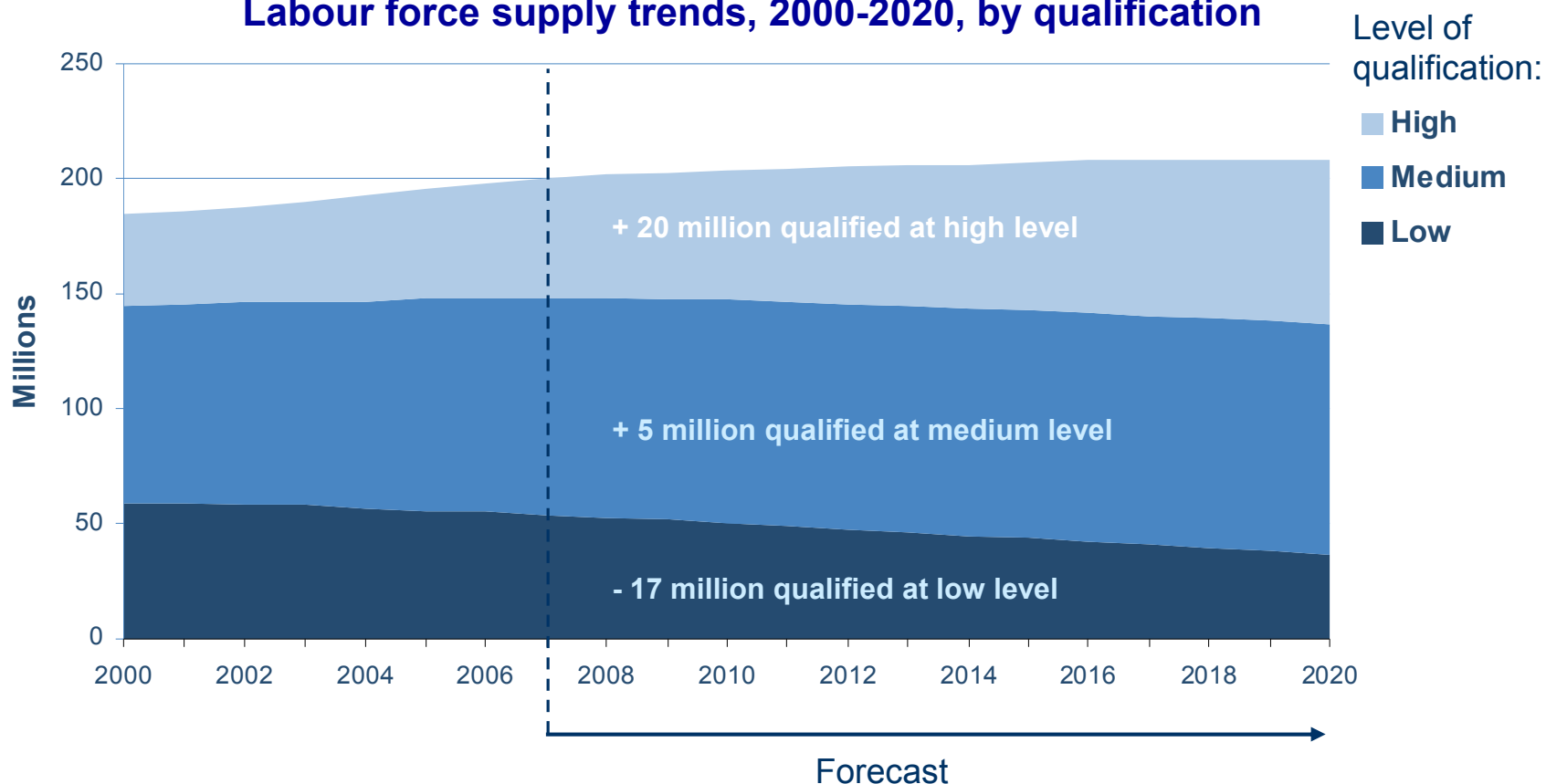
Employment trends, 1996-2020, by qualification

Forecast of skill supply until 2020

- Consistent pan-European skills supply projections using existing data

- Skills supply measured as qualifications of population and labour force

- Considers demographic change and scenarios

- Compatible (but not yet comparable) with previous projections of skills demand

Medium-skilled workers remain basis of European economy

**Labour force supply trends, 2000-2020, by qualification**

Level of
qualification:

■ High

■ Medium

■ Low

+ 20 million qualified at high level

+ 5 million qualified at medium level

- 17 million qualified at low level

Millions

250

200

150

100

50

0

2000 2002 2004 2006 2008 2010 2012 2014 2016 2018 2020

Forecast

NB: Labour force aged 25 and more. EU-25 without Malta, plus Norway

Many common trends across countries

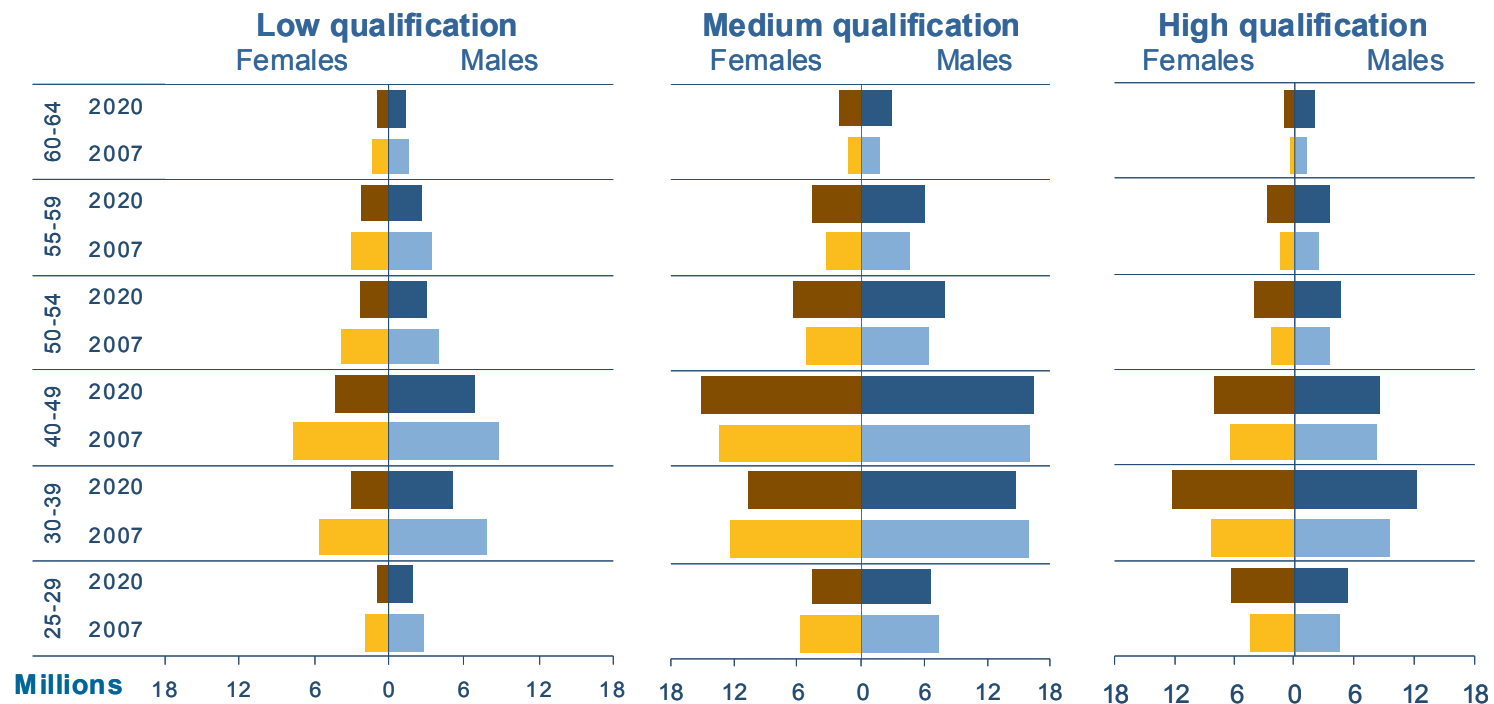## Changing qualification structure of the labour force in countries, 2007 and 2020
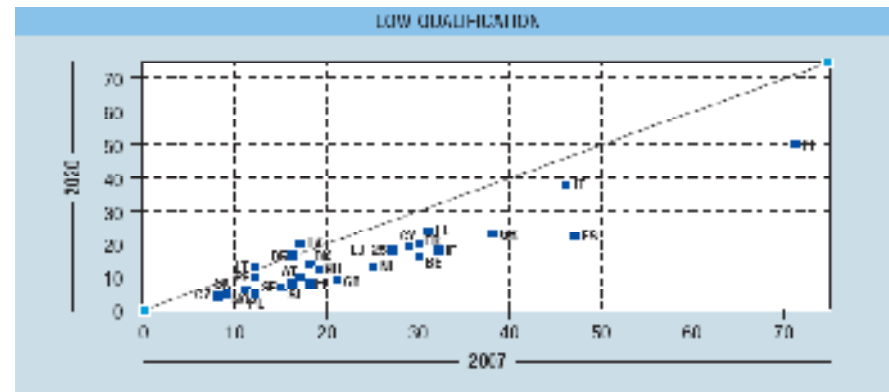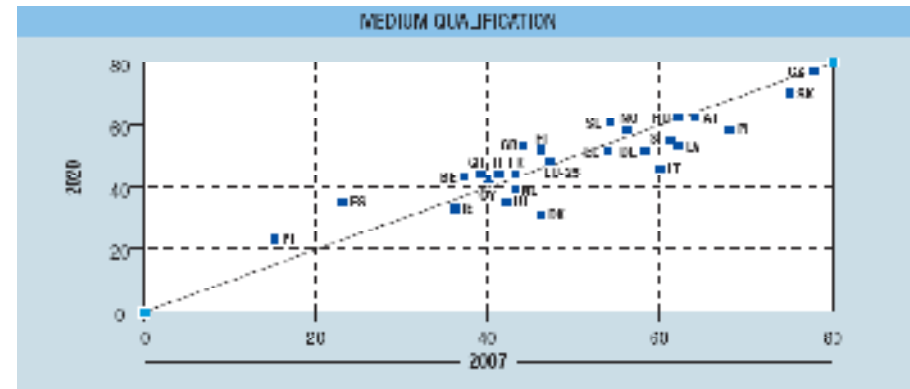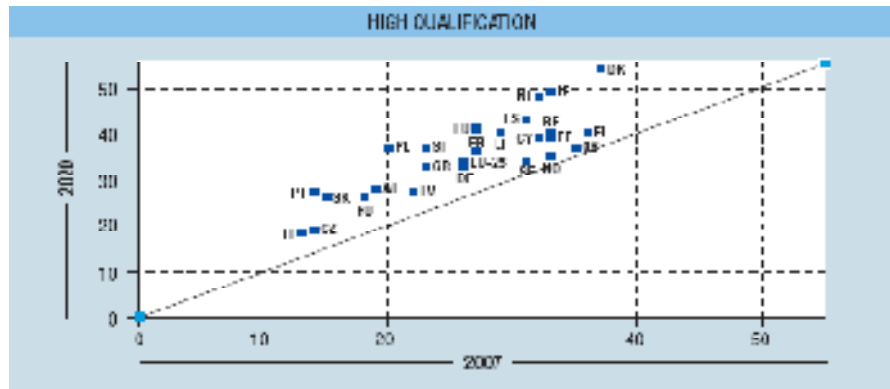
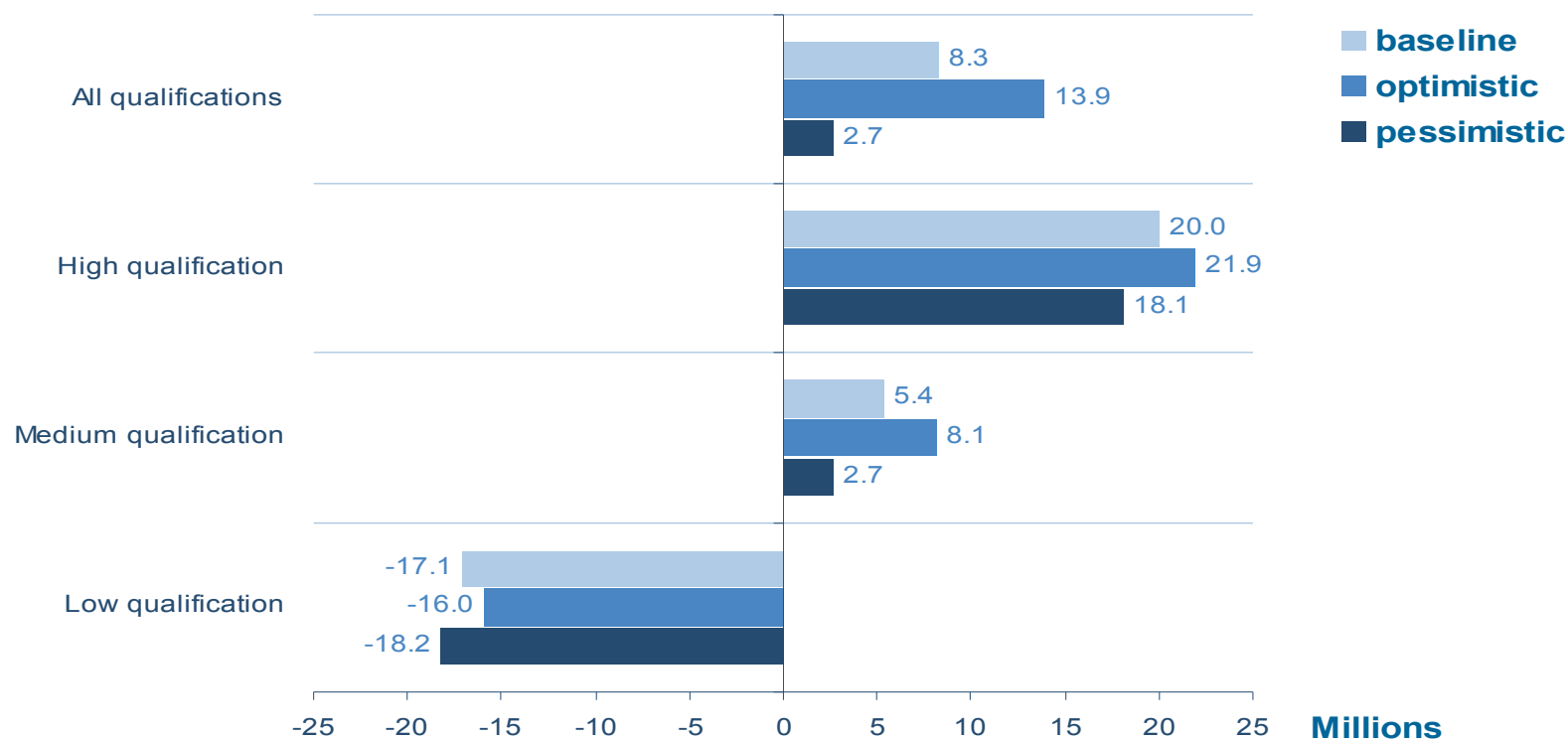*NB: Labour force aged 25 and more. EU-25 without Malta, plus Norway*

Should we be more pessimistic?

Scenarios o labour force supply by qualification, change 2007-2020

baseline
optimistic
pessimistic

All qualifications: baseline 8.3, optimistic 13.9, pessimistic 2.7
High qualification: baseline 20.0, optimistic 21.9, pessimistic 18.1
Medium qualification: baseline 5.4, optimistic 8.1, pessimistic 2.7
Low qualification: baseline -17.1, optimistic -16.0, pessimistic -18.2

-25 -20 -15 -10 -5 0 5 10 15 20 25 **Millions**

NB: Labour force aged 25 and more. EU-25 without Malta, plus Norway

Key results

- Europe is on track to raise its qualifications profile
  - ⇨ more Europeans acquiring high and medium qualifications
  - ⇨ fewer low-qualified Europeans
- Younger cohorts: the best qualified ever
- Rising supply parallels rising demand

BUT no room for complacency:
- – Can trends be maintained?
- – Will demand grow at the same pace and provide good quality jobs for all?
- – What about the actual skills and their match with the labour market needs?

Towards regular European skill forecasts: work in progress

- Improvement of methods and databases
- Update of both supply and demand forecasts in parallel
  - to allow analysis of imbalances
  - to be published every 2 years (starting from 2010)
- Scenarios to consider crisis and recovery
- Complementary research activities

Skills for green jobs:
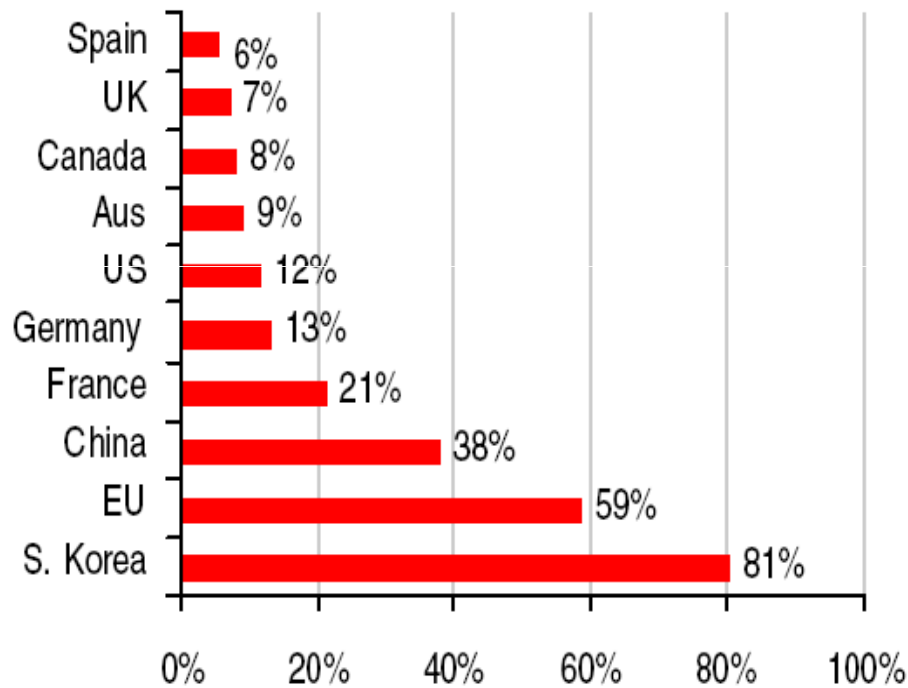# A climate for recovery

- Triple challenge - stimulus packages opportunity to stimulate low carbon investments

- Are plans allocating enough resources?

- When is the green stimulus likely to materialise?

- How green is the Green Deal?

- How many jobs will be created?

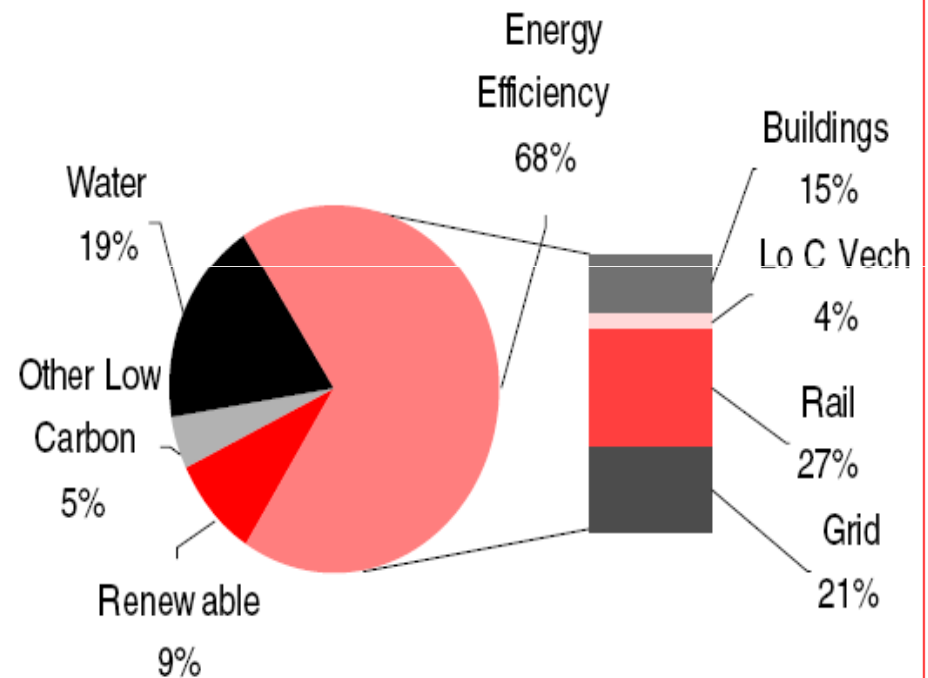- How effective is the green stimulus?

Boosting green infrastructure

Green stimulus regional ranking as a % of total stimulus

Region	%
Spain	6%
UK	7%
Canada	8%
Aus	9%
US	12%
Germany	13%
France	21%
China	38%
EU	59%
S. Korea	81%

Source: HSBC estimates

Green stimulus theme allocation

- Energy Efficiency 68%
- Water 19%
- Other Low Carbon 5%
- Renewable 9%
- Buildings 15%
- Lo C Vech 4%
- Rail 27%
- Grid 21%

Source: HSBC estimates

EU scorecard

Summary

- The focus of the climate friendly stimulus is on renewables, the electric grid and CCS.

- Of this relatively small package, a relatively high share is devoted to climate change.

- Obvious negative elements are not included.

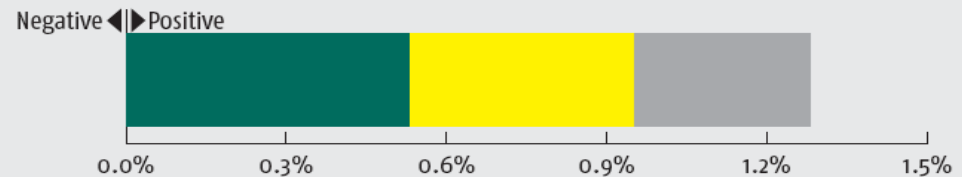## Effectiveness adjusted expenditures

- US$2,419 million

- 1.3% of the EU budget

- 33% of total package

General information

Size of Package: €5,000 million
US$7,357 million
3.9% of EU budget

Timeline: 2009–2010

Negative ◀||▶ Positive

0.0%   0.3%   0.6%   0.9%   1.2%   1.5%

Effectiveness adjusted expenditures as % of GDP

- Renewables
- Energy Efficiency
- Transport
- Electric grid infrastructure
- Carbon capture and storage
- Road building
- Fossil fuels

Source: Ecofys, Germanwatch 2009

Green Recovery

GREEN INVESTMENTS AND JOBS

STRATEGIES FOR GREEN ECONOMIC INVESTMENT	REPRESENTATIVE JOBS
Building Retrofitting	Electricians, Heating/Air Conditioning Installers, Carpenters, Construction Equipment Operators, Roofers, Insulation Workers, Carpenter Helpers, Industrial Truck Drivers, Construction Managers, Building Inspectors
Mass Transit/Freight Rail	Civil Engineers, Rail Track Layers, Electricians, Welders, Metal Fabricators, Engine Assemblers, Bus Drivers, Dispatchers, Locomotive Engineers, Railroad Conductors
Smart Grid	Computer Software Engineers, Electrical Engineers, Electrical Equipment Assemblers, Electrical Equipment Technicians, Machinists, Team Assemblers, Construction Laborers, Operating Engineers, Electrical Power Line Installers and Repairers
Wind Power	Environmental Engineers, Iron and Steel Workers, Millwrights, Sheet Metal Workers, Machinists, Electrical Equipment Assemblers, Construction Equipment Operators, Industrial Truck Drivers, Industrial Production Managers, First-Line Production Supervisors
Solar Power	Electrical Engineers, Electricians, Industrial Machinery Mechanics, Welders, Metal Fabricators, Electrical Equipment Assemblers, Construction Equipment Operators, Installation Helpers, Laborers, Construction Managers
Advanced Biofuels	Chemical Engineers, Chemists, Chemical Equipment Operators, Chemical Technicians, Mixing and Blending Machine Operators, Agricultural Workers, Industrial Truck Drivers, Farm Product Purchasers, Agricultural and Forestry Supervisors, Agricultural Inspectors

Source: Robert Pollin et al: Green Recovery: A program to Create green jobs and start building a Low-Carbon Economy, PERI, September 2008

Links between employment and environment policies

- Environmental policy seems to have neutral or positive impact on jobs

  (20 % RE by 2020 410000 jobs; 0.24 % GDP)

- Skill profiles tend to be polarised

- Environmental jobs led

  to upgrading of skills

- Better skilled labour force perform better environmentally

What are the drivers
of environmental skill needs?

- Regulation/legislation - targeted reductions in carbon emissions
- Price controls, fiscal policies (e.g. carbon taxes)
- Scientific, social understanding of climate change
- Rising cost of energy
- Security of supply issues
- Population growth
- Incentives/subsidies
- Liberalisation of utilities
- Restructuring of companies
- 'Cool to be green'

Generic skills for green economy

- Strategic/leadership skills
- Adaptability/transferability skills
- Systems analysis (primacy of design)
- Holistic approach
- Risk analysis
- Co-ordination skills
- Entrepreneurship
- Less complex at lower levels

Specific skills for green economy

- Good grasp of the 'sound' sciences
- Relevant traditional skills
- Knowledge of sustainable materials
- "Carbon foot printing" skills
- Environmental impact assessment skills (flora, fauna)

Role of education and training

- Greater understanding of market needs
- Able to work in multi-disciplinary teams
- "Train the trainer"
- Incentives for work placed learning
- Role of social partners in defining competences
- Extension of 'right to be informed" to green agenda
- Strengthen skills foresight mechanisms
- Recognition of formal/non-formal learning
- More quality internships
- Incentives for quality internships
- EU guidelines for promotion of green awareness in education
- EU wide certification for energy assessors etc..

Joint project of Cedefop and ILO

- Identify strategic skill development responses in six EU Member States

  Cedefop: DK, EE, FR, DE, ES and UK; ILO: Australia, Bangladesh, Brazil, China, Costa Rica, Egypt, India, Indonesia, Korea, Mali, the Phillippines, South Africa, Thailand, Uganda and the USA

- Challenges, policies and strategies

- Skill and retraining needs in new and existing occupations

- Methods, tools, systems and institutional frameworks

- Skill response on education and training – case studies

  – (re)training needs,

  – *new* green-collar occupations,

  – new types of skills, (greening of existing occupations).

Contact details for more information

Cedefop: www.cedefop.europa.eu

Skill needs: www.cedefop.europa.eu/skillsnet

Manfred Tessaring
manfred.tessaring@cedefop.europa.eu

Alena Zukersteinova
alena.zukersteinova@cedefop.europa.eu

Torsten Dunkel
torsten.dunkel@cedefop.europa.eu

Peter Szovics
peter.szovics@cedefop.europa.eu