



***Consequences of climate change
policies
Organised by European Social
Partners
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Climate change and the employment challenge



- Global warming itself and the adaptation to global warming is expected to have important effects on the level, and especially the composition, of employment.
- Global warming destroys certain production factors (e.g. agricultural areas, touristic resorts, and fish stocks) and disrupts production processes (e.g. through hurricanes and flooding) which leads to a significant reallocation of labour and capital across and within sectors and regions.
- At the same time adaptation to global warming will also bring about opportunities to create new jobs as new 'green' markets emerge and as the infrastructure is modernised





Greening-up the EU economy – measures taken in the frame of:

2008 climate package targets ('20-20-20')

- Increase use of renewables (including biofuels)
- Improve energy efficiency – cut energy consumption (Buildings, Combined Heat and Power, Ecodesign and Ecolabel)
- Reduce GHG emissions

Crisis Recovery Programmes

- financial incentives for green innovation, energy efficiency and infrastructure investment



Europe 2020 strategy for smart, sustainable and inclusive growth



Reinforcing objectives:

- promoting a more resource efficient, greener and competitive economy
- Decoupling economic growth from resources
- Increase use of renewables
- Modernise transport, energy efficiency (- € 60 bn oil/gas imports 2020)
- 20% target energy renewable potential for 600.000 jobs...
- 75% Employment rate



Definition of employment connected to climate change (eco industries)



- Direct employment covers employment in activities concerning the operation and maintenance of equipment or the provision of environmental goods and services, as well as employment in activities aimed at the production of environmental equipment or infrastructure to provide environmental services.
- Indirect employment covers employment in activities that provide intermediate inputs for the production of environmental equipment and services.





Green activities

Clean Energy

Power Generation

- Solar
- Wind
- Clean coal (sequestration, infrastructure)
- Other clean power generation (Geothermal, hydro, biomass, wave / tidal, methane capture, nuclear)

Cleantech Infrastructure

- Infrastructure management
- Supply chain management

Power Storage Technology

- Battery technology and fuel cells

Transport & Sustainable Biofuels

- Low carbon transportation
- Bio-diesel, ethanol

Environmental Resource Management

Water

- Desalination / purification
- Wastewater treatment
- Distribution and management
- Water efficiency

Agriculture

- Irrigation innovation
- Clean pesticides
- Consumer food purity
- Seeds
- Timber and Forestry
- Organic

Waste Management

- Recycling
- Toxin management
- Energy from waste
- Land remediation

Land management & Protection

- Land conservation
- Environmental restoration
- Sea defences
- Carbon sequestration

Energy & Material Efficiency

Advanced Materials

- Advanced coatings
- Lightweight substitutes
- Solvents and biodegradables

Building Efficiency

- Building management including green data centre management
- Heating & cooling systems
- Lighting systems
- Insulation
- Micro generation / micro CHP

Power Grid Efficiency

- Transmission (including smart grids)
- Smart metering
- Storage
- Infrastructure

Materials management

- Recycling
- De-materialization
- Durability and reparability of products

Environmental Services

Manufacturing Services

- Pollution control
- Energy and material efficiency
- Clean production techniques
- Integrated systems

Business Services

- Insurance
- Logistics inc. transportation
- Green focused banking
- Microfinance
- Consultancy/advisory
- Intellectual property
- Weather

Retail Services

- Green product and services
- Labelling
- Communication
- Low carbon services

Cleaner production & diversification

Energy intensive

- Extractive industries
- Steel
- Cement
- Bricks
- Pulp & Paper
- Speciality chemicals
- Petrochemicals
- Ceramics

Manufacturing

- Food & Drink
- Automotive
- White goods
- Furniture
- Electronics
- Textiles

Engineering

- Metal finishing

Diversification (move from traditional industry to new technologies)

- Ship building (wind turbines)
- Aircrafts (tidal turbines)



More significant effects are expected concerning the distribution of employment across sectors and regions. More specifically, ETUC et al. (2007) identify the following three main adjustment mechanisms:

1. The transfer of jobs from power generation activities to activities relating to energy efficiency and the reduction of power consumption;
2. The transfer of jobs from goods transport by road and the private car to public transport activities for freight and passengers;
3. The substitution effects within equipment industries (i.e. jobs in the equipment sector for power generation from fossil fuels being replaced by jobs in the equipment sector for power generation from renewable sources).



Transition brings potentially large changes in sectoral employment...



Winners:

– **Renewables (EmployRES):**

- Achieving the 20-20-20 targets could generate 115,000-432,000 net additional jobs to the economy in the renewables sector in EU27 by 2020 (NB: Current energy sector c1m jobs, EU27)

– **Construction (ETUC, 2007):**

- Reducing CO2 emissions from the residential sector by 70mt CO2 p.a. could lead to 50,000-150,000 gross new jobs in construction in EU25 by 2020 (NB: Current construction sector c15m jobs, EU27)

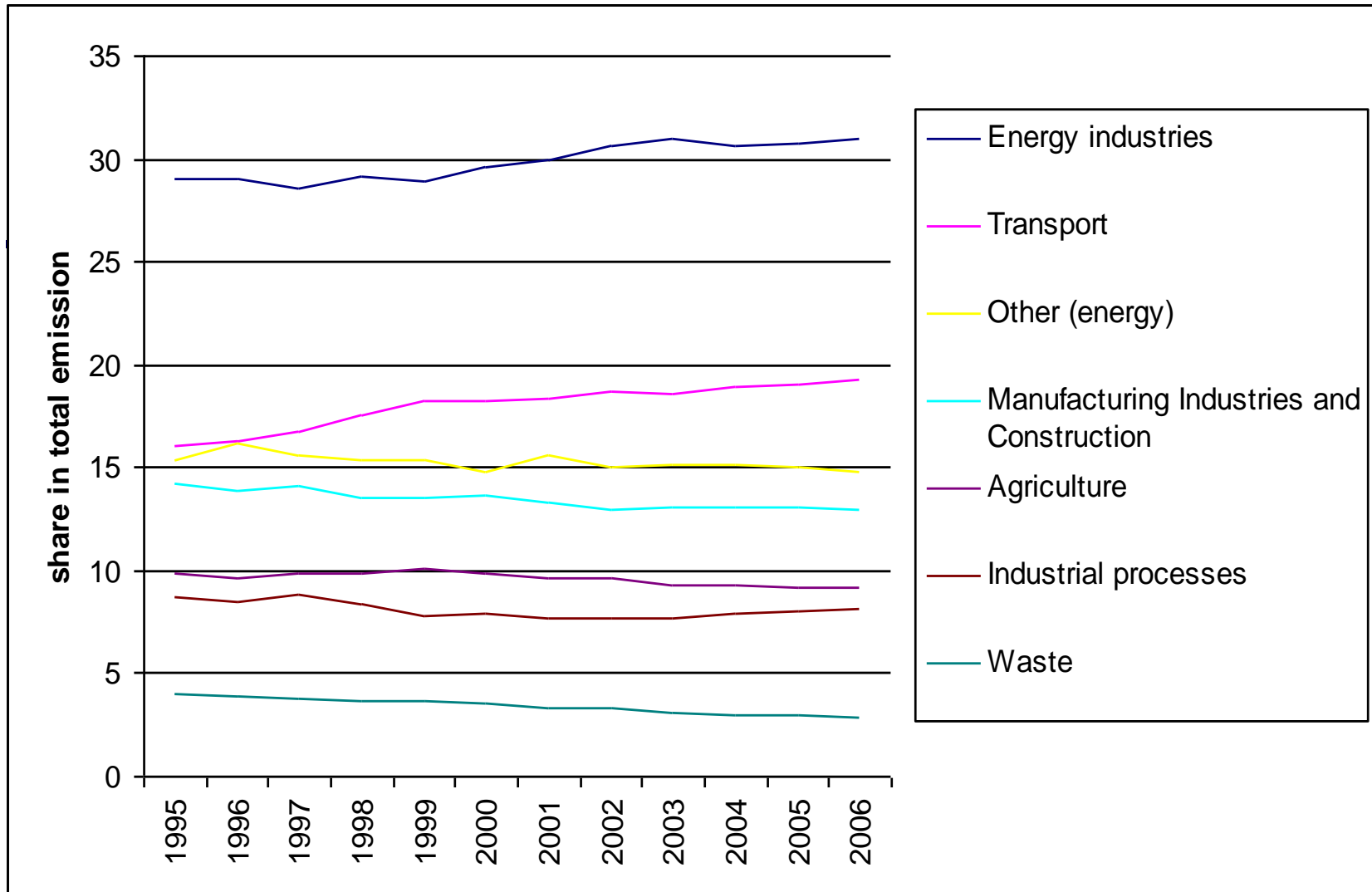
Losers:

– **Energy intensive sectors (ETUC, 2009):**

- 175,000 job threatened by cap / auctioning of emission reductions in the steel industry in EU27 (NB: Current steel industry c425,000 jobs, EU27)
- Ten smaller refineries are expected to close by 2020 making 6,000 employees redundant due to reduced energy and fuel demand



Contribution of selected sectors to total pollution in EU-27: 1995-2006 (Source: Eurostat and DG EMPL calculations)





Economy *greening* will:

- Affect primarily the composition of employment (both in terms of occupation and geographical location) and to a lesser extent the overall employment levels
- Sectors affected: energy, building, manufacturing, transport, agriculture, energy-intensive industries
- New jobs in: design, production (manufacturing), sales, instalment, maintenance
- Some jobs might be lost or redeployed in the process of restructuring

Job can be *green* in terms of: sector in which it is created (eg. renewables), technology being used for the output generation (eg. clean-tech), or working methods /practices at the work place

Overall: composition of employment and changes in skill demand





Transition generates changes in skill needs and shortages

Cedefop study of 6 MS (DE, DK, EE, ES, FR, UK)

- Most of the skills required for the transition to the low carbon economy are not new
- Emerging occupations based on a blend of existing competencies

Skills needs relate to generic and technical skills

- Management, leadership, communication (Entrepreneurship)
- Technical (esp. science, technology, engineering, mathematics)
- General decline in take-up of training in technical areas a particular concern for Green Skills

Skill shortages

- New technologies, new skills (renewables, electric vehicles)
- Short-term demands exceed capacities (eg buildings / energy efficiency)
- General labour market weaknesses (skills imbalances etc)
- Enterprise and entrepreneurship (vocational education & training)
- Specification and scale undefined





Expert group report: **New skills for New Jobs:** **Action Now**

- Provide the right incentives to upgrade and better use skills
- Bring the worlds of education, training and work closer together
- Develop the right use of skills
- Better anticipate future skills needs



The following elements seem to be of particular relevance:



- *Easing transitions* to avoid a build-up of structural unemployment from job losses with a focus on low-skilled workers. Likewise, energy-intensive industries, or small and medium size enterprises, might merit specific attention and a coherent strategy.
- *Investing in human capital and skills anticipation* to avoid labour supply shortages, education and training systems will need to adapt to these changes in skill requirements+ viable tools for skills monitoring and anticipation
- *Promoting partnership and information sharing to tackle* information failures to ensure that this leads to a timely anticipation of possible restructuring processes through effective social dialogue and involvement of all stakeholders. Example European social partners (ETUC, BusinessEurope, CEEP, UEAPME) have decided to work in 2009 and 2010 on the development of a joint approach to the social and employment aspects and consequences of climate change policies





Responses to:

- skill needs and emerging shortfalls of expanded ‘green activities’
- emerging ‘green’ technologies
- greening of existing occupations

Social dialogue

- Anticipating skill needs (demand / employer led)
- ‘Decent’, ‘just’ work (not just ‘green’)
- Developing ‘bottom-up’ initiatives to promote transition

Training and employment services

- Training the trainers (quickly expanding activities)
- Improving labour / occupational mobility
- Supporting eco-innovation (inc SMEs)



Conclusion (1)



- Global warming is the biggest and most far reaching environmental challenge the world is facing today. Efforts to adapt to climate change and to mitigate its effects will have an important impact on the labour markets in the EU.
- The combined impact of climate change and climate policies on the overall employment level is likely to be neutral or even slightly positive.
- However, the impact will differ substantially across skill types, regions and economic activities - some jobs will be lost but others will be gained.
- In terms of employment policies, the challenges are to a large extent comparable to other contemporary challenges (globalization, technological change, demographic aging). Hence the existing policy toolbox of the European Employment Strategy, in particular the employment guidelines, the flexicurity concept and New Skills for New Jobs agenda, already provide a range of policies that can be applied in response to the climate change challenge.



Conclusion (2)



- Policies along flexicurity principles should be implemented in consultation with the social partners so that workers can smoothly be reallocated towards less polluting activities and become more receptive to experimental innovations.
- Further research strengthening the EU capacity for assessing the employment effects of a transition to a low carbon economy is needed.
- Social dialogue is required in order to ensure that structural change in relation to climate change is achieved in a way that is efficient and acceptable from both an economic and social perspective.



Commission inputs on strengthening employment dimension climate change



- DG ENER address training and qualification in the field of energy efficiency (EE) and renewable energies (RES)
 - DG EMPL explore how the ESF funding can complement actions under the building workforce initiative
 - DG ENV actions within the new Eco-Innovation Action Plan (Eco-AP) focused on identifying and promoting skills development
 - DG ENV explore impacts of climate change and adaptation policies on employment and on the well-being of vulnerable social groups
 - DG EMPL/ECFIN monitoring of the employment related impacts of policies pursued under the sustainable growth pillar of Europe 2020
 - DG EMPL foster the CSR reporting in view to improve the environmental responsibility
 - DG EMPL cooperation with other institutions (EP, Council, EESC) and joint work with others (ILO, OECD, CEDEFOP, Eurofound) to fill knowledge gaps and strengthen the pro-green employment policy.
- > SWD employment dimension of the green economy (November 2010)





THANK YOU FOR YOUR ATTENTION!