



## **Impact of climate change mitigation policies on employment in the EU**

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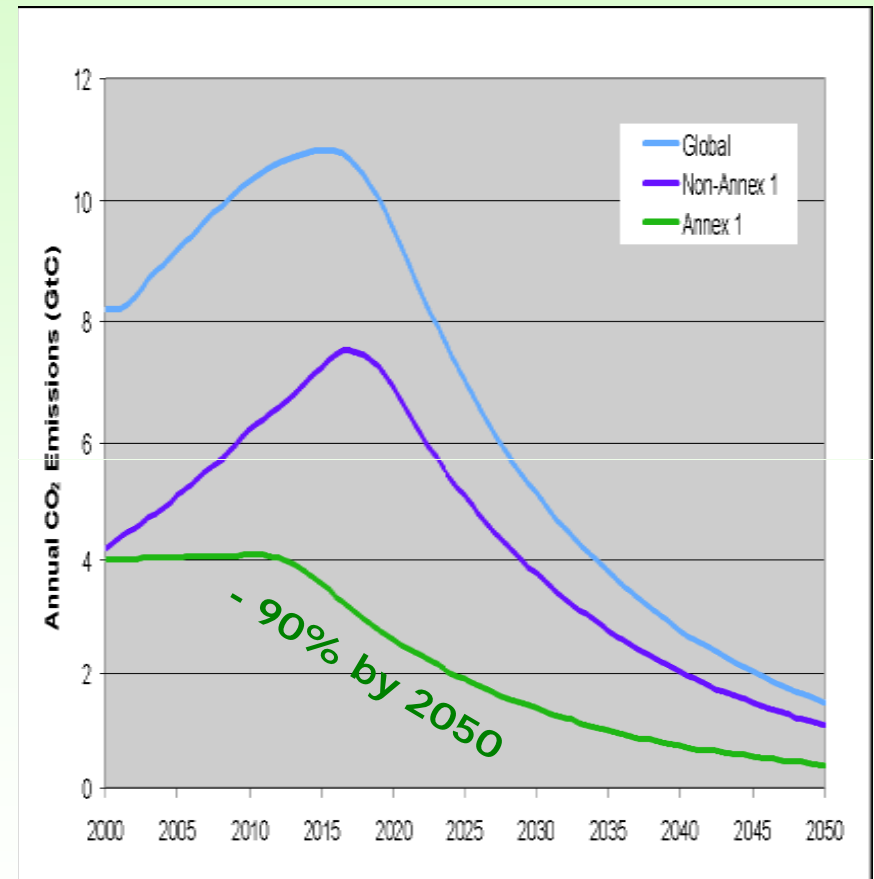
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# Outline

- What specific challenge does climate change pose to anticipation of skills and employment effects?
- Potential employment/skills consequences of 30% GHG reduction
- Conclusions

# A profound and rapid transition

- Complete 'decarbonisation' of the economy by 2050
- In a very short time frame
- The technologies exist but no 'optimal' technology-mix
- All (existing) sectors will be affected

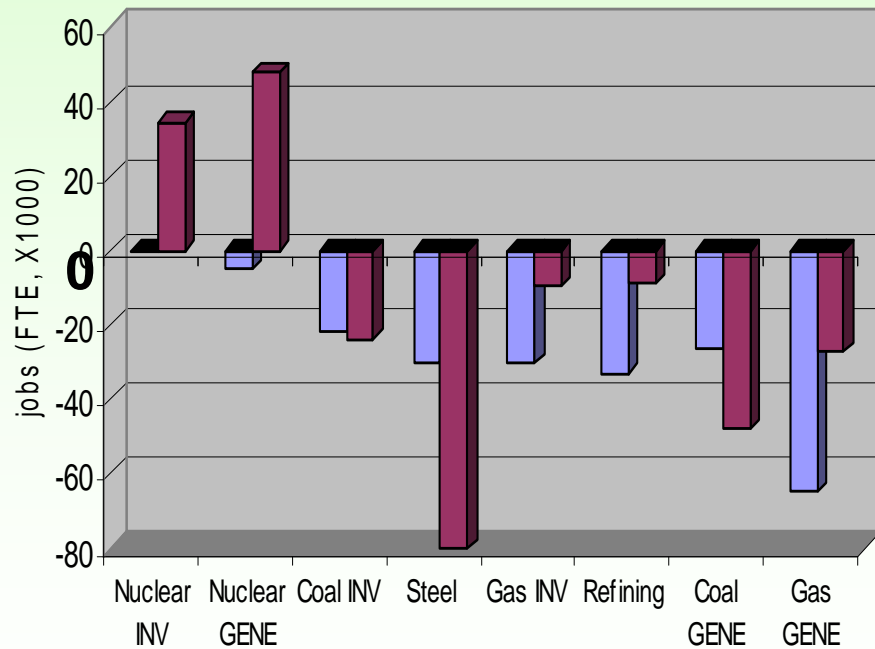


# Study 'Climate change and employment'

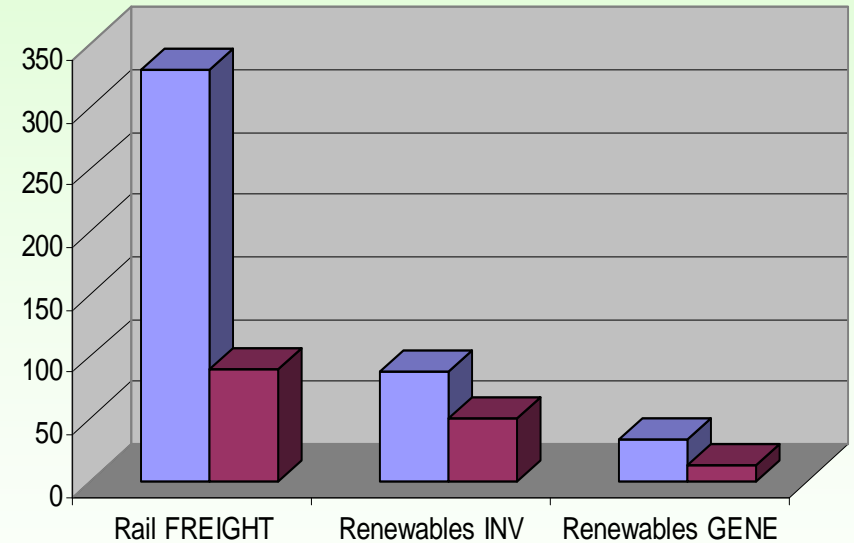
- **Research partners:** ETUC, SYNDEX, Wuppertal Institute, ISTAS
- **Assumption:** Reduction of EU GHG emissions by 8% by 2008-2012 and by around 40% by 2030
- **Sectorial EU-wide employment projections 2020 / 2030**
  - **4 sectors :** Energy production (75% of all EU GHG emissions), energy services, Transport, Energy intensive industries (steel, aluminium, cement) and Housing & construction
  - Labour intensities of different energy and transport technologies
  - Alternative mitigation scenarios, and a BAU scenario

# The overall effects on employment

## Risks for jobs in conventional energy production



## ... but opportunities in job intensive sectors



# Electricity production and supply

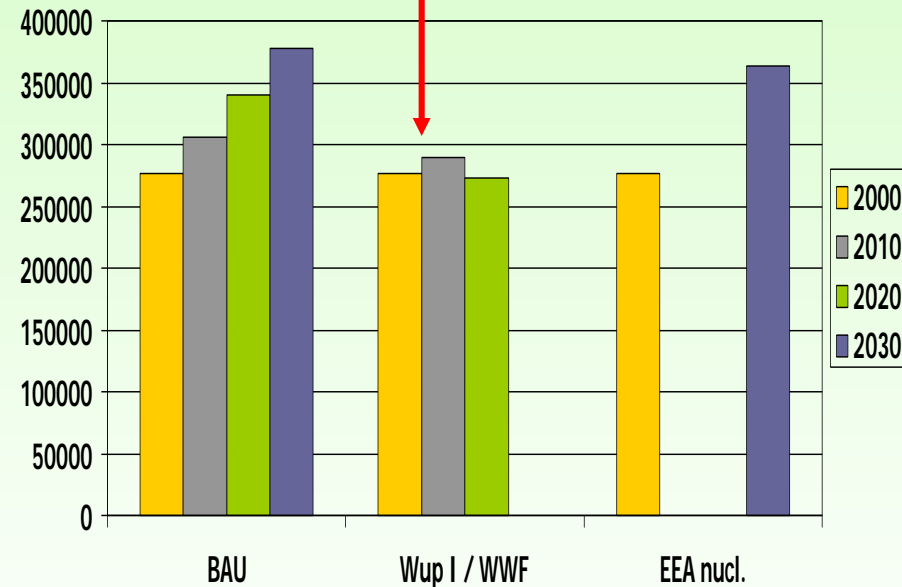
- **Energy savings** might cause slight absolute job losses...

- But new skills will be required in **energy performance services and equipment**

- Decline in **coal-based generation and mining** (50.000), except if CCS

- Job gain in **renewable energy**, mostly in manufacturing and installation (300.000 fte), and in gas

- **nuclear** employment?





# Building/construction sector

- Thermal refurbishment of buildings is **highly intensive in local employment**
  - Provide jobs to unemployed people in deprived areas
  - 1 million man-years if highest energy standards are applied, i.e. 10% of EU employment in the sector
  - 25,000 energy auditors to apply the EPBD directive
- Also potential for **highly skilled** researchers and engineers
- **Substantial training needs:**
  - Three main areas: diagnostic techniques, knowledge of renewable energy, installation
  - Organisational skills, i.e. town planning

# Transport sector

- Quadrupling in employment linked directly and indirectly to **railway and public transport** systems (compared to BAU)  
But **shortage** of skilled workforce in the railways sector
- 50% less jobs in **road freight transport** in 2030 compared to BAU, but no job losses
- **Car industry** : employment expected to remain stable (2000-2030) provided dissemination of clean technologies and increased value added.



## Energy intensive industries (Iron and steel, cement, aluminium, ...)

- Benefit from carbon regulation (i.e. iron & steel for wind blades), provided that:
  - Technological and skills breakthroughs are achieved
  - Competitiveness issues are resolved

The steel industry could lose 50.000 job losses out of 350.000 jobs

- EU Technology platforms (i.e. ULCOS) should address skills needs and involve trade unions

# Conclusion

- Structural change will cause **winners and losers**
- **Redeployment and retraining** are easier when redistribution of jobs occurs within sectors
- **'Employment transition' programmes**, encompassing European social dialogue, forecast jobs and skills management (GPEC), Creation of an EU Observatory on economic and social impact of climate change, Transition programmes for workers displaced
- **Distinguish** between climate change and other drivers of change
- **Further research**: Success factors of rapid uptake of low carbon technologies in terms of education, training, skills validation (e.g. Germany, Spain)



Thank you for your attention !

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