

# **Territorial Competitiveness and Cohesion**

## **The Effects of Rising Energy Prices**

Contribution to and ESPON workshop at the RSA Annual  
International Conference 2010



## Paper Overview – Regions at Risk of Energy Poverty


- Based on the findings of the ESPON project ReRisk
- Analyses the possible impact of rising energy prices on
  - Regional Competitiveness
  - Regional Cohesion
- Energy is becoming a key policy issue
- Big concern about increases in oil prices

## Energy prices – a major political concern in Europe

*"International oil prices have recently reached an all-time high. Estimates indicate that the current high oil prices will have long-term impacts, reducing growth and increasing inflation in the EU economy. Through higher input and transport costs, high fuel prices increase food prices. These high price levels are squeezing the purchasing power of all EU citizens, with the most severe impact on the lowest income families, and putting a strain on business. Energy intensive sectors, as well as transport and agriculture, and in particular fisheries, are most affected and face a difficult adjustment process... The response of the EU to recent increases in oil prices should be based on the assumption that prices are likely to remain high in the medium to long term."*

COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS ["Facing the challenge of higher oil prices"](#)

## Paper Overview – Regions at Risk of Energy Poverty

- To link already available data on
    - ✓ energy production
    - ✓ consumption in the European Regions
  - with their spatial characteristics, integrating
    - ✓ social
    - ✓ climate-related
    - ✓ competitiveness indicators
- 
- To obtain a clear picture on how the increase of energy prices might affect
    - ✓ regional cohesion
    - ✓ competitiveness
  - To assess which are the policy options available to regions in order to cope with this challenge

## Paper Overview - Regions at Risk of Energy Poverty

- Region's vulnerability has been measured in 3 dimensions, which account 84% of energy consumption:
  - ✓ Impacts on competitiveness and employment
  - ✓ Transport dependency
  - ✓ Social situation
- The focus has been set on energy consumption (demand) side by
  - ✓ Identifying sectors with the highest energy spending
  - ✓ Regions with high level of employment in these sectors
  - ✓ Comparing to regional industrial consumption where possible
  - ✓ Climate characteristics data
  - ✓ PV and wind potential
  - ✓ ...

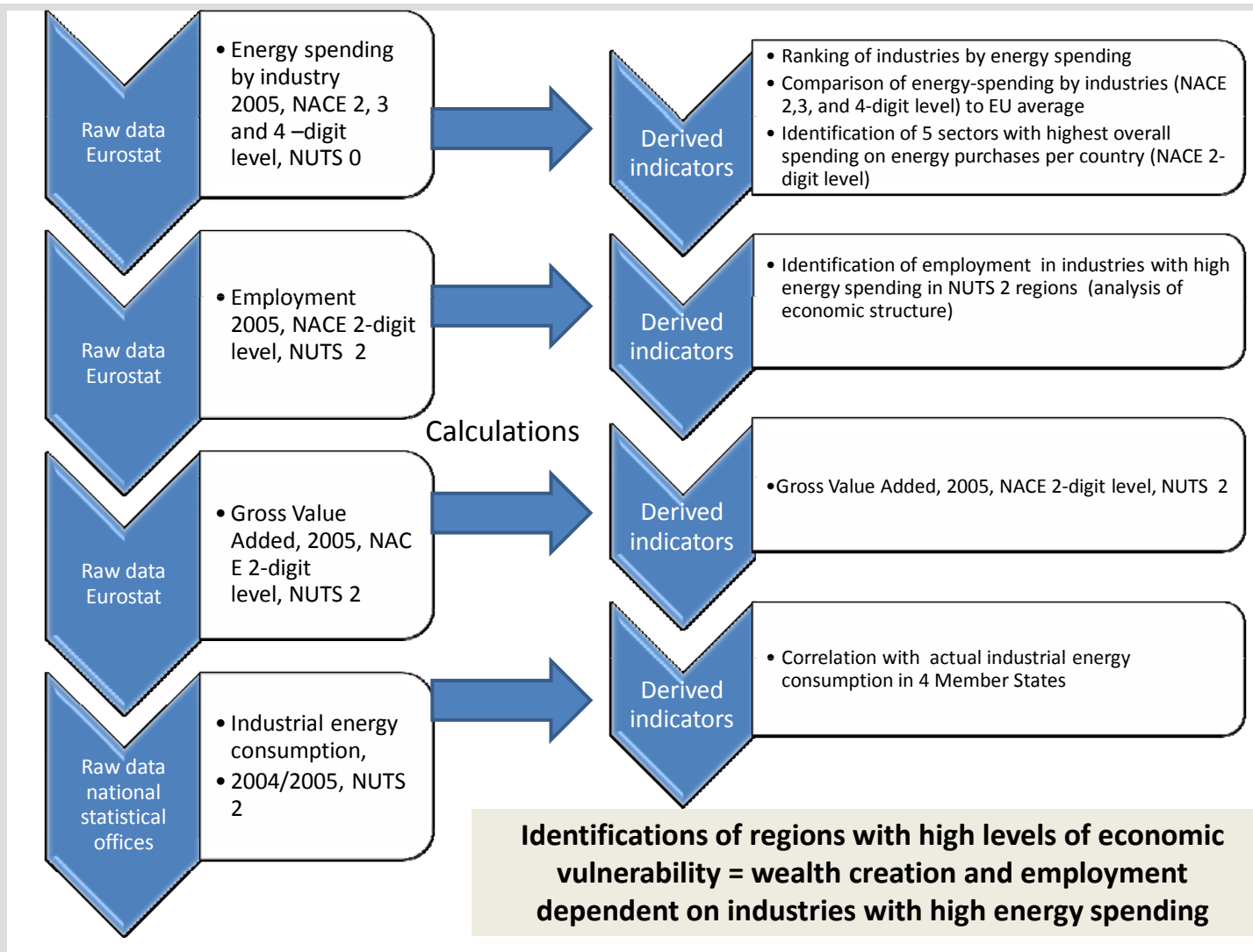
## Paper Overview - Regions at Risk of Energy Poverty

- The combined data has then been processed further in a clustering process to identify groups of regions with similar characteristics, which may be addressed by a common set of policies.
- The policy recommendations, which are the main output of the project, have also taken into account the long-term planning framework in the energy sector, which is described in four qualitative scenarios.
- Further input has been obtained from a survey of 40 regional administrations, from the case studies carried out in several EU regions (Samsø, Denmark; Navarra, Spain; Kalundborg and Landskrona, Sweden; and Freiburg, Germany) and from relevant EU policy documents.

## Understanding the Economic Impact of Rising Energy Prices

- Increases in oil prices spread across the energy sectors and the economy because:
  - ✓ gas supply contracts are indexed to oil prices
  - ✓ gas-fired power plants define the daily price in the wholesale electricity markets in most EU countries
  - ✓ International coal prices follow the upward trend, due to increased transportation costs.
- In many EU countries households are not directly exposed to these prices hikes, because end-user prices are still regulated
- The impact of energy price increases will not vary significantly in most EU Member States because of different fuel mixes in electricity production, but because of different patterns on the consumption side

# Identifying vulnerable regions



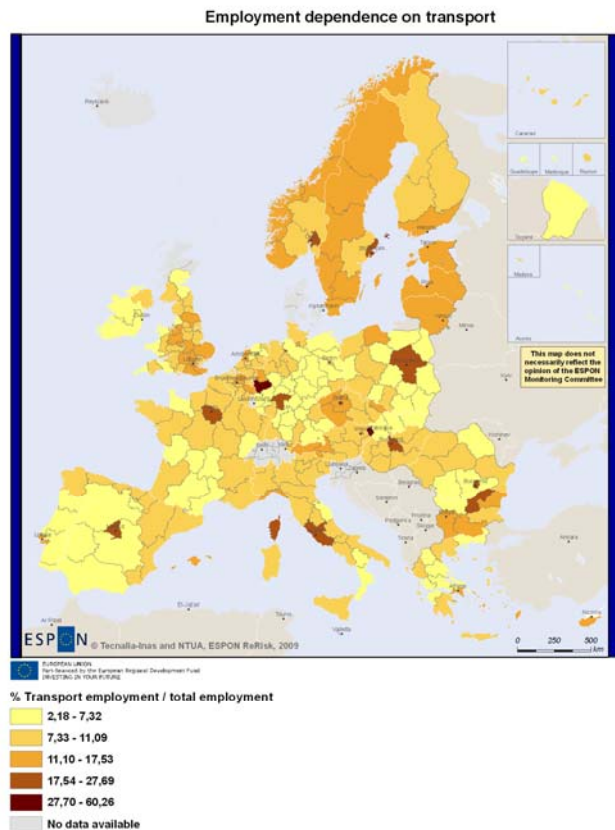
## The most vulnerable regions

**Economic vulnerability:** regions in which a high share of wealth creation or employment depends on industries with high energy spending

Region	Employment in industries with high energy purchases / total employment (%)	Region	GVA of industries with high energy spending / total regional GVA (%)
Moravskoslezsko	14.23%	Moravskoslezsko	25.13%
Emilia-Romagna	13.91%	Groningen	22.36%
Strední Morava	12.75%	Principado de Asturias	21.02%
Severovýchod	12.52%	Severozápad	20.37%
Friuli-Venezia Giulia	12.50%	Pais Vasco	18.40%
Lombardia	12.37%	Comunidad Foral de Navarra	17.82%
Norra Mellansverige	12.14%	Niederbayern	16.84%
Veneto	12.09%	Castilla-la Mancha	16.76%
Severozápad	11.49%	Prov. Brabant	
Jihovýchod	11.33%	Wallon	16.44%
Piemonte	10.95%	Emilia-Romagna	16.25%
Marche	10.41%	Strední Morava	16.04%
		Stereia Ellada	15.79%
		Zeeland	15.71%
		Severovýchod	15.64%

## The most vulnerable regions

**Transport dependence** can be measured by the % of employment in the transport sector, commuting, the cost of freight transport and the extent of air travel



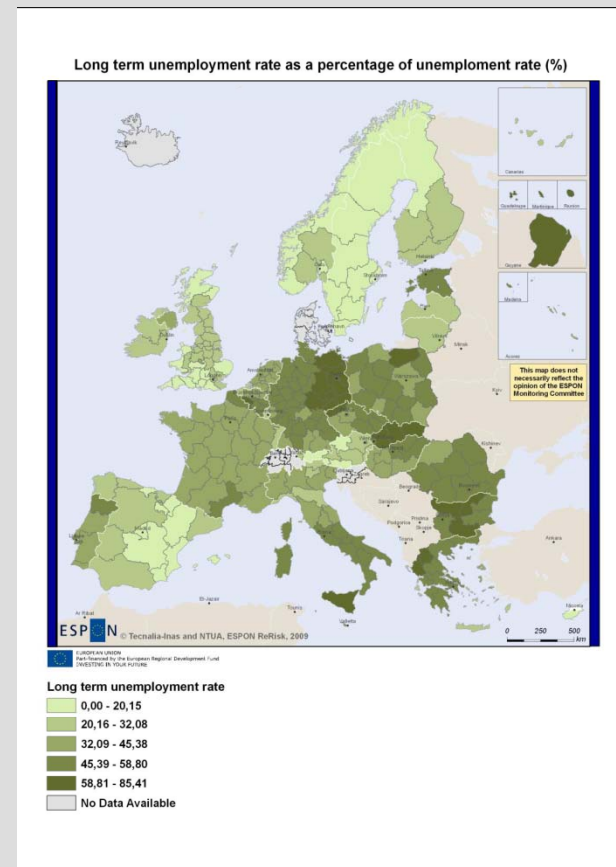
Region	Fuel costs as % of GDP 2005
Severen tsentralen	14.22 %
Yugoiztochen	8.18 %
Swietokrzyskie	7.99 %
Severoiztochen	7.16 %
Yuzhen tsentralen	6.72 %
Lubuskie	6.67 %
Podlaskie	6.59 %
Severozapaden	6.39 %
Strední Čechy	6.27 %
Región de Murcia	6.13 %

## The most vulnerable regions

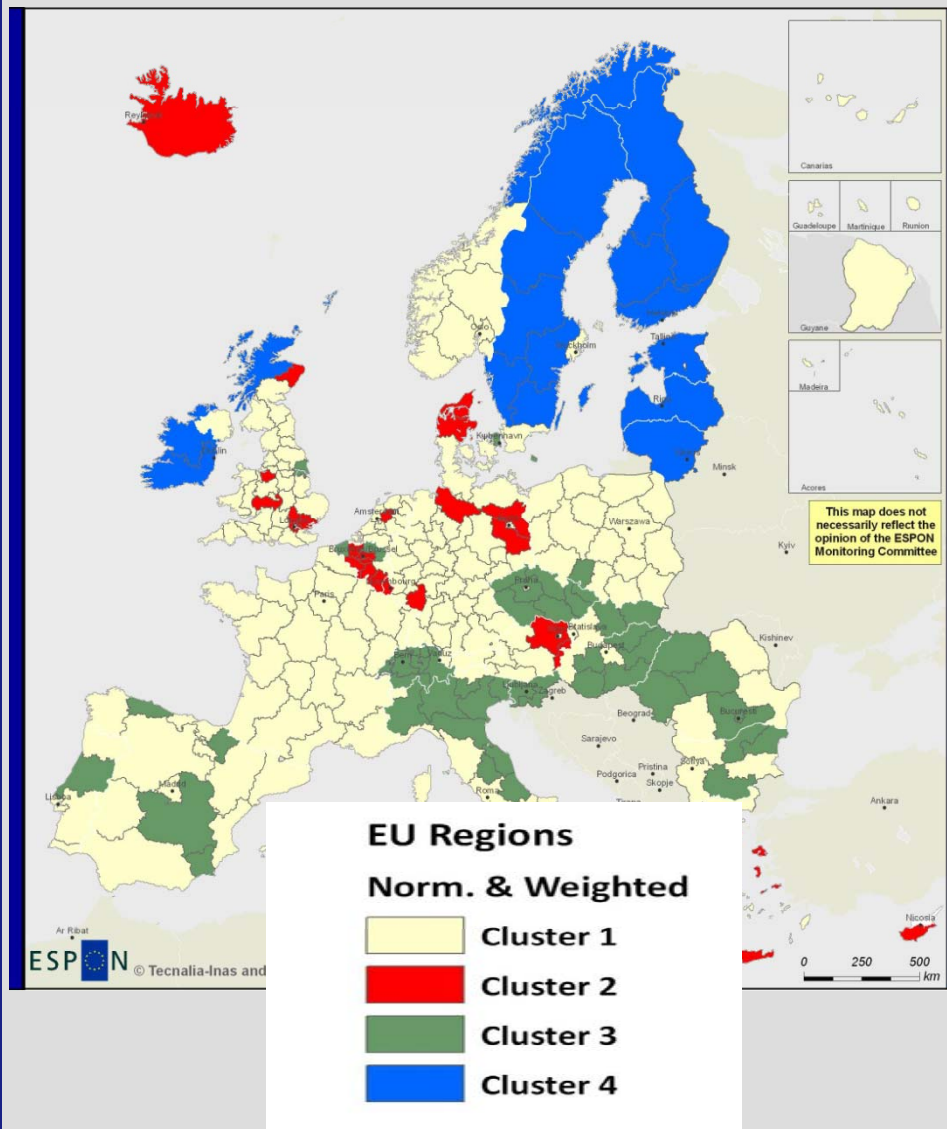
**Social vulnerability** is strongly related to the levels of poverty in the regions. Long-term unemployment and low rates of economic activity are two of the most important reasons why people slide into poverty.

### Regions with the lowest activity rates

Region	Economic Activity Rate, 2005 (%)
Calabria	41.7
Puglia	42.1
Sicilia	42.1
Severozapaden	42.9
Campania	42.9
Molise	43.0
Basilicata	43.8
Észak-Magyarország	45.0
Észak-Alföld	45.6



## Facing energy poverty



Normalised and weighted variables

- **Climate conditions**
  - mean max temperature July
  - mean min temperature January)
- **Economic structure**
  - % employment in industries with high energy purchases (x2)
- **Transport dependency**
  - fuel costs of freight transport
  - % workers commuting
- **Social vulnerability**
  - long-term unemployment rate
  - disposable income in households)
- **Production potential of renewables**
  - wind power potential
  - PV potential)

## Facing energy poverty

1. Green High- tech	2. Energy-efficient Europe	3. Nuclear energy for Big Regions	4. Business as Usual?
Emphasis on renewable energy	Emphasis on fossil energy (gas)	Emphasis on nuclear	Emphasis on fossil energy (coal)
High innovation capacity	Moderate innovation capacity	Moderate innovation capacity	Low innovation capacity
High presence of the service and knowledge economy	Balanced presence of all sectors in the economy	High presence of the primary and manufactory industry	Negative economic growth
-Urban and rural growth	-Urban and rural growth	-Urban and rural growth	-Increasing settlement centralization

## Policy Recommendations

- The policy recommendations results do not focus on energy policy only, since energy is a cross-cutting issue and therefore has to be approached from many different angles. While rising energy prices will result in structural changes in regions new business opportunities may appear in all scenarios.
- The recommendations are addressing decision-makers on regional level with the objective of:
  - ✓ reducing the regions' vulnerability on the short term
  - ✓ improving the regions' adaptive capacity on the medium and long term

## Policy Recommendations

- General policy recommendations (good governance)
  - ✓ Promote energy solidarity between regions and territories
  - ✓ Strengthen regional and local networks
  - ✓ Fund and stabilize transnational research agencies
  - ✓ Promote awareness among regional policy makers on the impact of rising energy prices and the need for economic diversification
  - ✓ Define a vision for a regional energy model 2050
  - ✓ Push municipal leadership in public-private partnerships

## Policy Recommendations

- Spatial planning policies and strategies towards a more sustainable territorial management
  - ✓ Develop integrated spatial planning instruments Strengthen regional and local networks
  - ✓ Establish urban planning principles for solar energy use
  - ✓ Implement Urban Metabolism procedures
  - ✓ Promote industrial symbiosis and/or industrial eco-parks
- All these initiatives require **good governance**
- Extended bottom-up participation processes are necessary to guarantee the efficiency of many long-term developments.

## Policy Recommendations

- Environmental Protection and Risk Prevention
  - ✓ Sustainable use of biocrops
  - ✓ Prepare for climate change impacts in the regional energy infrastructure
  
- Policies to Accelerate Deployment of Renewable Energy Sources
  - ✓ Evaluate the feasible potential of all renewable sources in the region
  - ✓ Incorporate solar and wind facilities in urban areas
  - ✓ Accelerate the transition to non-fossil fuels in the aviation industry

## Policy Recommendations

- Policies to Promote Energy Efficiency
  - ✓ Improve the data on energy use and efficiency in Europe
  - ✓ Involve end users in energy efficiency programmes and policies
  - ✓ Create a market for energy efficiency (White certificates (EC, DG Environment, 2005))
  - ✓ Improve efficiency of office design and work arrangements
  - ✓ BAT (Best Available Technologies) for industrial energy efficiency

## Some conclusions

- A large group of so far lagging regions have options for growth by exploiting their potential for renewables, while others could become even less competitive and face growing social problems.
- Some of the Pentagon regions, especially in Belgium, could benefit less from growth opportunities in the economic centres, thus dropping out of the circle of best-performing regions in Europe.
- So far wealthy regions in the European periphery, especially the North, with a heavy industrial base, may have to analyze how increasing energy bills will affect companies' competitiveness.

Thank You for your attention

