


ESPON applied research project ReRisk 2013/1/5



1. Introduction: Main Objectives of the Project

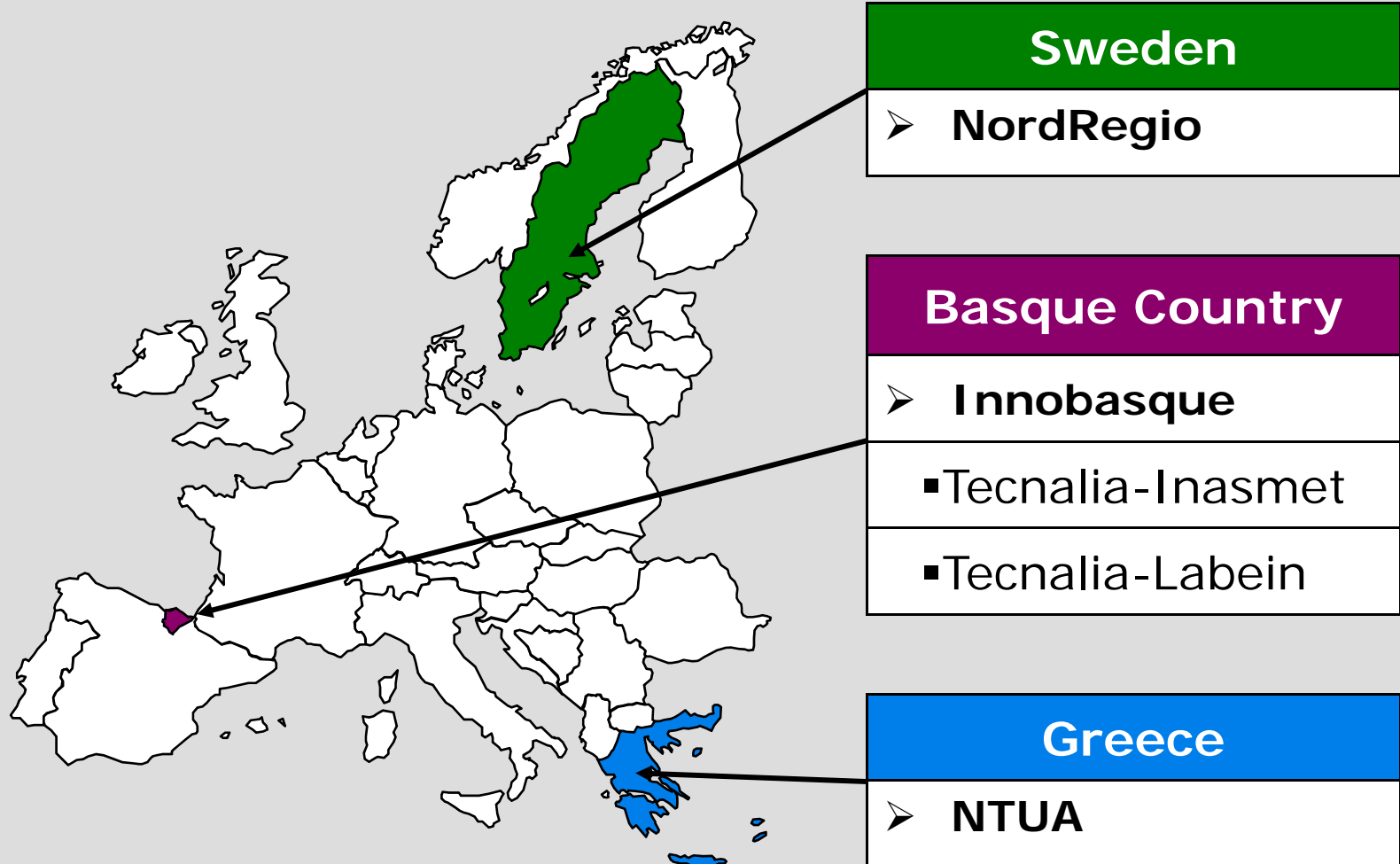
- To link already available data on
 - ✓ energy production
 - ✓ consumption in the European Regions
 - with their spatial characteristics, integrating
 - ✓ social
 - ✓ climate-related
 - ✓ competitiveness indicators
- 
- To obtain a clear picture on how the increase of energy prices might affect
 - ✓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

1. Introduction: The Commission Perspective

"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"](#)

1. Introduction: Consortium



2. Executive Summary

- The impacts of rising energy prices in economic terms are very much defined by the industrial structure in the regions and their level of specialization on industries with high levels of energy spending
- The national comparison shows that
 - ✓ within each industrial sector there are processes requiring a high level of energy purchases, and
 - ✓ regions specialized in these types of activities may be especially exposed to rising energy prices
- The regions with the most unfavourable position, due to their industrial specialization, are located in
 - ✓ the Czech Republic
 - ✓ Italy, where they represent more than 50% of industrial employment

2. Executive Summary

- The combination of transport indicators reveals that the most vulnerable regions are
 - ✓ the large logistic centres,
 - ✓ peripheral and
 - ✓ island regions
 - ✓ But also
 - some rural regions dependent on working opportunities in nearby urban poles
 - agricultural regions with high export levels.
- The reasons for poverty still have to be explored further
 - ✓ Long-term unemployment is considered one of the main reasons for poverty,
 - ✓ although there are also country-specific elements, such as
 - high divorce rates
 - elevated prices for homes in countries with low levels of rent

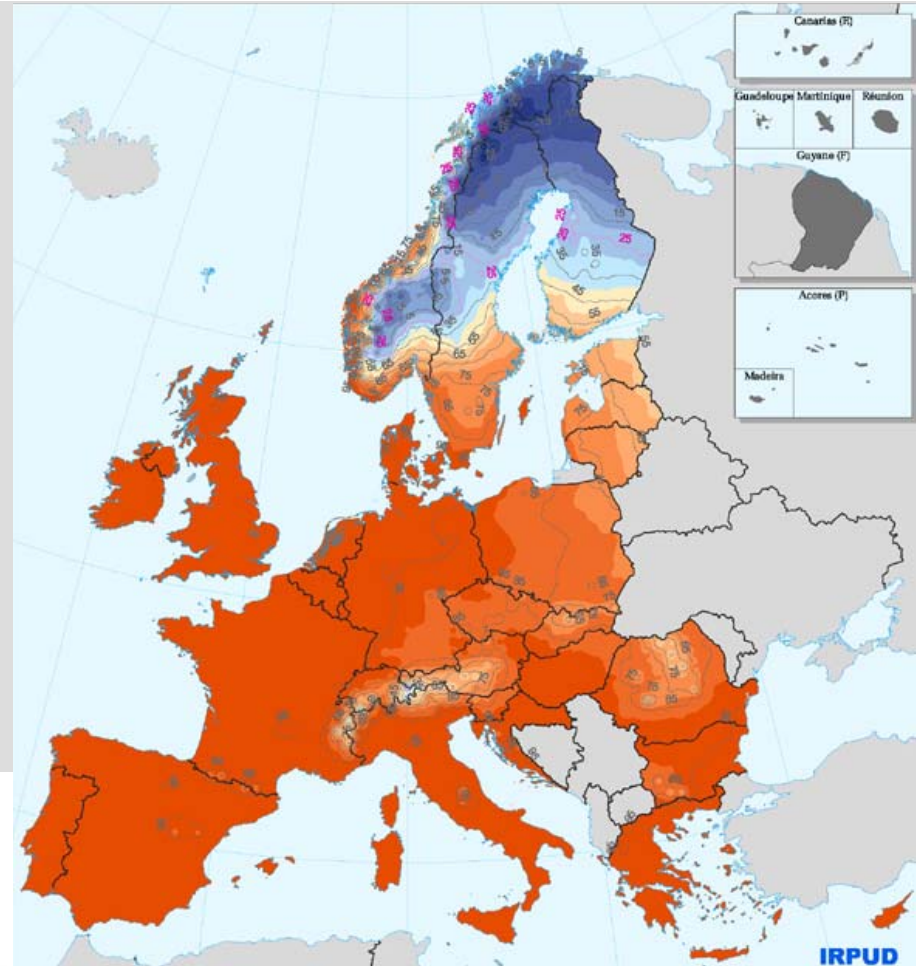
3. Working Hypotheses for ReRisk

- Increases in oil prices spread across the energy sectors and the economy
 - ✓ 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
- Historically, short-term demand-side elasticities to moderate price increases have been limited, but in the medium term, it is possible to limit the impact of rising energy prices on the most vulnerable economies

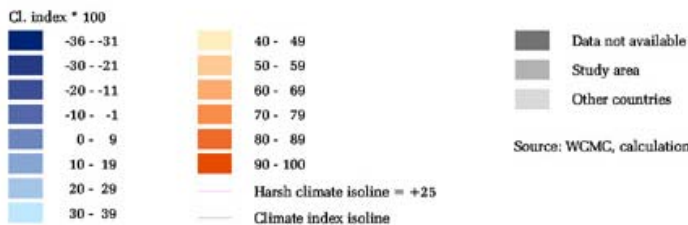
3. Working Hypotheses for ReRisk

➤ The **territorial perspective**

- ✓ is mainly related to the consumption side
- ✓ is defined by
 - climate conditions
 - economic and transport structure
 - social situation in regions and cities



Temperature contrast index for Europe, showing 0.25 isoline

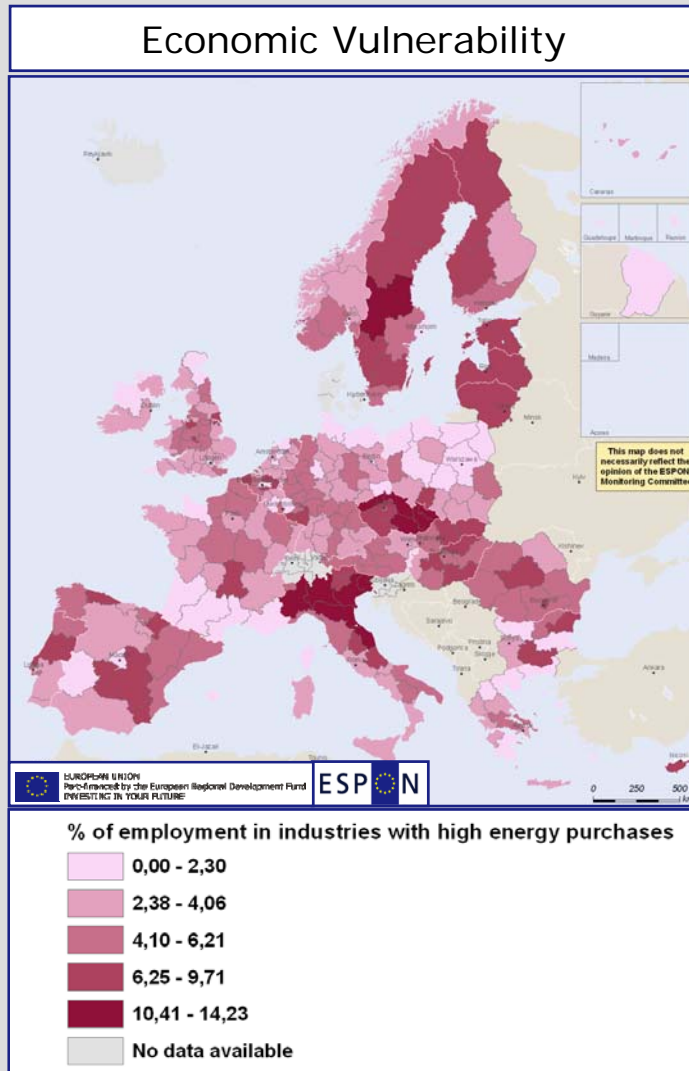


Source: Map provided by partner Nordregio and elaborated in the context of the DG REGIO Mountain Study

4. Identifying the Vulnerable Regions

- Economy
 - ✓ Identification of sectors with highest energy spending in each EU country
 - ✓ Regions with high level of employment in these sectors
 - ✓ Comparison to regional industrial consumption where possible
- Transport
 - ✓ Set of regional indicators for dependence on
 - air traffic,
 - employment in transport sector
 - commuting and
 - fuel costs for freight transport: regional dependence on motorized transport
- Social
 - ✓ Indicators reflecting the causes of poverty:
 - regional long-term unemployment rates
 - household indebtedness (national) and at-risk-of-poverty rate (national)

4. Identifying the Vulnerable Regions

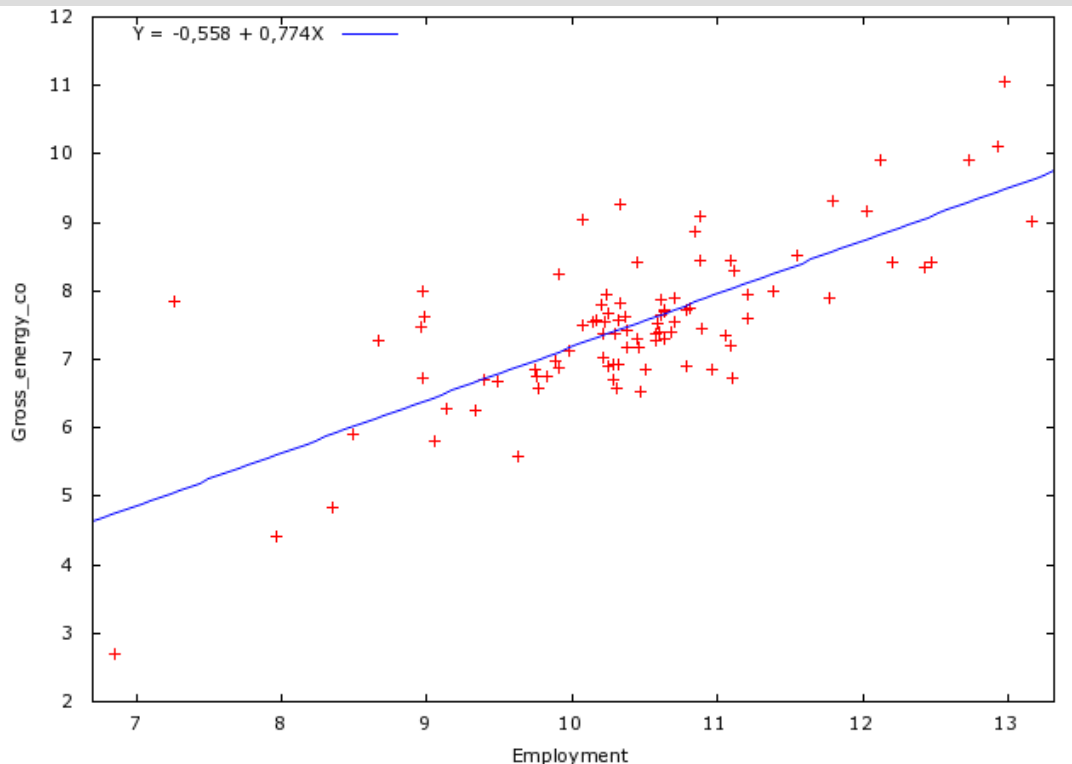


Vulnerable Regions:

- Case of the Czech Republic
 - ✓ 5 of the 8 existing regions in Czech Republic have unfavourable industrial structures in terms of energy purchases
- Case of Italy
 - ✓ The Economic Vulnerability affects some of the largest regional production centres in the country, which, combined, represent close to 50% of total employment

4. Identifying the Vulnerable Regions

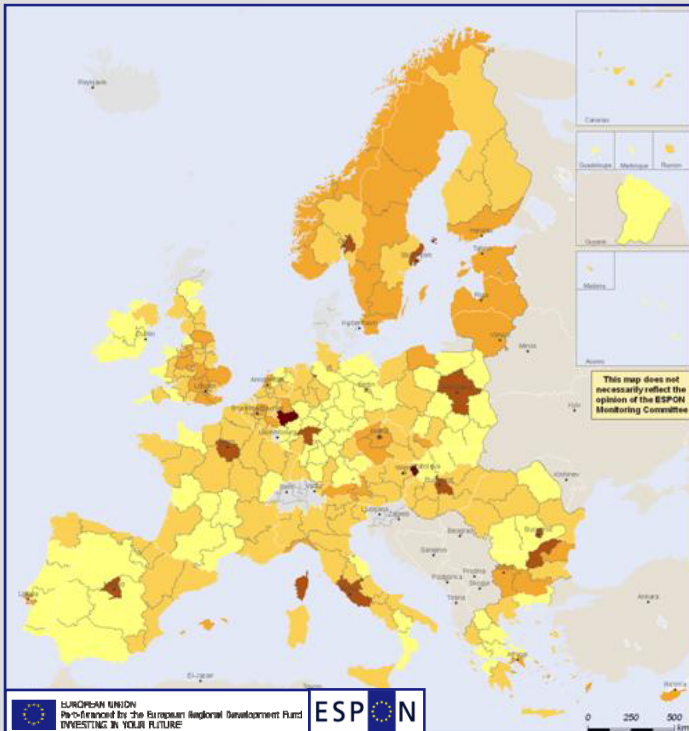
The difficulty to collect data forces to find a correlation between regional employment and industrial energy consumption



- The graph indicates a significant correlation between regional employment in sectors with high energy spending and industrial energy consumption in the regions
- However, this hypothesis still has to be confirmed by additional data on energy consumption to be Provided by Eurostat

4. Identifying the Vulnerable Regions

Employment dependence on transport



Regional dependence on transport in terms of employment:

➤ Most vulnerable regions:

NUTS II (2006)	Region	% Transport employment / Total Employment
FI 20	Åland	60.62 %
DEA 2	Köln	45.78 %
SK 01	Bratislavský kraj	38.22 %
FR 10	Île de France	27.69 %
BE 10	Bruxelles/Brussels	26.07 %
ES 30	Madrid	25.45 %
DE 50	Bremen	25.25 %
DE 71	Darmstadt	24.20 %
PL 12	Mazowieckie	24.09 %
UKI 1	Inner London	23.88 %

5. Further Steps in the Project

- To complete the reception of data from the different providers to be able to work out with the following information:
 - ✓ Climate data (JRC): necessary for analysing household energy consumption, considering the special circumstances of mountain regions
 - ✓ Urban audit data (Eurostat): required for an in-depth assessment of the risk of poverty in the metropolis
 - ✓ Energy consumption data (Eurostat): it could improve our estimates of correlations between industrial structure, employment and energy consumption
- After completing the risk profile, a clustering process will start, combining the available data
- From this process a combined indicator for the energy poverty risk in the region will be obtained
- These indicators will allow to the regional, national and European policy makers the establishment of adequate corrective policies to act upon the risk of energy poverty

6. Expected Results of the Project

- Global view of the risk of energy poverty of the European regions
- Long-term options for improving demand-side elasticities to rising energy pricing (scenario exercise)
- Web tool which will permit:
 - ✓ At regional level
 - to introduce your own region's data
 - to evaluate weaknesses
 - to define policies to
 - reduce the risk of energy poverty
 - ✓ At European level
 - To obtain a global view of the real risks of the different regions
 - To establish adequate European policies

7. Policy relevant options that could be the outcome of the project

➤ **For reducing the economic vulnerability of regions**

- ✓ Diversification of economic structure in the most vulnerable regions
- ✓ Reducing energy demand and spending in industry

➤ **For reducing transport dependence**

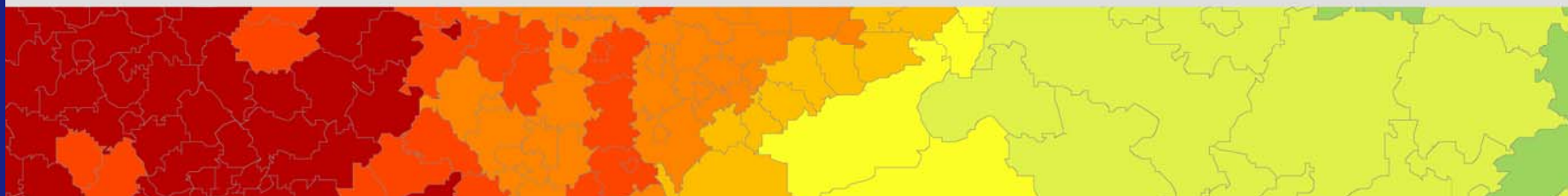
- ✓ Recommendations for diversification of economic activities in regions with a high level of dependence on transport
- ✓ Reducing fossil fuel use in transport

7. Policy relevant options that could be the outcome of the project

- **For reducing the social impact of rising energy prices**
 - ✓ Promoting energy efficiency and savings in low-income households

- **For regional policy making based on regional typologies**
 - ✓ Interregional cooperation in the energy field
 - ✓ R&D and training needs
 - ✓ Governance of local, regional and supra-regional energy systems
 - ✓ Reducing the vulnerability of the regional energy infrastructure to possible impacts of climate change
 - ✓ ...

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Thank You for your attention



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