

SPECIFICATION

ESPON Applied Research Project 2013/1/5

EFFECTS OF RISING ENERGY PRICES ON REGIONAL COMPETITIVENESS (2008-2010)

(o) Territorial challenges relevant for ESPON 2013 projects

The development of the European territory is facing several ongoing mega trends and impacts of policies:

- The integration of the EU in global economic competition is accelerating, offering regions and larger territories more options to decide their development path, as development is no longer a zero sum game for Europe.
- Interaction is growing within the EU territory and between the surrounding neighbour countries and other parts of the world. This is apparent through e.g. migration pressure on more developed countries, which are themselves confronted with population decline, and by access to and investment in new markets.
- Market forces and the evolution of society in general support a geographical concentration of activities.
- The ongoing demographic changes with an ageing European population, in addition to migration, affect regions differently and increase the competition for skilled labour.
- The occurrence of hazards due to climate change is increasing and different parts of Europe experience different types of hazards.
- Increasing energy prices and the emergence of a new energy paradigm have significant territorial impacts, some regions being more affected than others. This presents particular development opportunities for the production of renewable energy sources.
- The enlargement of the EU to 27 Member States, and potentially more, presents an unprecedented challenge for the competitiveness and internal cohesion of the Union.

ESPON results have revealed that territorial capital and opportunities for development are inherent in the regional diversity that is a characteristic of Europe. Consequently, different types of territories are endowed with diverse combinations of resources, putting them in different positions for contributing to the achievement of the Lisbon and

Gothenburg Agendas, as well as to Cohesion Policy. Territorial diversity, especially in the economic base, implies that strategies other than opting for a knowledge-based economy might be more appropriate and viable for some regions.

The ESPON 2006 Programme provided integrated analysis and long-term spatial scenarios which enriched the European policy debate and knowledge base. The results and observations on territorial structures, trends, perspectives and assessment of EU policy impacts had not been fully evident before and supported a better understanding of the European dimension of territorial dynamics. This has prompted interest among policy makers and practitioners for even more information, knowledge and understanding that ESPON can offer.

The ESPON 2013 Programme shall bring this knowledge base one step further through applied research and targeted analysis, indicator development and data collection, capitalisation events presenting results, etc. All these actions will be related to an improved understanding of territorial structures, development trends, perspectives and policy impacts.

The European-wide evidence provided by the ESPON 2013 Programme will potentially benefit stakeholders at all levels throughout Europe. Policy makers dealing with territorial development require sound evidence and comparable regionalised information in addition to medium and long-term development perspectives, in order to create sustainable and efficient integrated policy responses for their territories.

Given that the European Union is moving towards a more integrated policy approach, the territorial dimension is particularly important for policy makers. The aim of territorial cohesion proposed by the Commission supports this approach by taking the territory as an element within the framework of policy making. Due to the provision of evidence based on analyses of territorial units, the ESPON 2013 Programme is of strategic importance for European policy development and cooperation.

By further developing and expanding the existing knowledge and indicators, the ESPON 2013 Programme will play a strategic role in supporting the policy process of the 2007-2013 period, and contribute to the development of Cohesion Policy.

(i) General objectives of applied research projects under Priority 1

The general objectives of applied research projects within the ESPON 2013 Programme are the following:

- Building new evidence based on comparable information about European regions and cities, including information on dynamics and flows, and covering the entire territory of EU 27, Iceland, Liechtenstein, Norway and Switzerland.

- Addressing major territorial challenges and political priorities providing comparable information covering the entire European territory, its regions and cities.
- Providing comparable regionalised information and possible policy options for making use of opportunities inherent in territorial structures; anticipating and counter balancing negative trends and structures, taking into account the diversity of the ESPON territory and considering institutional, instrumental and procedural aspects.
- Identifying types of territories, regions and cities that share common development challenges and are affected most (positively or negatively) by the identified structures, trends, perspectives and/or policy impacts.
- Contributing to the further identification of structures within the EU territory that represent options for exploring comparative advantages and provide synergy through territorial cooperation arrangements, involving regions and/or cities.
- Contributing to the improvement of the scientific platform for European applied territorial research by refining existing concepts, methodologies, indicators, typologies, European maps and models and by defining new ones.
- Providing the knowledge and competence capabilities needed to ensure scientifically validated results of the applied territorial research with the support of Sounding Boards¹.
- Supporting the use of and dissemination of results to an audience of policy makers, practitioners, scientist and experts.

This project shall contribute to these general objectives during its implementation, and in doing so make best use of existing ESPON results, new results in other ESPON projects as well as other research results and relevant studies.

(ii) Relation of this project to the ESPON 2013 Programme

The priorities describing the work-programme of the ESPON 2013 Programme are structured in four strands:

1. Applied research on territorial development, competitiveness and cohesion: Evidence on European territorial trends, perspectives and policy impacts

The applied research projects will create information and evidence on territorial challenges and opportunities for success in the development of regions. Cross thematic applied research will be a major activity integrating existing thematic analysis and adding future analysis of new themes. Territorial impact studies of EU policies will be another focus under this priority.

¹ For each applied research project a Sounding Board will be set up, accompanying the project throughout its life cycle and giving advice to the TPG on both, scientific issues as well as relevance for policy makers. Sounding Boards will normally be made up of one scientist and one practitioner. Their tasks will consist of assessing project proposals, giving continuous feedback to TPGs and commenting on their reports.

2. Targeted analysis based on user demand: European perspective on development of different types of territories

This priority responds to a clear demand of practitioners for user and demand driven actions within the ESPON 2013 Programme. By convening an analytical process where ESPON findings are integrated with more detailed information and practical know-how, new understanding of future development opportunities and challenges may arise, which could be transformed into projects and actions.

3. Scientific platform and tools: Territorial indicators and data, analytical tools and scientific support

The scientific platform and analytical tools built up within the ESPON 2006 Programme will be maintained and further expanded. New actions shall be undertaken to develop current achievements and make use of existing indicators, data and tools.

4. Capitalisation, ownership and participation: Capacity building, dialogue and networking

Under this priority, actions are foreseen that will make the evidence and knowledge already developed operational through raising awareness and involving stakeholders in the results and practical application of them.

A strong coordination and interlinkage with other ongoing ESPON projects is crucial for achieving comprehensive results. A close cooperation with the appointed Sounding Board and the Coordination Unit must also be established as part of the project implementation.

This project belongs to the first priority. It holds a key position in preparing a common ground for a better understanding of future energy demands in different European regions and sectors as well as the elasticity of regional energy consumption. Knowledge on these issues is vital for targeted policy development in the light of Cohesion Policy aiming, inter alia, at improved regional competitiveness and sustainable economic growth in Europe's regions.

(iii) Thematic scope and policy context

Europe is entering a new energy landscape. Global temperatures are forecast to rise during the 21st century by 5°C, largely due to anthropogenic greenhouse gas emissions. CO₂ emissions from energy make up 80% of the EU's greenhouse gas emissions. On current projections, rather than falling, EU emissions would increase by around 5% by 2030. At the same time, energy prices have been rising successively and are expected to continue to rise in the future due to a growing demand in the wake of globalisation and gradually but continuously declining fossil resources.

Europe is becoming increasingly dependent on imported fossil fuels, which negatively affects the security of energy supply. With current trends and policies, the EU's energy import dependence will jump from 50% of total EU energy consumption today to 65% in

2030. In addition, the internal energy market remains incomplete which prevents EU citizens and the EU economy from receiving the full benefits of energy liberalisation.

In future, energy supply and demand will have to make significant greater use of renewable energy sources and focus more on energy-efficient methods. This will be the energy sector's contribution in the endeavour to stop the depletion of natural resources and to confine climate change, which eventually will equally improve public health and ensure economic and social growth. Therefore, concern is not only about climate change, it is also about Europe's security of energy supply, sustainable economic development and the wellbeing of European citizens.

On the occasion of the Spring European Council 2007, EU heads of state and government adopted an "Energy Policy for Europe" (EPE) which pursues the following three major objectives:

- Increasing the security of supply by limiting EU's external vulnerability to imported hydrocarbons;
- Ensuring the competitiveness of European economies and the availability of affordable energy;
- Promoting environmental sustainability and combating climate change.

A firm target was set of cutting 20% of the EU's greenhouse gas emissions by 2020. This goal could be heightened to 30% if the USA, China and India make similar commitments. The political leaders also agreed on a binding overall goal of 20% for renewable energy sources by 2020, compared to the present 6.5%. Finally, a binding minimum target of 10% was formulated for the share of bio fuels in overall transport petrol and diesel consumption by 2020.

Research is crucial to lower the cost of clean energy to put European industry at the forefront of the rapidly growing low carbon technology sector. As a consequence, the EU will increase its annual spending on energy research by at least 50% for the next seven years.

Over the past ten years, a number of substantial EU programmes have been established, aimed at supporting sustainable energy actors, both in the field of renewable energy sources and energy efficiency, to develop concrete projects, to disseminate their achievements and results, and to demonstrate the benefits of new technologies and tools. Activities in this field are continued, for instance by the "Intelligent Energy – Europe (IEE) Programme 2007-2013", a follow-up to a previous programme. The IEE Programme aims to increase use of renewable energy and to reduce energy consumption by supporting energy efficiency, new and renewable energy sources, and technological solutions to reduce greenhouse gas emissions caused by the transport sector. Likewise, the 7th Framework Programme comprises a focus of research on "Energy and Transport" in order to smooth transition to less carbon intensive and renewable sources and carriers of energy, increased efficiency of energy systems and improved safety and security of energy supply.

Against this backdrop, the project should strive to achieve a better understanding of the following key policy questions, for which it should produce supporting information and evidence:

- How can competitive and clean energy be secured for Europe? Which sources of sustainable energy generation can be activated and/or further strengthened within Europe?
- How and to which degree will an increase in energy prices impact on the competitiveness and cohesion of European regions and Europe as a whole?

The perspective of applied research under this measure shall be guided by the objective to identify broad development perspectives and trends for the different types of regions, also in the light of the Lisbon/Gothenburg agenda.

Coordination should take place with other relevant ongoing ESPON projects (first and foremost the project on “Climate change and territorial effects on regions and local economies”).

(iv) Analytical framework and deliveries expected

The project should take its starting point from existing ESPON projects and other relevant studies dealing with energy efficiency by e.g. the International Energy Agency (IEA) or the European Environment Agency (EEA). A focus on NUTS 2 level is considered to be satisfactory for this project, particularly as data shortage is putting limits to any research in this specific field. Therefore, the project will partially have to work with assumptions instead of concrete data e.g. regarding energy consumption.

The impacts of the new European energy policy and price increases on regional competitiveness in Europe are the main research issues of the project. The ESPON 2006 Programme already presented an overview of European energy supply, basic consumption patterns, as well as a tentative prospective analysis of possible effects of energy policy on regional development. Therefore, the data, indicators, and maps of ESPON 2006 are an important source for this project. It shall in particular make use of and be informed by relevant results of the following projects:

- ESPON project 2.1.4 on energy services, networks and the territorial impact of EU energy policy.
- ESPON project 3.2 on spatial scenarios in relation to the ESDP and EU Cohesion Policy also included energy determinants into the different scenarios and analysed the respective implications.

The project should strive for a comprehensive and integrated research approach, taking into account social, environmental, and economic aspects. The main focus, however, shall be on the demand side, i.e. the need for and consumption of energy. In a first step, the research should therefore analyse the dependency of different types of regions on

energy as well as their elasticity. This analysis should be followed by an assessment of regions' possibilities to reduce energy consumption and to change to renewable energy. Eventually, the project should create a new typology of regions according to the impact of increased energy prices on both, the supply and the demand side.

In the concrete design of the applied research project and its work packages, the project is expected to answer the following key research questions:

- What is the current situation in energy consumption on regional level in transport, private households, and industry and what is the elasticity like in these three sectors (i.e. how easy/difficult would it be to reduce energy consumption in different regions in the respective sector)?
- What is the level of impact that increases of energy prices could have on different types of regions (taking into account aspects such as climate, geography, population density, accessibility, weight of different economic sectors in the regional economy)?
- What will be likely responses of individual regions to energy price increases?
- In which regions and sectors (housing, transport, services, industry, and agriculture) can energy savings be realised most efficiently?
- Will it be possible – and if so, how – for different types of regions to reduce CO² emissions even more than up to the targeted 20%? What will be the effects of such more ambitious targets?
- Which regions have the development opportunities to generate substantial amounts of renewable energy?
- What kind of consequences will different paths of territorial development (e.g. development concentrated along defined corridors or on specific development poles) most probably have on energy consumption? Into which direction should territorial development be guided in order to create favourable preconditions for energy efficiency and sustainable use of energy?
- How can spatial planning contribute to regional adaptation to more efficient and sustainable energy consumption (e.g. also as coordinating discipline across sector policies)? Which transformations do regional economies have to undergo to react in a pro-active way to these changing circumstances and conditions?
- Do particular types of regions have substantial positive or negative prospects concerning their regional competitiveness?

It is important to point out here, that all research questions shall be dealt with from a territorial point of view, i.e. taking account of territorial specifics in the analysis, and relating results to strengths and development opportunities of different types of regions and larger territories. This goes particularly for the analysis of impacts as well as for the development and application of scenarios.

In order to create coherence with project findings of other ESPON applied research projects, the project should present the main final results in relation to different types of regions and cities, using existing typologies for the urban system, rural areas, mountain areas, islands, coastal areas and outermost regions. The final results should also be presented for transnational cooperation areas under Structural Funds, and - where

appropriate and possible - also for cross-border cooperation area and inter-regional cooperation areas.

The geographical coverage of the project should encompass all the countries participating in the ESPON 2013 Programme. Furthermore, the TPG should assess the data situation for their field of research in the EU candidate countries, the Western Balkans and Turkey, and report on their findings in the inception report. Depending on the respective data situation these countries would then be included in the analysis.

The deliveries of the project should make use of and complement the existing scientific platform and tools of ESPON, which are accessible on the ESPON website.

The project is expected to enhance the scientific platform of ESPON with at least the following deliveries:

- Data input to the development, update and extension of the ESPON database by additional data on regional vulnerability and responses to increased energy prices gathered within the project, particularly in relation to the new Partner States Iceland and Liechtenstein. Indicators need to offer compatibility with a map-making facility, to provide a consistent, homogenous, reliable, and up-datable database.
- Indicators offering additional information on the regional impact of increased energy prices on transport, private households, and industry, and new complex indicators, revealing regions' socio-economic situation as well as their change in competitiveness due to increased energy prices.
- Typologies of European regions classifying (1) the impact of increased energy prices on the demand side, (2) the impact of increased energy prices on the supply side.
- European maps revealing (1) the degree of vulnerability of different types of European regions to increased energy prices, (2) the energy consumption patterns on regional level in transport, private households, and industry, as well as the respective elasticity, (3) the regional development opportunities for energy savings and (4) the regional development opportunities for generation of renewable energy.

Regarding the development of new data and maps and/or the use of existing data, the TPG is expected to cooperate closely with the TPG being in charge of the development of the ESPON 2013 Database.

The results and conclusions of the applied research within the project should be formulated in relation to policy orientations present at European level and make use of the new typologies – if applicable – and maps resulting from the project.

Following the logic of the Territorial Agenda of the EU, orientations for policy makers should refer to the respective territorial development opportunities and the available options to mobilise these for the benefit of the cities, urban agglomerations and surrounding regions in question. In this respect, references to future policy options should take account of European Cohesion Policy orientations, in particular expressed in the

Community Strategic Guidelines on Cohesion 2007-2013 and the Fourth Report on Cohesion.

Project findings should make clear which impact increased energy prices could have on the competitiveness and socio-economic situation of European regions and cities as well as on the realisation of economic, social and territorial cohesion in Europe.

Finally, the project should consider avenues for further applied research on the theme.

(v) Outputs and timetable

One of the main objectives of the ESPON 2013 Programme is to focus on research with policy relevance and to contribute to the development of relevant policies. Therefore, the outputs of the research project should be highly operational and coordinated in time, as far as possible, to fit into the relevant political agenda.

The proposal for the project is expected to reveal individual work packages on project coordination, research activities, and dissemination, as well as a schedule for project implementation based on the following timetable and specification of outputs:

August 2008 (Inception report):

Twelve weeks after the award of contract, a more in-depth concept should be submitted by the TPG allowing for a detailed overview on the research approach to be applied, the methodology and hypothesis for further investigation, as well as a review of the main literature, data sources, etc. An overview of more detailed deliveries and outputs envisaged by the project shall be included as well as an indication of likely barriers that the project implementation might face. The report shall give clear orientation for the applied research previewed towards the Interim report. The research team should also report on the findings regarding the assessment of the data situation in EU candidate countries, the Western Balkans and Turkey and, on that basis, determine the geographical coverage of their research. Finally, the TPG should outline how it envisages making use of existing ESPON results that are relevant for this project.

February 2009 (Interim report):

The content of the Interim Report shall reflect the orientations given in the Inception Report as well as the results of the discussions having taken place with the Sounding Board. The report is envisaged to include elements such as:

- a) Preliminary results on the basis of available data, developed indicators, typologies, and European maps, including
 - First assessment of the vulnerability of European regions to increased energy prices.
 - First indicative identification of current energy consumption on regional levels in transport, private household and industry, as well as tentative assessment of their elasticity.

- First indicative identification of regions and sectors where energy savings can be realised most efficiently.
- First indicative identification of regions' possibilities to generate substantial amounts of renewable energy.
- Data collection achieved, including an overview on statistical and geographical data collected by EUROSTAT, and national Statistical Institutes etc.
- Draft European maps.
- First indications on the conclusions and policy relevant options that could be the outcome of the project.

b) Plan for the applied research towards the draft Final Report as well as the Table of Content envisaged.

October 2009 (updated Interim report)

An updated interim report should be delivered at that point in time in order to feed the discussion in the framework of the United Nations Climate Conference that will be held from 30 November to 11 December 2009 in Copenhagen. This report should present the results of the project at that point in time in a condensed manner (max. 20 pages) and give an outlook to the further research and the contribution to existing knowledge.

February 2010 (draft Final report):

The draft Final report will take into account feed-back on the Interim report from an ESPON seminar and by the Sounding Board. The report is supposed to include elements such as:

c) Report (max. 50 pages) on the main results, trends, impacts, and options for policy development, including key analysis/diagnosis/findings and the most relevant indicators and maps (any additional information should be included in a scientific report). Particularly important are options for policy makers, which could provide the basis for interventions related to development opportunities for improving European competitiveness and cohesion.

d) An executive summary (max. 10 pages) summarising the main results of the applied research that can be communicated to a wider audience of stakeholders. This summary should be based on the Report mentioned above.

e) Scientific report documenting the scientific work undertaken in the applied research including elements such as:

- Literature and methodology/theory used.
- Typologies and concepts developed and used.
- Data collected and indicators used, including tables with the exact values of indicators.
- Maps produced in support of the results, covering the territory of EU 27, Iceland, Liechtenstein, Norway and Switzerland.
- Tools and models used or developed.
- Future research avenues to consider, including further data requirements and ideas of territorial indicators, concepts and typologies as well as on further developments linked to the database and mapping facilities.

The MC and the Sounding Board will address the draft Final report and eventually ask for clarifications.

June 2010 (Final report):

f) Revision of the Draft Final report on the basis of comments received.

June 2010 – January 2011 (dissemination):

g) Dissemination of project results by the TPG in the framework of international conferences and seminars, e.g. transnational activities of the ECP Network, events organised by the CU. These activities need to be reflected in the budget proposed by the TPG for the implementation of the project.

In order to justify expenses claimed for refunding by the TPG, a short progress report (max. 10 pages) has to be submitted to the CU every six months during the project's period of implementation. This should consist of an account of progress in the individual work packages according to the schedule in the proposal. The report also should allow an overview on the development of the project regarding development and use of methodology, results at different steps and next steps to be taken within the following six months.

Irrespective of the above mentioned reports to be submitted at certain stages in the project life cycle, the TPG is expected to give presentations on the state of their research or/and the results in the framework of internal and external ESPON seminars. Therefore, when setting up the project proposal, the TPG should also allow for travel expenses for the attendance of ESPON seminars.

(vi) Existing access points

Synergies and use of results from outside the ESPON regime shall be sought. In particular, research activities by international bodies like the OECD might be valuable for this project.

The other access points listed below can serve the purpose of providing the TPG useful information for preparing a proposal. It is by no means meant to be exhaustive, but should be considered as information that can be helpful in tracing additional useful background information.

- ESPON projects results, data and maps: www.espon.eu
- Commission of the European Communities (2007): An Energy Policy for Europe.
- Commission of the European Communities (2006): GREEN PAPER - A European Strategy for Sustainable, Competitive and Secure Energy.

- International Energy Agency (IEA) (2007): Toward a Clean, Clever & Competitive Energy Future.
- European Environment Agency (EEA) for reports on energy and indicators <http://www.eea.europa.eu/themes/energy>
- INTERREG Project Database, offering a selection of projects completed within the INTERREG III Programmes throughout Europe, that can be searched for by theme, e.g. energy: <http://www.interact-eu.net/604900/604903/0/0>