



## **GIE's answer to the European Commission's Public Consultation on Energy Roadmap 2050**

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### **Context**

The European Commission has started a public consultation on Energy Roadmap 2050 until 7 March 2011. The consultation paper provides for the context of this consultation:

*"The European Commission will put forward an Energy Roadmap 2050 in 2011. It will follow the Roadmap for a Low-Carbon Economy by 2050 which will focus on reductions in greenhouse gas emissions across the EU economy, in the context of the European Council's target of an 80-95% reduction in EU greenhouse gas emissions below 1990 levels by 2050 [European Council 2009, a commitment in a context of such reductions by developed countries as a group].*

*The Energy Roadmap 2050 will aim at presenting different pathways to reach the objectives in the sector. It will address the established objectives of EU energy policy – sustainability, energy security and competitiveness –, and focus on how energy security and competitiveness can be improved throughout the transition to a low-carbon energy system.*

*We are not starting from zero. In 2007, the European Council set a direction with the 2020 milestones [Presidency Conclusions, European Council, 8/9 March 2007: including commitments to achieve at least a 20% reduction of greenhouse gas emissions by 2020 compared to 1990; binding target of a 20% share of renewable energies in overall EU energy consumption by 2020; and an objective of saving 20% of the EU's energy consumption compared to projections for 2020]. This has been followed up with measures of various types and has recently been addressed in a comprehensive strategy to 2020, encompassing energy efficiency, technology, infrastructures and the development of the internal energy market.*

*The EU approach must now be placed in a long-term perspective, beyond 2020. Many of the investments which are needed in the energy system are long-lived, so as much clarity as possible about policy after 2020 is needed now. More generally, clear thinking about the future can encourage the take-up of the widespread opportunities which the transition to a low-carbon energy system can offer.*

*The EU framework, both policy and market, should allow a cost-effective transition to a low-carbon energy system, developing resources, technologies and skills across Europe, getting the best out of investments and achieving effective relations with external partners. It should be a cost-effective basis for energy security and should have reasonable impact on energy prices. It should present the path to follow to provide the strongest boost to our security of supply and the competitiveness of the EU economy. This is what we are seeking.*



*Scenario analyses so far suggest that the transition to a low-carbon energy system can be feasible in technical and economic terms. The roadmap should provide the best path to follow and the analytical base to define the required policy initiatives.*

*The Commission is undertaking analyses of scenarios as a basis for identifying areas where further development of EU energy policy may be necessary and for discussing policy options. The Reference Scenarios will project business-as-usual, continuation of existing policies. It is clear that this scenario will not be enough in terms of reduction of emissions.*

*A single prescription on how the EU energy system should best develop between now and 2050 would not be credible. So we will be looking at a range of possible scenarios to 2050, as a basis for policy discussions and proposals.*

*The Commission (DG Energy) invites you to contribute to the preparation of the Energy Roadmap 2050 by providing your views. You may wish to contribute on scenarios to 2050, including important drivers and possible responses in Europe. You may wish to focus on developments and issues which you think are particularly important and need to be addressed. The following questions may help. Please feel free to refer to supporting material.*

*The Commission will prepare a report in April 2011 summarising what we expect will be a wide variety of perspectives, analyses, issues and recommendations put forward by stakeholders. On the basis of this report, the Energy Roadmap 2050 will be put forward later in 2011.*

*The Energy Roadmap 2050 should get us all thinking about how the transition to a low-carbon energy system in a changing world can best be managed, and the challenges and opportunities it can offer. In particular, it will aim at ensuring continuous improvements in terms of security and competitive supply.*

This document gives the GIE answers that will be filled in the electronic questionnaire.

## **Questions and answers**

### **IDENTIFICATION**

#### ***Your profile***

- Organisation

#### ***Organisation name (max. 50 characters)***

Gas Infrastructure Europe (GIE)

#### ***Organisation type***

- Industry and private sector, incl. their associations, excl. SMEs



### **Main field of activity**

- Infrastructure

### **Region**

- Other

### **Which other region and country (max. 50 characters)**

26 countries : EU, Turkey, Norway, Switzerland

### **QUESTIONS**

**1. How can the credibility of work on the transition to a low-carbon energy system in 2050 be ensured ? (for example regular updating of projections using energy system models, focus on developments in technologies, level of expertise needed in each sector, ...) (max 500 characters)**

The credibility is higher if proven and affordable technologies are used and if the required investments are actually getting materialised. Regular updating of projections is necessary to take into account developments in technologies (i.e. shale gas). The modelling should be based on transparent criteria/assumptions. The economic impact and the cost efficiency of the proposed measures throughout the transition period should be included in the modelling.

**2. Looking forward, EU energy policy may be increasingly influenced by developments in global energy supply and demand, international cooperation on climate and initiatives taken outside the EU. Which developments should be considered in the Energy Roadmap 2050 ? On which do you think a stronger EU line is necessary? (Pick three most important ones)**

- global energy efficiency and demand developments
- global development of carbon capture and storage (CCS)
- development of energy resources in neighbouring countries and infrastructures linking them with the EU market

### **Which other developments should be considered? (max. 100 characters)**

A complete transition plan with mid-term goals

**3. What societal challenges and opportunities do you think are likely in Europe over the next decades as a result of changes in the EU and global energy system? On which ones do you think a stronger EU line is needed? (Pick three most important ones)**

- increased importance of access to high-performance energy infrastructures (e.g. smart meters and grids)
- public acceptance of new infrastructures needed for the EU market (e.g. large storage technologies, pan-European grid)
- changed patterns of disruptions in energy supplies, both fossil and electricity



***Which other societal challenges and opportunities? (max. 100 characters)***

***4. The EU's approach to energy policy is founded on regulation and an internal energy market providing competition, innovation, energy efficiency and development of resources including renewables, environmental sustainability, energy security and solidarity, and effective relations with external partners. Which are the main areas which you think might need further policy development at EU level, in a 2050 perspective? Please specify what you think is needed, references to supporting analyses welcome. (Pick three most important ones)***

- carbon pricing
- development of infrastructures
- renewables

***Which other main areas? (max. 100 characters)***

Clear message on future energy mix is needed to foster investments in infrastructure.

***5. Which milestones would you see as most useful to specify at this stage for the transition to a low-carbon energy system in Europe? References to supporting analyses welcome. (max. 2000 characters)***

The path to 2020 will be achieved mostly using current technologies. By 2030 some new technologies may be introduced while by 2050 nearly all energy-producing assets will be replaced and the new technologies that have proven efficient may become widespread.

New technologies, such as the regenerative production of gas (“power to gas”) among others, will assist defining gas as an essential component in the future low-carbon economy framework, by using existing and new gas infrastructure, the available technology developments, or similar technologies. Compared to cost intensive new electricity infrastructure - such as Supergrids - triggered by renewables, gas infrastructure delivers already today better energy storability and transportability on a lower cost level.

In the transition to a low-carbon economy, natural gas will play a key role in ensuring back-up for intermittent renewable sources (i.e. wind, solar). Electricity production on coal and oil should be progressively switched to natural gas. Biogas could be developed where possible and not competing with agriculture. CCS should be developed for electricity production and big industries.

Market-based mechanisms should provide for the most cost-effective measures to achieve the targeted reduction of CO<sub>2</sub> emissions. The long-term visibility of CO<sub>2</sub> price should foster investments in the right technology. Energy should remain affordable during the transition.

In a low-carbon economy, natural gas should play a key role as it is still affordable, abundant and acceptable. Natural gas infrastructures (transmission, UGS, LNG terminals) and CHPs provide for backup for intermittent energy sources; CCS ensures the carbon-neutrality of natural gas uses, the pan-European network of pipelines transports energy to where it is needed, supported by storage infrastructure and LNG terminals. Natural gas is provided by pipeline and LNG from across the world.



**6. What are the most likely key drivers for the future energy mix in the EU ? (Pick three most important ones)**

- global fossil fuel prices, compared to costs of domestic energy resources
- international framework for cooperation on climate
- public acceptance of new energy technologies and the related infrastructures

**Which other key drivers ? (max. 100 characters)**

**ADDITIONAL SUGGESTIONS AND THOUGHTS**

**7. Do you have additional suggestions or more specific thoughts on the Energy Roadmap 2050 ? (max. 2000 characters)**

See GIE position paper of 7 March 2011 on “Roadmap for a low carbon economy by 2050” at [www.gie.eu](http://www.gie.eu).

GIE considers that meeting the EU’s very ambitious commitments towards a low-carbon economy by 2050 will require parallel development of energy efficiency measures, the development of renewable energy sources and the deployment of carbon capture and storage (CCS). Most importantly, these developments will have to be accompanied by a significant development of new natural gas infrastructures. Policy developments on permitting and financing would foster the development of infrastructure.

Natural gas is the cleanest, most efficient and versatile of the fossil fuels, making it a unique choice in the path towards a lower carbon energy mix and sustainable future. More importantly, the abundance of natural gas, its competitive cost of supply, its immediate availability and the flexibility to enable renewable energy clearly favours it as the best source to address emission reductions at the lowest cost.

The broad scale of already available high efficient technologies for gas needs to be highlighted. For instance, cogeneration or combined heat-and-power (CHP), they have an efficiency higher than 80%. Gas technologies might be also favoured as they can be applied not only by the big industry but also by the SMEs as well as by the domestic consumers.

CCS contributes to CO<sub>2</sub> reduction. A strong support to European CCS projects in the years to come is needed. CCS for gas is an effective alternative to CCS for coal. Transmission System Operators and Storage Operators can use their experience to help in the development of build this new business which is close to their current activity. However, many problems, difficulties and threats have to be resolved when developing CCS activities: public acceptance, funding, CO<sub>2</sub> prices and a stable regulatory framework are factors which should be taken into account.

Natural gas has a key role towards and in a low-carbon economy.