

Submission to House of Lords inquiry into EU energy policy,

2nd October 2012 by Karsten Neuhoff¹

I. A common EU approach to transforming the energy system

The shift towards a low-carbon scenario for the energy system implies a shift from the import of fossil fuels towards the investment in low-carbon generation technologies. Simulation studies show that on average across the next decades the total system costs are similar across different scenarios, but comprise 48% capital costs in a high renewables scenario instead of 39% capital costs in the current policy initiatives scenario.² Thus early investment can contribute to economic growth, while reducing future fossil fuel imports reduces costs and risks for the economy.

A common European approach to transforming the energy system can reduce the cost of the transformation and enhance security of EU energy supply in three ways.

First, an integrated energy system – both on gas and electricity – allows countries to share resources. The natural resource of wind, solar, bio-mass and marine energy varies across regions and time. An integrated electricity transmission system allows access to some lower cost resources.³ Integrated electricity and integrated gas systems also reduce the need for expensive storage capacity in any country, because not all countries will require the storage at the same time, as damages to infrastructure, the production from wind and solar plants, and potential interruptions of supply from third countries happens at different periods. Thus an integrated energy system enhances energy security and reduces costs for consumers.

Secondly, EU Directives provide an opportunity for governments to commit to mid-term objectives, because once a Directive is agreed both by heads of state and the European Parliament; it will be difficult to change. This is the type of commitment that investors seek to pursue investments in innovative technology and upgrading and scaling up of manufacturing capacity. Thus the longer-term commitment embedded in a European approach enhance innovation and reduce costs for low-carbon transformation of the economy.

Third, international companies and the finance sector can more easily incorporate a common European approach in their strategic choices than a mosaic of national policy decisions. Thus a common European approach enhances the effectiveness of policy and thus requires less policy interventions to guide the economy towards enhanced investments in innovation and low-carbon technologies. In the absence of a common European approach, political concerns about competition among EU member states will reduce role of economically efficient market based instruments (e.g. carbon pricing) in the policy mix. In the absence of a common European approach, many of the internationally oriented companies will also struggle to respond to the variety of different policy signals from EU countries, creating the risk that these policy signals will be often ignored.⁴

The main risk of a common European approach relates to the complexity of the European decision processes, often requiring unanimity among EU governments. This can result in delays and watering down of policy decisions. Therefore it is essential that EU member states provide mutual

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² See EC 2011, Energy Roadmap 2050 (table 40/41).

³ See for example “Shaping an effective and efficient European renewable energy market”, Final report of EU research project Re-shaping, <http://www.reshaping-res-policy.eu>

⁴ See for example “European Electricity Infrastructure: Planning, Regulation, and Financing”, Neuhoff, and Boyed

support and encouragement towards the implementation of existing EU Directives and contribute to the European momentum by taking a lead on specific policy items – both through demonstrating their success in the national context and by putting them on the European policy agenda.

II. The Internal Market in Energy

The Directives relating to the internal energy market have a strong focus on the delivery of efficient short-term markets, in the expectation that this will be the basis for future revenues for investors. In recent years the public good nature of many infrastructure investments and the core role of transmission infrastructure for security of energy supply, energy costs, and the de-carbonisation of the energy sector has motivated the development of the EU infrastructure package. The effective implementation – particularly in light of the changing mix of electricity generation technologies – of the third energy package and the infrastructure package will still require careful attention in the coming years.

The committee raises the additional important question to what extent governments should dedicate additional attention to the supply chain of several of the low-carbon technologies. Investors into the supply chain face the risk on the performance of their own technology relative to the technology of competing firms. This risk – together with the upside opportunities – is the incentive that encourages innovation and is a necessary driver for an innovative economy.

In addition to risks relating to technology uncertainty investors face uncertainties about future policy developments, in particular on the pace at which governments will implement and refine policies to guide a shift towards a low-carbon energy system. Reducing this uncertainty is key and an essential contribution to attract innovation and investment in the supply chain for low-carbon technologies in European countries. This requires both clarity about the longer-term development and credibility of any such longer-term commitments. Investors deduce this credibility from the actions of current policy makers – are they dedicating resources and time and pursuing policies that are consistent with this longer-term objective.⁵

III. Reducing the costs of energy for business and consumers

A multitude of factors determine the preferred location and thus investment choices of firms, including the institutional stability and quality, availability of qualified employees, a supply chain for inputs and service industry to support production, and suitability of infrastructure. Costs of labor, services, infrastructure including energy and transport, and tax levels and structure are obviously equally important decision factors.

Against this bigger picture, firms will trade-off opportunities and costs across all input factors ‘offered’ by different countries if they are in a position to decide whether and in what country to invest. For most firms energy prices and costs are therefore only a minor factor in their investment choices. This is prominently illustrated by the limited attention that most companies dedicate to energy efficiency in their investment and operational decisions despite the opportunities energy efficiency offer to delivery lasting reductions of energy costs.⁶

⁵ See paper Relative Importance of Different Climate Policy Elements for Corporate Climate Innovation Activities: Findings for the Power Sector Karoline Rogge (ISI Fraunhofer), Tobias Schmidt (ETH Zürich) and Malte Schneider (ETH Zürich), as part of the Climate Strategies Project Carbon Pricing for low carbon investment.

⁶ “Organisational factors stemming from ignorance and inertia, or from internal structures that prevent the relevant persons from realising the financial/business benefits of decisions that improve energy efficiency, result in inconsistencies in capital deployment and neglect of opportunities that would be cost effective for the overall organisation.” The UK Climate Change Programme: Potential evolution for business and the public sector, The Carbon Trust, 2005.

For some sectors, contributing to about 1% of UK GDP and a similar share to the overall European GDP, energy costs are a more significant factor. This is illustrated in Figure I based on the cost increase that a 20 Euro/t Carbon price would create relative to the value-added in the sector. (Note the figure not only captures the impact of the carbon price on energy costs, but also on process related emissions which are particularly relevant for lime and cement production).

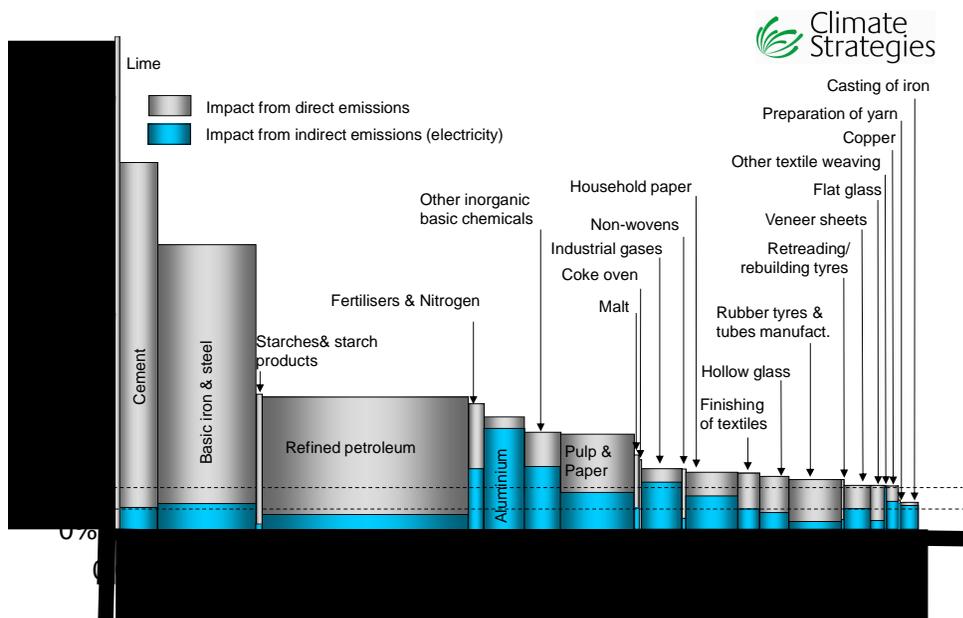


Figure: Sub-sectors of the economy that are particularly energy and carbon intensive.⁷

For example in primary steel production (not recycling of scrap based on electric arc furnaces) or in primary aluminum smelting (again, not recycling), carbon and energy price increases can significantly impact on profitability. As such, examples from iron or aluminum production are not representative for the overall manufacturing sector but illustrate challenges specific to a very small number of energy intensive activities. This suggests that policy discussion and response with regard to energy prices should clearly differentiate between a small number of very energy and trade intensive basic commodities and the overall economy.

For these sectors it is likely to be difficult to advance a national policy that results in higher energy and carbon prices so as to encourage a more efficient use of energy and reducing carbon emissions, without similar measures pursued across other European trading partners. This suggests that effective policy for these industries is particularly dependent on cooperation and a joint approach across EU countries.

One instrument to deliver this integrated approach is the European Emission Trading scheme. It has been effective in capturing the attention of business across Europe and beyond for climate policy, but is currently suffering from an excess supply of allowances due to large imports of off-set credits and a lower than expected capacity and of private firms to bank allowances for future use at times of higher scarcity.⁸ The currently very low carbon prices not only reduce the viability of any low-carbon investment choice, but also cannot encourage firms to explore low-carbon business strategies. A coordinated policy response at the European level is required – and illustrates thus the need of continued cooperation for an effective European energy and climate policy.

⁷ Hourcade, J.-C., Neuhoff, K. Demilly, D. and Sato, M., 2008, Differentiation and dynamics of EU ETS industrial competitiveness impacts, Climate Strategies Report: January 2008.

⁸ See for example “Strengthening the EU ETS - Final Report”, <http://www.climatestrategies.org/>

Most energy intensive activities – perhaps excluding one or two of the basic chemical products – expect a stable or declining demand for their products across most European countries. Thus limited investment is required to increase production capacity. Firms instead sweat existing assets, at the expense of product quality, accepting gradually declining international cost competitiveness. Major investments are instead pursued in countries with growing demand. Innovative capacity will move along with such major investment programs to the Asian and South-American region.

Large additional investment will only be necessary in Europe, if characteristics of products change (e.g. investment in refineries to match new environmental standards and product mix). Climate policy could create such a demand for new product and processes with higher energy efficiency and lower carbon content, and thus could trigger investment in European countries. Thus climate policy can well become the driver for economic activity across many sectors of the European economy.