

FOCUS

Energy: sustainability, affordability, security

Energy policy: squaring the circle

Energy issues are high on the agenda of policy makers; they are concerned with 'energy development including energy production, distribution and consumption. The attributes of energy policy may include legislation, international treaties, incentives to investment, guidelines for energy conservation, taxation and other public policy techniques.'¹ The objectives are not much debated: energy should be 'available', 'affordable' and 'sustainable'.

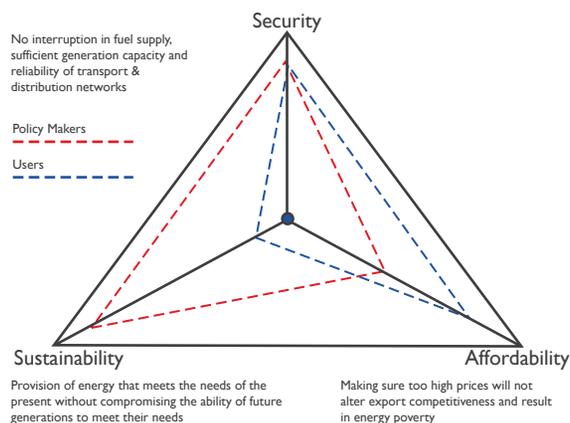
There are two issues here.

First, the most appropriate workable solutions to achieve each objective need to be identified. But since we are talking about long-term, capital-intensive projects in a context of technological uncertainty and scarcity of funds, there are no straightforward answers.

Second, these objectives are not fully compatible. Years ago, France decided to install massive nuclear capacity because of its energy dependency. Since then French citizens can count on secure, cheap electricity, but not all agree on it being sustainable. Coal is cheap... but also dirty! Renewable energy may be fine for the planet, but it is intermittent and also expensive. So, what should the priority be? What should the energy mix then be? Opinions diverge (see figure).

Whereas policy makers tend to be concerned primarily with sustainability and security of supply (availability) – at least in Europe – users, industry or households, place availability and affordability first. The problem is that availability and sustainability come at a price that may

1. *Energy Policy: Economic Effects, Security Aspects and Environmental Issues*, edited by Noah B. Jacobs



Source: Research Centre for Energy Management, ESCP Europe Business School

not be deemed affordable by users, who also happen to be voters. An increasing number of poor households has made fuel poverty a major political issue all over Europe. And increasing competition on world markets means high energy prices also put exporting companies at risk.

Is energy too important to be left to politics?

Why not count on market mechanisms to drive energy policy instead of relying on politics. Some say 'energy is too important to be left to politics'.² It is a highly debated issue. But one has to recognise that energy markets are characterised by well-identified 'market failures' arising from various factors such as information asymmetry

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due to technological complexity, the difficulty of pricing negative externalities or the existence of natural monopolies requiring regulatory intervention. At the very least, policy makers are expected to provide a stable framework to incentivise necessary long-term risky investments and influence consumer behaviours. In other words, they have to make a choice as to the design of what they think is the most appropriate energy system, define a strategy and then... stick to it. Not an easy task!

The strength of lobbies

Regarding electricity generation there is a consensus on the idea of an energy mix with a transition toward a diversified portfolio made of an array of solutions including well-proven traditional technologies using fossil fuel, nuclear, hydro and all types of renewable sources. Diversification would obviously contribute to increase security of supply. Deciding on the weight given to each technology in the mix is the responsibility of policymakers. They may focus on reducing the importance of fossil fuel and compensate progressively with renewable energy in order to cope with climate change and comply with EU agreements. But do they have all necessary information for the right decisions, in line with their priorities? Probably not: many conflicting lobbies, each putting forward numbers and arguments, cloud the transparency needed for rational, well-documented decisions.

Trial and error is not an option

Uncertainty and opacity are more problematic because of the 'lock-in' issue. Considering the long-term nature of energy projects, once a policy direction is taken it may prove difficult to go back. Once in place, the existing energy system generates a self-perpetuating inertia, with technological and institutional barriers that inhibit efforts to diffuse alternative solutions. This concept explains the difficulties in developing clean energy sources with reference to a 'carbon lock-in' creating 'persistent market and policy failures that can inhibit the diffusion of carbon-saving technologies despite their apparent environmental and economic advantages.'

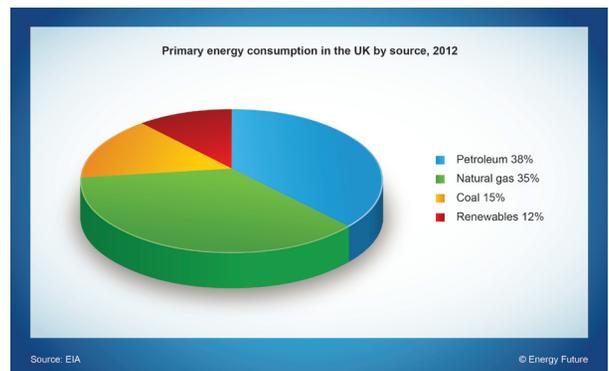
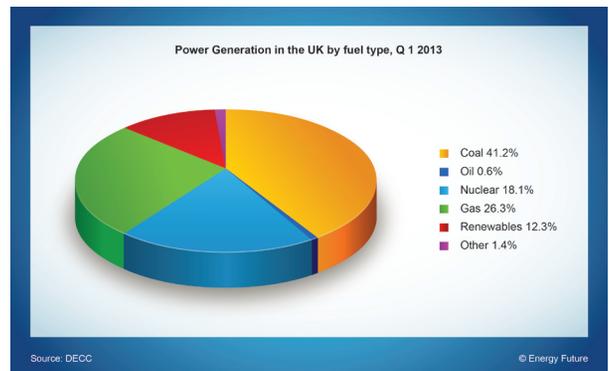
The economic crisis does not help

In a fast-growing economic environment, choices would be easier. Rapid growth allows for change and adaptation, enjoys less constrained budgets and gives investors better anticipation. But today's crisis means policy makers are dealing with immediate social threats and are short of

tax payers' money, making them more dependent on risk-averse private investors to achieve their goals. They are also obliged to add non-energy considerations to the equation. The observed increase in income inequality with a growing number of poor households has raised the fuel poverty issue, forcing government to give more weight to the affordability criteria. The large number of jobless people is also a foremost political concern. For that reason, the number of jobs created has become an important criterion for approving certain energy projects. Does it make sense? If these are just temporary jobs during the construction phase, as they may well be in many cases, the short-term social benefit may not be enough to justify a long-term technological choice.

These are the main challenges and difficulties faced by those in charge of the energy policy. The following articles provide a more detailed analysis of many of the above-mentioned issues. ■ **Patrick Gougeon, UK Director, ESCP Europe Business School, and Co-Chair of the French Chamber's Finance Forum**

2. Gert van Wijland, 'Energy is too important to be left to politics', *European Energy Review* (8 August 2013) <http://www.europeanenergyreview.eu/site/pagina.php?id=4134>
 3. David M. Newbery, 'European Deregulation: Problems of liberalising the electricity industry', *European Economic Review* 46 (2002) 919-927; www.elsevier.com/locate/econbase



What is a Watt?

- | Mega Watt (MW) = 1,000kW
- | Giga Watt (GW) = 1,000MW (1,000,000kW)

Consumption is measured in kilowatt hours (kW/h)
 UK energy consumption per capita (2012): 5,467.34 kW/h
 UK total consumption (2012): 3,136.08 GW/h