

Energy Efficiency

Without concrete and immediate action on energy efficiency, Liberalisation will make realising the objectives of Kyoto more difficult and bring a serious threat of Security of Supply, at least in parts of the EU, said Claude Turmes, Rapporteur in the European Parliament for the Liberalisation Directive.

Energy Efficiency was recently referred to by a senior member of DG TREN as the “*priority of priorities*”. Vice President de Palacio has stated “*supply-side measures will be inadequate unless at the same time a genuine demand-side policy is embarked upon*”¹. Within the Green Paper on Security of Supply there are a number of references to the importance of energy efficiency, including: -

“This policy of demand management is all the more necessary in that it is the only way of meeting the challenge of climate change”.²

“Nonetheless, the European Union will only reduce its external energy dependency through a determined policy of demand management”.³

The Green Paper also notes that 40% of the EU’s current energy consumption could be saved via energy efficiency measures based on present day technical knowledge. No other technology can bring such benefits to the consumer, economy and environment.

Energy savings offer a win-win situation: industry and consumers benefit because they have lower energy bills- including the investment costs – while there is a lower impact on the environment and less dependency on imported energy. In 2000 detailed analysis was undertaken in France to assess the potential for energy efficiency by 2020. This showed that energy savings of around 30% could be achieved with an aggressive energy saving strategy. Extrapolated to the European Union as a whole, this would imply a reduction in energy imports of over 3 billion MTOE by 2020, saving Europe \$US 690 billion.⁴

The EU Commission however fails once again to adequately address the issue of energy efficiency in its proposal for the 2nd phase of the liberalised electricity market. Experience shows that fully opened markets without regulations on energy efficiency have a tendency to generate higher electricity demand than under monopolistic organised markets. This is largely due to: -

- falling energy prices and thus at the large consumer level lower return on investment rates for efficiency investments and at the small consumer level a reduced attention to energy saving;
- non internalisation of external costs caused by electricity generation resulting in a market distortion against energy efficiency incentives.
- Higher costs for actions in the field of energy efficiency because of the fragmentation of the collective body of end consumers. Investments in energy efficiency are easier to organise and cheaper in captive clients markets because of the economies of scale and the fact that customers cannot change there

¹ Future European Energy Policy and Security of Supply, Mrs Loyola de Palacio, Vice President of the European Commission, Coaltrans Conference Madrid, 23rd October 2000

² Green Paper, page 54

³ Green Paper, page 54

⁴ Scenarios of energy futures and the potential energy efficiency, Comparison and transposition of France and the European Union, Bernard Laponche, International Consulting on Energy, January 2001

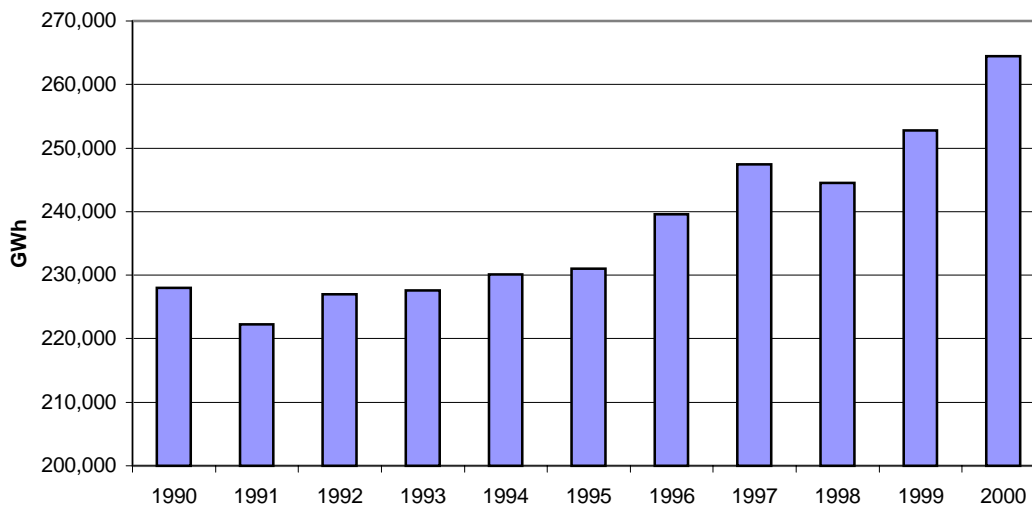
supplier thus allowing longer return rates to the operator. Experience both in California and UK shows that under these market conditions transactions costs for efficiency measures are higher than the economic benefit an operator can get out of the market

- additional incentives to enhance the consumption of the customers by promotion and advertising campaigns of the market actors. For example ENEL in Italy is promoting in a joint action with a manufacturer cheap mobile air-conditioning and EDF has been reported in Hungary to give special rebates for those clients which can raise their energy consumption by more than 10 % a year
- a liberalised market is more likely to be dominated by marketing aspects. Today's misbalance in favour of commercial actors which will have a tendency to bring "interested" information to consumers within much larger advertising campaigns than more "neutral" bodies like energy agencies, NGOs or consumer organisations

Learning From California

The Californian crises had at its origin at steep rise in electricity supply and demand as can be seen in the graph below.

Consumption in California 1990-2000



Source: California Energy Commission 2002 (2000 estimated)

The graph shows a moderate increase in electricity consumption from 1990 up to 1993, which confirms the trend of moderate growth from 1983, where California had stringent requirements on energy efficiency under the then valid market organisation of least cost planning. The restructuring of the Californian electricity sector begun in 1992, by the California Public Utilities Commission. With the deregulation of the sector and the failure to complete the liberalisation with concrete obligations on energy efficiency, there was an increase in electricity demand. In the early 1980s, the Public Utilities Commission's established an incentive mechanism whereby utilities were rewarded for reducing consumers' bills rather than selling them kilowatt-hours. California's world-class efficiency efforts saved 10,000 megawatts—a fifth of today's peak demand—and billions of dollars.

Some people have suggested that the steep rise in demand in California, is linked to the boom in the new economy, however, a recent study from Lawrence Berkley shows that only 3% of the new demand is linked to the new economy, e.g. servers and modems. It was above all air conditioning in both the public and private sector that boosted Californian electricity demand.

The failure of energy efficiency was not the sole reason of the California crises, but it was the origin of the crises, which was then enhanced by the failure to adequately monitor the market in relation to supply and demand when electricity from large hydro decreased in a dry year. Furthermore, when the levels of demand came close to the total supply available some producer and grid companies worked together to distort the market.

A similar crisis could happen across Europe if safeguards are not put in place, as have been shown by recent events in Spain. In mid December hundreds of thousands of people and hundreds of companies were without power when cold weather surprised the Spanish electricity utilities. The market dominance of the 2 big companies IBERDROLA and ENDESA were blamed and the interconnection capacity between the Iberian market and France highlighted. However, the background of the blackouts in Spain is a steep increase in demand for electricity (nearly 6% per year) as a result of deregulating a market without considering energy efficiency.

Proposals for the European Electricity Market

EU Commission services claim to address energy efficiency through the forthcoming directive on buildings and an up coming directive on efficiency standards for appliances and office equipment. These are positive steps, but it will not help to overcome the market failure in the electricity market. Therefore the rapporteur of Parliament proposes the following instruments:

a) Creation of a special energy efficiency fund for Small and Medium Enterprises at the European Investment Bank:. With falling energy prices return rates on energy efficiency investments are also declining. As external costs caused by electricity generation are not internalised, there is a need to create instruments to induce investments in energy efficiency. Energy efficiency funds with lower interest rates have been successfully implemented in some parts of the world. A similar instrument should be implement at the European Investment Bank, which has already a special program for small and medium enterprises that would have to enlarged by a special efficiency fund.

b) Specific fund for promotion of energy efficiency for domestic consumers: Energy efficiency in the domestic sector is the most difficult for utilities to influence, as the relative costs are higher than in other areas. Therefore, a fund should be introduced to facilitate increased energy efficiency in this area. This should be financed through a 2% levy on the revenues from the sale of domestic electricity. Schemes such as this already occur in parts of the United States, Denmark and the Netherlands. As prices in a liberalised market have bene reduced by more than 15%, retaining 2% of this reduction to create a fund for energy efficiency should be politically acceptable. Collecting of these funds is easy to handle through the market operators (retail companies or distributors). The positive effects of these funds are multiple:

- Reduction of the overall costs of energy for small customers by reduction of the energy bill (consumption price per kilowatt/hour) and thus liberalise the money spend for energy for other sectors of the economy.

This can be done by targeted actions like promotion of labelling schemes, incentives for best appliances (A label), and replacement of ineffective electricity use like heating proposes.

- These efforts should be above all be targeted towards citizens at lower-income which have due to their low purchasing power the lowest energy services. Studies in Italy have shown that high income population change their appliances every 5 to 7 years and thus tend to purchase the higher efficiency appliances and reduced energy bills (high energy service for lower costs). The population with the lowest income often keep appliances for 20 - 25 years and even then are only able to purchase on second hand markets. They have the lowest energy services with the highest costs.
- The economic activities induced by the funds generate employment. This is especially important as it can be counter balance to the large job loses induced by liberalisation in the core electricity business.

c) Establishment of an independent body to monitor the introduction of energy efficiency: The Directive proposes the establishment of a body to monitor the introduction of measures to increase security of supply. Given the importance of efficiency to meet this and environmental goals a specific independent agency should be introduced for energy efficiency.

d) Reciprocity action: Under the current Directive, Member States may take action against another if market opening does not occur as required within the framework of the Directive. This is to avoid market distortions. Similarly, Member States that do not implement energy efficiency may distort the market and should be subject to the same reciprocity requirements as exist for market opening.

e) Tendering for Energy Efficiency measures: Member States should have the opportunity to encourage the further development of energy efficiency technologies and measures by allowing tenders to be introduced for energy efficiency to directly compete against proposed new or replacement power stations.

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