LIBERALISATION OF THE ELECTRICITY MARKET
AND ENVIRONMENTAL POLICY ISSUES:
SYNERGY OR CONTROVERSY

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Abstract

The adoption of the European Parliament and Council Directive for Electricity (96/92/EC) has influenced energy policies in EU member states aiming to liberalise energy markets. The intention of the directive is the creation of a single European market for electricity, consequently guaranteeing a competitive European energy market and simultaneously contributing to achieving general energy policy objectives.

The objective of creating Community-wide market for electricity is only one of the three main energy policy objectives of the European Community, while the other objectives of EU energy policy reflecting sustainable development issues are related to security of supply, and environmental protection. The complexity of a common EU energy policy based on these three core objectives is discernible leading to potential problems when regarded separately.

This clearly shows the necessity to analyse energy politics by considering other policy areas, such as environmental policy, owing to possible synergies and / or discrepancies. For example, fiscal instruments for environmental policy issues are widespread policy tools with quite distinct objectives. The focus of the paper is to analyse the use of fiscal instruments to internalise external cost associated with electricity generation, and support schemes promoting the use of renewables in electricity production in the context of interrelations between different policy areas and objectives.

1. INTRODUCTION

The discussion surrounding the formation of an internal energy market in the EU and the growing awareness of environmental impacts of the energy sector can be identified as main policy drivers behind the current development and legislation for the energy sector. The launch of the liberalisation of the electricity market aiming to create an internal energy market is a significant component of the Lisbon strategy for economic reform. The introduction of competition in the electricity market should increase efficiency consequently aiming at a downward convergence of prices in EU member states. Environmental impacts of the energy sector are of political concerns that have led to a number of political initiatives including the commitment to reduce greenhouse gases emissions (Kyoto Protocol). A further aspect worthwhile to mention is the fact that the EU has committed itself to the polluter pays principle (PPP) which became widely accepted as the general framework for internalising environmental externalities. Rather, by placing costs of pollution prevention on polluters, the PPP demands that the cost of protection activities be reflected in the market prices of goods and services.
Attempts to realise the various objectives based on the two different policy developments can lead to a dilemma since the means to achieve them can be contradictory. The topic of this paper is to discuss the potential problems political decision-makers are facing when these two aspects of energy and environmental policy are implemented. The main focus is on analysing the price formation for electricity considering different policy objectives. Interrelations between the different core energy policy objectives are discussed by looking whether these objectives are congruent or whether possible conflicts exist in reaching them simultaneously.

2. ELECTRICITY MARKET LIBERALISATION IN THE CONTEXT OF MORE GENERAL POLICY OBJECTIVES

Some of the objectives for implementing the Electricity Directive have been summarised by the European Commission as follows:

- To increase efficiency by introducing competitive forces into the electricity market.
- Electricity price levels, at present, vary enormously between member states. This causes unacceptable, and unnecessary, distortions in competitive conditions across the single market. In addition increased efficiency leads to lower prices. This is essential; electricity in the European Union is more expensive than in many countries with which European industry trades, such as the United States and Australia. ....
- The lower prices for electricity result in lower production prices for European industry, which in turn will be translated into lower prices for products.'

The liberalisation process aims at increasing competition between energy suppliers by enhancing efficiency and productivity gains which, in return, should lead to lower production costs as well as lower electricity prices. Nevertheless, the overall result of the liberalisation process cannot simply be reduced to the concept of lower electricity prices for final consumers. This matter has been clarified in a recent communication of the European Commission: 'To refute a common misconception, the internal energy market does not only seek systematically to reduce prices to consumers, but to set a fair price in compliance with public service obligations'. However, the European Commission fails to answer the question what a ‘fair price’ would be and what is understood with the phrase of ‘systematically reduce prices to consumers’?

Furthermore, EU energy policy is not only directed to the creation of Community-wide markets for electricity. This is only one of the three main energy policy objectives of the European Community reflecting sustainable development issues established as a requirement for Community policy in the Amsterdam Treaty in 1997 that are:

- ‘Security of supply’ – which aims to minimise risks and impacts of possible supply disruption on the EU economy and society;
- ‘Competitive energy systems’ – to ensure low cost energy for producers and consumers to contribute to industrial competitiveness and wider social policy objectives;
- ‘Environmental protection’ – which is integrated in both energy production and energy use to maintain ecological and geophysical balances in nature.’

The complexity of a common EU energy policy based on these core objectives is discernible leading to potential problems when regarded separately. Both positive and negative linkages are conceivable. For example, energy efficiency improvements in the generation technology can have a positive effect on security of supply as a consequence of a reduction of the fuel consumption, i.e. reducing import dependency. It can, additionally, have a positive effect on environmental protection by reducing emissions of greenhouse gas and other pollutants as an outcome of the reduced consumption of fossil fuels. However, efficiency gains can be impeded

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2 European Commission (1998), p.4
3 European Commission (2002a) p. 8
4 European Commission (1999), p. 8
come of the reduced consumption of fossil fuels. However, efficiency gains can be impeded by lower electricity prices.

Conflicting outcomes are also possible, particularly, in the process of creating Community-wide competitive energy markets. Competition and increased efficiency in the power generation sector can lead to reduction of electricity prices. This development can encourage consumers to increase electricity consumption thus contradicting the objective of environmental protection. Considering that thermal convention is the main generation type in many EU member states, increased consumption would lead to increased emission of greenhouse gases and other pollutants (such as SO₂ and NOₓ). The specific environmental objective of EU energy policy can be further distinguished between the following three topics:

- Reducing the environmental impact of energy production and use;
- Promoting energy saving and energy efficiency; and
- Increasing the share of production and use of cleaner energy.

During the implementation phase of the Electricity Directive, it became obvious that the rules and regulations laid down did not go far enough and the European Commission published an amended proposal in 2002. However, not all problems encountered during the implementation process have been equally addressed. A lack of clarity is observed in combining the multiple objectives of EU energy policy and their simultaneous achievements. The difficulty with the multiple objectives is in particular discernible when studying the formation and development of electricity prices.

### 3. MARKET-BASED INSTRUMENTS IN THE CONTEXT OF ENERGY AND ENVIRONMENTAL CHALLENGES

The generation of electricity quite independent of fuel uses causes some form of external costs to the environment and the current electricity prices do not cover the external costs arising during the generation and consumption process. The European Commission, in the sixth Environment Action Programme, emphasises that these external costs should be internalised, i.e. included in energy prices. Such a policy approach is also in accordance with the polluter pays principle (PPP).

A EU funded research study, the Externe project, confirmed that electricity prices do not reflect the full societal costs. The findings of this study summarise ‘that the cost of producing electricity from coal or oil would double and the cost of electricity production from gas would increase by 30% if external costs such as damage to the environment and to health were taken into account. It is estimated that these costs amount up to 1-2 % of the EU’s Gross Domestic Product (GDP), not including the cost of global warming.’

The estimation of external costs of electricity generation is a very complex task and is tainted with difficulties. An estimation of the range of external costs of electricity generation from different fuels can be found in Table 1. The damages expressed in monetary cost figures as a result of electricity production are the highest for fossil fuels, in particular for coal, lignite and oil and the lowest for renewables and nuclear. The low figure for nuclear should be treated with some care because of the great uncertainty associated with the assessment of major nuclear accidents. Interesting enough is to put these external costs figures in relation to the generation costs of about EUR 0.04 (4 EUR cents) per kWh. Furthermore, the determination of these external costs

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5 European Commission (2002b)
6 European Commission (2001b)
7 The costs of the electricity generation mix are estimated to be around 20 EUR/MWh (nuclear power); 20 EUR/MWh (lignite), 45 EUR/MWh (domestic hard coal), 30 EUR/MWh (natural gas); 30 EUR/MWh (hydro power); 30 EUR/MWh (waste and biomass); 50 EUR/MWh (photovoltaics, solarthermal) and 91 EUR/MWh (wind): in: Auer J. (2002).
is to some degree still uncertain because of different influencing factors, such as geographical variations, the sites where the technology is applied and the complexity of the fuel chain. However, these costs and the methodology behind these costs estimates can certainly be used for illustrative purposes showing the magnitude and ranges of damages associated with the generation of electricity.

Table 1 *External costs of electricity production (in 1995 EURcent/kWh)*

<table>
<thead>
<tr>
<th></th>
<th>Coal and</th>
<th>Oil</th>
<th>Gas</th>
<th>Nuclear</th>
<th>Biomass</th>
<th>Hydro</th>
<th>Wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>-</td>
<td>-</td>
<td>1 - 3</td>
<td>-</td>
<td>2 - 3</td>
<td>0.1</td>
<td>-</td>
</tr>
<tr>
<td>Belgium</td>
<td>4 - 15</td>
<td>-</td>
<td>1 - 2</td>
<td>0.5</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Denmark</td>
<td>4 - 7</td>
<td>-</td>
<td>2 - 3</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>0.05</td>
</tr>
<tr>
<td>Finland</td>
<td>2 - 4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>France</td>
<td>7 - 10</td>
<td>8 - 11</td>
<td>2 - 4</td>
<td>0.3</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Germany</td>
<td>3 - 6</td>
<td>5 - 8</td>
<td>1 - 2</td>
<td>0.2</td>
<td>3</td>
<td>-</td>
<td>0.1 - 0.2</td>
</tr>
<tr>
<td>Greece</td>
<td>5 - 8</td>
<td>3 - 5</td>
<td>1</td>
<td>-</td>
<td>0 - 1</td>
<td>1</td>
<td>0.2 - 0.3</td>
</tr>
<tr>
<td>Ireland</td>
<td>6 - 8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Italy</td>
<td>-</td>
<td>3 - 6</td>
<td>2 - 3</td>
<td>-</td>
<td>-</td>
<td>0.3</td>
<td>-</td>
</tr>
<tr>
<td>Netherlands</td>
<td>3 - 4</td>
<td>-</td>
<td>1 - 2</td>
<td>0.7</td>
<td>0.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Portugal</td>
<td>4 - 7</td>
<td>-</td>
<td>1 - 2</td>
<td>-</td>
<td>1 - 2</td>
<td>0.2</td>
<td>-</td>
</tr>
<tr>
<td>Spain</td>
<td>5 - 8</td>
<td>-</td>
<td>1 - 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.2</td>
</tr>
<tr>
<td>Sweden</td>
<td>2 - 4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.3</td>
<td>0.03</td>
<td>-</td>
</tr>
<tr>
<td>UK</td>
<td>4 - 7</td>
<td>3 - 5</td>
<td>1 - 2</td>
<td>0.3</td>
<td>1</td>
<td>0 - 0.7</td>
<td>0.1 - 0.2</td>
</tr>
</tbody>
</table>

Source: Externe EC (1998)

Environmental concerns have become a driving force of EU policies as it can be seen in the recently adopted or proposed initiatives of promoting the use of renewable, reducing overall energy use and with regard to the Kyoto Protocol; i.e. the reduction of greenhouse gas emissions. Transposition of policies, taking into account the costs for environmental and health damage, requires the use of policy instruments in the form of market-based instruments, such as taxes, tradable emission permits or emissions trading. It is quite evident that the implementation of such measures will influence the price formation\(^8\). Economic instruments, such as taxes, have already been introduced as means to implement the PPP in a whole range of EU member states. Furthermore, the application of environmental taxes can be perceived as part of the strategy of achieving a reduction in the overall energy use by increasing the price of energy products. Price increases should trigger behavioural changes and simultaneously promote energy efficiency improvements, particularly, in the medium- to long-run. In addition, the use of economic instruments is advantageous in the dynamic context as they provide ongoing and continual incentives to reduce emission through cost-effective technologies. Besides being market-based instruments for achieving the policy of internalisation, it should not be forgotten that taxes are also revenue generating tool. Other fiscal measures high on the political agenda are tradeable emission permits and emission trading\(^9\).

\(^8\) See for example: Department of Trade and Industry 2003
3.1 Taxes

As mentioned above, one of the policy options is to use taxes to internalise the external costs. This would imply a surcharge of between 20 and 80 EUR per MWh (in 1995 prices) added to the current price for electricity in case electricity is generated from coal (see Table 1). Proposals of introducing environmentally related taxes on the EU level – partly with the aim of internalising external effects - have been on the political agenda since the early 1990s\(^\text{10}\). However, it took more than 10 year to come to some form of agreement: in March 2003, ministers of the EU member states agreed to a proposed Directive on a Community framework for the taxation of energy products. The compromise sets minimum tax rates for electricity of 0.5 EUR/MWh for businesses and of 1 EUR/MWh for non-businesses, i.e. households, from January 2004. These rates are rather low, in particular when compared to the damage costs associated with the use of fossil fuels for electricity generation. Furthermore, these rates are not indexed, i.e. the real value will decrease over time. However, proposed tax rates are serving as a floor meaning that EU member states can increase the tax rates. Currently, the majority of EU member states have already implemented taxes levied on electricity consumption and their rates are in many cases much higher than the minimum rates laid down by the EC (see Tables 2 and 3).

The comparison of end-user prices\(^\text{11}\) with the price excluding all taxes in Tables 2 and 3 shows that some EU member states are making use of some form of taxes. A focus is on the third column of Tables 2 and 3 as the data presented there can be interpreted as a form of environmental and / or energy taxation aiming to internalise external costs. However, it would go beyond the scope of this paper to analyse in detail whether the underlying rationale for implementing these taxes were environmental considerations or other reasons such as a policy tool to generate revenues.

Table 2: Electricity prices for households in selected EU member states (in EUR/MWh; January 2003)

<table>
<thead>
<tr>
<th></th>
<th>price excluding all energy taxes</th>
<th>env. / energy taxes VAT</th>
<th>end-user price</th>
<th>env taxes in % of end-user price</th>
<th>total taxes in % of end-user price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>138.1</td>
<td>1.8</td>
<td>29.3</td>
<td>169.2</td>
<td>1</td>
</tr>
<tr>
<td>Denmark</td>
<td>130.5</td>
<td>89.6</td>
<td>55.1</td>
<td>275.2</td>
<td>33</td>
</tr>
<tr>
<td>France (Paris)</td>
<td>109.2</td>
<td>11.5</td>
<td>22</td>
<td>142.7</td>
<td>8</td>
</tr>
<tr>
<td>Germany</td>
<td>169.6</td>
<td>20.5</td>
<td>30.4</td>
<td>220.5</td>
<td>9</td>
</tr>
<tr>
<td>Greece (Athens)</td>
<td>71.1</td>
<td>0</td>
<td>5.7</td>
<td>76.8</td>
<td>0</td>
</tr>
<tr>
<td>Italy</td>
<td>79.5</td>
<td>12.4</td>
<td>9.2</td>
<td>101.1</td>
<td>12</td>
</tr>
<tr>
<td>Netherlands</td>
<td>131.6</td>
<td>23.6</td>
<td>29.5</td>
<td>184.7</td>
<td>13</td>
</tr>
<tr>
<td>Spain (Madrid)</td>
<td>111.5</td>
<td>5.7</td>
<td>18.8</td>
<td>136</td>
<td>4</td>
</tr>
<tr>
<td>Sweden</td>
<td>135.1</td>
<td>24.1</td>
<td>30.8</td>
<td>190</td>
<td>13</td>
</tr>
<tr>
<td>UK</td>
<td>137.3</td>
<td>0</td>
<td>6.8</td>
<td>144.1</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: prices for households with an annual consumption of 1,200 kWh – category Db
Source: Eurostat (2003a)

Table 2 reveals that some EU member states, such as Greece and the UK, have no environmental taxes levied on electricity consumption. Furthermore, the range of the tax rates in coun-

\(^{10}\) See for a discussion: European Environment Agency (2000)

\(^{11}\) All figures presented in Tables 2 and 3 are compiled by Eurostat and should be used with care – they are being used for illustrative purposes in this paper.
tries that have implemented environmentally related taxes is large – stretching from about 1.8 EUR/MWh in Belgium to about 89.6 EUR/MWh in Denmark. It is certainly interesting to note that the Danish tax is at the upper bound of the external cost figures regarding coal use in electricity generation in Denmark.

A further facet of electricity price determination worth to be noted - but not necessarily unexpected - is the fact that environmentally related taxes play almost no role in the end-user prices of large-scale industrial consumers, i.e. energy-intensive industries (see Table 3 below). Research in the area of environmental taxation clearly shows that this policy approach of internalising external effects applies more to households than to industries. The main reason for the different treatment of electricity users can be linked to economic consideration, i.e. high electricity price levels are often set equal to a loss of competitiveness in international trade\(^\text{12}\).

Table 3: Electricity prices for industry in EU selected member states (in EUR/MWh; January 2003)

<table>
<thead>
<tr>
<th></th>
<th>price excluding all taxes</th>
<th>env. / energy taxes</th>
<th>VAT</th>
<th>end-user price</th>
<th>env taxes in % of end-user price</th>
<th>total taxes in % of end-user price</th>
</tr>
</thead>
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<tr>
<td>Belgium</td>
<td>88.5</td>
<td>0.4</td>
<td>18.6</td>
<td>107.5</td>
<td>0</td>
<td>18</td>
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<tr>
<td>France (Paris)</td>
<td>62.3</td>
<td>3.3</td>
<td>10.6</td>
<td>76.2</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Germany</td>
<td>77.2</td>
<td>12.3</td>
<td>14.3</td>
<td>103.8</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>Greece (Athens)</td>
<td>67</td>
<td>0</td>
<td>5.4</td>
<td>72.4</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Italy</td>
<td>87.1</td>
<td>25.2</td>
<td>11.2</td>
<td>123.5</td>
<td>20</td>
<td>29</td>
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<tr>
<td>Spain (Madrid)</td>
<td>57.2</td>
<td>3</td>
<td>9.6</td>
<td>69.8</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Sweden</td>
<td>70.2</td>
<td>0</td>
<td>17.6</td>
<td>87.8</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>UK</td>
<td>57.9</td>
<td>3.2</td>
<td>10.7</td>
<td>71.8</td>
<td>4</td>
<td>19</td>
</tr>
</tbody>
</table>

Note: prices for industrial users of an annual consumption 1,250,000 kWh with a maximum demand 500 kW (category Id)
Source: Eurostat (2003b)

Probably one of the most significant information provided in Tables 2 and 3 is the last column illustrating the share of all taxes as a percentage of the end-user price. The main conclusions are:
- this share is generally higher for households than for industries; i.e. household consumption of electricity is relatively and absolutely higher taxed than industrial consumption;
- the prices without taxes are regularly higher for households than for industries in EU member states.
- big differences exist in the size of the taxes between the EU member states as well as between the different users in the same country;
- the share of taxes paid by households is highest in Denmark and lowest in the UK and in Greece, for example 53% of the price paid by a Danish household is allocated to the governmental budget;
- electricity purchased by households is subject to some form of energy taxation in the majority of EU member states with the exception of some countries such as Greece, and the UK;
- energy taxation is less widespread for industry than for households.

3.2 State aid and support for renewables

Apart from fiscal policy measures attempting to internalise the external costs, other environmental policy initiatives, having in common their direct influence on the creation of a competitive energy market, are becoming more widespread. Their common objective is the promotion of the use of renewables in the energy mix in EU member states. The implementation of these policies can, however, lead to possible conflicts between environmental and economic considerations/objectives:

- to internalise external costs - via taxes - and to promote the use of renewable - via special support schemes (environmental considerations);
- to increase efficiency by introducing competitive market conditions with the aim of converging the electricity prices between EU member states and to reduce electricity prices because the currently electricity prices are causing 'unacceptable, and necessary, distortions in the competitive conditions across the single market'\(^{13}\). High electricity prices are also regularly described as competitive obstacle with respect to the main trading partners outside of the EU (economic considerations).

Apart from the market-based policies a number of other European policy initiatives that will affect the price formation and competition on energy markets have started. These policy initiatives, aiming to promote the widespread use of renewable in EU member states, are:

- In 1997, the EC adopted the ‘White Paper for a Community Strategy and Action Plan, Energy for the Future: Renewable Sources of Energy’ with the target of 12% contribution of renewable energy sources (RES) to total EU gross inland energy consumption by 2010.
- In 2001, the European Parliament adopted the Directive on the promotion of electricity from renewable energy sources (RES-E Directive). This Directive sets a target of 22% of total EU electricity production being generated by renewable energy sources for 2010. Indicative targets for each EU member states are also part of the Directive.
- In 2002, draft Directive on biofuels aiming to increase the use of biofuels in the EU has been proposed.

The 2001 Directive on the Promotion of Electricity from Renewable Energy Sources will have consequences for the European energy market, particularly, for the electricity market and electricity prices. The increasing use of renewables in electricity generation (‘green electricity’) obviously influences the price formation process since the generation prices of green electricity are still higher compared to conventional thermal and nuclear generation costs. Specific support programmes for the promotion of the use of renewables are in place in many member states\(^{14}\) and are regularly funded through specific earmarked fiscal instruments. Financial aid for RES is perceived as justified because of the fact that conventional energies do not contribute much towards the external cost they entail. Furthermore, the EC published the Community guidelines on state aid for environmental protection in February 2001 explicitly stating that ‘Member States may grant operating aid to new plants producing renewable energy that will be calculated on the basis of the external costs avoided’.

Setting indicative targets as in the case of the 2001 RES-E Directive has to be branded as a political intervention into the energy market that is not necessarily in accordance with the ideal situation of full competition. There are a number of other political motivated interventions: several EU member states have passed laws to close nuclear power plants (for example: Belgium, Germany, Sweden). All these interventions have in common that they will influence the electricity price formation and it can certainly be speculated that they will – at least partly - contradict the objective of the Electricity Directive of a downward convergence of prices.

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\(^{13}\) European Commission (1998)

\(^{14}\) A detailed discussion of the different programmes and models used in EU member states can be found by Huber et al. (2001) and a detailed analysis of the Dutch situation by Energy Research Foundation (2001). However, the discussions in these publications are reflecting the situation at the end of the 90s and 2000/01 so that support schemes currently in place can be different.
One of the consequences of different policies will be the change of the merit order. It can, therefore, be expected that the marginal plant during the average load period will have higher generation costs as compared to the situation today because nuclear power plants are generally covering the base load in these countries. It is not possible to draw a definite conclusion. Many other factors are determining the choice of future investment, i.e. what types of conventional thermal will be built, in addition to the renewable generation plants, to satisfy expected growth in electricity demand, and to offset the reduction in capacity coming as a consequence of nuclear closure programmes. The size of new investment programmes are further depending on the potential of energy / electricity savings measures and how much of this potential will actually be realised.

4. CONCLUSION

One of the rationales for introducing the Electricity Directive has been the different price level between EU member states and the main trading partners outside of the EU. The creation of an internal European energy market should further remove distortions by increasing efficiency. An implicit aim of creating competitive market is to lower electricity prices for the electricity users in EU member states. However, a discussion of energy politics must include other policy areas, such as environmental policy, because of possible synergies and/or discrepancies between them.

The focus of the report is to analyse the use of instruments to internalise external cost associated with electricity generation, and to support schemes promoting the use of renewables in electricity production in this context. Whereas the latter has to be assessed in the context of a range of different market intervention programmes all aiming to promote the use of renewables, the former has to be characterised as a policy tool intervening on the market with the aim of improving the welfare of the citizens. In addition, this approach is completely in accordance with the general accepted and adopted polluter pays principle (PPP). It is worth noting that non-market based measures (in the form of regulations providing indicative targets for the use of renewable in the energy mix in EU member states) are combined with fiscal support schemes. These policies are insofar of relevance because they are opposed to the creation of competitive conditions. The significance of fiscal instruments has clearly been shown in the analysis considering that taxes (energy/environmental taxes and VAT) can account for up to 50% of the end-user price for households. However, some changes with regard to the latter policy tools will occur in 2004 following the political agreement reached by the EU Economics and Finance Ministers at their meeting in March 2003 to introduce taxes levied on the use of electricity.

The European Commission argued in a communication that there is no inherent contradiction between economic growth and maintenance of environmental quality (COM(2000)567). The initiative towards more liberalised energy market has to be seen in the context of economic globalisation and the need to remove any trade barriers. Furthermore, the European Commission discusses that the liberalisation process of the electricity market will provide potential to develop renewable energy leading to greater market penetration. However, this argumentation can also be questioned considering that lower electricity prices will undermine the use of renewables unless these prices will reflect the full societal costs of electricity generation and support schemes for renewables are in place.
REFERENCES


