4CE Final Report
Executive Summary

Prepared as part of the ALTENER project
"Consumer Choice and Carbon Consciousness
for Electricity (4CE)"

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4CE

Consumer Choice and Carbon Consciousness for Electricity

The 4C Electricity Project

The project "Consumer Choice and Carbon Consciousness for Electricity (4C Electricity)" has been carried out under the framework of the EU Altener programme and in the context of the European Directive 2003/54/EC on liberalisation of the European electricity market, adopted in June 2003. The aim of this project is to promote electricity disclosure, i.e. consumer information about the source of the electricity product they are currently buying and the implications of its generation.

To assist consumers in making an informed choice in the liberalised electricity market place, this project has developed some options for label design (and the information system behind it) that will provide consumers with details of the content of their supply mix and its resulting environmental implications.

By designing an information system which displays details about the primary energy sources used to generate a certain product, these labels provide a tool which can aid consumers and policy makers in greening Europe's electricity supply.

The electricity disclosure scheme has been explored within the context of liberalisation, in order to ensure that a functional and practical scheme is proposed. An assessment of the opportunities and barriers to labelling, and especially for tracking electricity, from the changes to the European liberalised markets was undertaken.

This was achieved through the following activities:

- Phase 1: A study of the ability of suppliers to access and provide the information needed for an electricity label within the context of liberalisation.
- Phase 2: A study of what the label will mean for consumers and what consumers want by consulting with them through focus groups, a telephone survey and one-on-one interviews.
- Phase 3: Interaction with existing policies and development of new policies to maximise the impact of the label, as well as investigating the need for associated policies to ensure effectiveness. This final phase estimates the cost of implementing a disclosure scheme, assesses the label in the context of a policy framework towards a lower carbon future and suggests a policy toolbox that can be employed to build on the label.

In the course of the project, two workshops were held, forming key deliverables of the 4C Electricity project. The project ran from January 2002 to September 2003.

Further information on the 4C Electricity project is available on the project website: http://www.electricitylabels.com

Executive Summary

Electricity disclosure will be introduced into Europe as part of the European Directive 2003/54/EC on liberalisation of the European electricity market, adopted in June 2003 and due to be implemented into Member State legislation by July 2004.

Disclosure has the potential to be a powerful policy tool and is an essential part of the liberalisation of the electricity market, providing consumers with reliable and useful information and thus allowing them to make an informed choice of electricity supplier and electricity supply.

Essence of electricity disclosure

- In essence, electricity disclosure is an educational tool – improving the availability and reliability of information about electricity and its associated environmental impacts to consumers.
- Electricity disclosure is going to happen, therefore it is crucial to ensure that it happens in the most effective way possible, particularly from the consumer perspective.
- Electricity disclosure is a key part of liberalisation – ensuring free flow of information to all market players, including the final consumer, enabling consumers to influence the generation mix through their purchasing decisions.
- Electricity disclosure is possible at a relatively low cost: a fully-functioning electricity disclosure scheme will cost less than 0.01 €cent/kWh.
- It is likely to take around 4 years before a fully functioning disclosure scheme is in place, allowing for time to set up the tracking mechanism, collect data for the first year, verify the information and then incorporate the information with customers' electricity bills and promotional materials.

Requirements of the Directive

- Fuel source information is provided in or with the bills and promotional materials.
- Environmental information, at least in terms of CO_2 emissions and radioactive waste, is provided on an existing reference source at a minimum.
- Disclosure information relates to the supplier portfolio (not individual products) for the preceding year.
- Member States must ensure that information provided to consumers by suppliers is reliable. This implies that Member States must introduce some form of tracking mechanism to trace electricity from generator to supplier – the use of statistical averages would not be sufficient. Verification of the disclosure information is also essential.

- The Directive provides no guidance on the display format of the disclosure information, the details of the tracking mechanism or harmonisation at a Member State or European level.

Consumer views

- Consumers are concerned about climate change.
- There is also a high level of concern about radioactive waste amongst consumers.
- Consumers would prefer to buy electricity generated from renewable sources and many are prepared to pay a small premium for such electricity.
- Consumers want to be provided with information on both the fuel sources and environmental impact of their electricity with their bills

Minimal compliance

- A disclosure scheme based on the minimum required in the Directive would not provide consumers with sufficiently precise information for them to make a reliable informed choice of electricity supplier.
- Comparability of information between suppliers would also be low.
- Reliance on web-based information for the environmental indicators would disadvantage many consumers.
- A minimal disclosure scheme is likely to result in an anti-nuclear rather than an anti-carbon vote from consumers, based on the fuel source information provided in or with their bills and promotional materials.
- Minimal compliance disclosure is not recommended since it would be difficult to then progress to a more advance system as this would require major alterations to the disclosure scheme. Member States should therefore be encouraged to go beyond minimal compliance.

Presenting the information to consumers

- Harmonisation of the disclosure information display is essential, at least at a Member State level, to ensure ease of comparability between suppliers and allow full consumer choice.
- Information on the fuel source and environmental impact of the electricity should be provided on a separate leaflet or insert sent out with the bill.
- Fuel mix information should be presented in a variety of formats since people's comprehension of different presentation styles varies. The recommended format is a combination of a pie chart and a table which includes a detailed breakdown of renewable sources.

- Environmental information should be displayed as a ranked (e.g. on a scale of A-G) or indexed label, including absolute figures for CO_2 emissions and radioactive waste. Further research is required to find the most effective format for the display of the environmental information from a consumer perspective.
- The environmental indicators for CO_2 emissions and radioactive waste should always be displayed together and not in separate locations.
- Promotional materials should display the disclosure information based on the same display formats as used in the separate leaflet or insert.

Tracking the electricity

- European harmonisation of the tracking mechanism is essential for proper functioning of the European electricity market.
- Reliability of data can be ensured through the use of an appropriate tracking mechanism and verification systems.
- The tracking mechanism should be based on a central registry approach. Member States should specify whether market participants trade electricity on the basis of tags or certificates or both.
- The central registry provides the suppliers with the data to be disclosed to consumers, including data on differentiated electricity products if required.
- Member States agree on joint definitions of the information to be provided, procedures for data calculations and interfaces for communication across borders.
- CO_2 emissions and radioactive waste are tracked on the basis of plant-specific factors which reflect the benefits of increased plant efficiency, higher fuel quality and cogeneration.

Supporting disclosure

- A national or European educational campaign before and after the introduction of the disclosure scheme would help ensure effectiveness.
- An independent catalogue listing what is offered by all suppliers on the basis of the disclosure information should be compiled at a national level to enable consumers to compare suppliers and thus make a properly informed choice.
- Existing schemes, such as the EU Emissions Trading Scheme, can support disclosure through the provision of plant-specific reporting data for disclosure purposes, thus limiting costs.
- Member State systems for Guarantees of Origin developed under the Renewables Directive 2001/77/EC and the draft Cogeneration Directive and systems under the voluntary Renewable Energy Certificates Scheme (RECS) should be merged with the disclosure tracking mechanism into one single scheme.

Building on disclosure

- Differentiated tax rates on electricity consumption according to the carbon emissions and/or radioactive waste content resulting from its generation could be implemented at a Member State level.
- Carbon caps could be placed on suppliers and minimum standards on products to limit carbon emissions or nuclear content of electricity sales.
- Disclosure could form the cornerstone of a downstream emissions trading scheme.
- Environmental impacts of electricity could be incorporated into procurement specifications for goods and services.
- Mandatory disclosure of fuel mix information and associated environmental impacts of energy purchases in company reports would strengthen the demand for reliable and precise disclosure information.

Interacting with disclosure

- Disclosure does not aim to promote specific fuel sources. Award labels (e.g. for green electricity) will still have a role to play in identifying electricity from renewable sources which is truly additional i.e. new generation that is not fully supported or subsidised through other schemes, such as feed-in tariffs or renewable obligation targets.
- In order to avoid double-counting of the electricity attributes through disclosure and other existing renewable support schemes, clear rules should be established regarding the role of each. If there are a number of different certification schemes, these could be combined so that only one type of certificate or tag is in use.

Benefits of disclosure

- Increased availability of reliable information on electricity and its environmental impacts and hence better informed consumers.
- Increased demand for electricity generated from renewable sources in the order of up to 25 TWh/year in the EU resulting in a reduction in the level of CO_2 emissions, in the order of 10.4 million tonnes of CO_2 per year in the EU, and radioactive waste through the replacement of electricity generation from fossil and nuclear fuels.
- A higher contribution of renewables to the electricity sector will result in an increased level of employment in the renewables industry, improved security of supply, increased fuel diversity and less concentrated generation patterns.
- In order to determine the extent of the benefits resulting from disclosure and the effectiveness of the scheme, it is recommended that Member States undertake monitoring and evaluation of the disclosure scheme.