

**ENERGY CHARTER  
SECRETARIAT**

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Brussels, 15 September 2006

Related documents: CC 311
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**DECISION OF THE ENERGY CHARTER CONFERENCE**

**Subject:      Recommendations on the In-depth Energy Efficiency Review of Sweden**

[In document CC 311 of 28 July 2006 the delegations were invited to adopt the following conclusion:]

*“The Conference welcomed the report on the In-Depth Energy Efficiency Review of Sweden. The Conference endorsed the recommendations made to the Government of Sweden”.*

[Delegations unable to approve this proposal were requested to notify the Secretariat of their opposition in writing by no later than 15 September 2006. No such notifications had been received. The above conclusion has been considered as endorsed.]

Keywords:      In-depth Review of Energy Efficiency Policies, PEEREA, Recommendations, Sweden

## **Recommendations on the In-Depth Review of the Energy Efficiency Policy of Sweden**

as adopted by the Energy Charter Conference  
by written procedure

### **Executive Summary**

#### **Background**

After a relative decline in the economy in early 1990's Sweden has seen strong GDP growth in the past decade. Sweden has lower inflation, a higher employment rate, less unemployment and lower interest rates than the EU as a whole. Indicators point to a high quality of life and per capita incomes. Sweden has a large and decentralized public sector. During the last decade Sweden has strengthened competition legislation and deregulated a number of sectors, but the state remains the corporate sector's largest shareholder.

The green welfare state is a priority goal for the Government and is the basis for its sustainable development policy. Sweden's development priorities include modernization and innovation, reflected also in important investments in research.

Sweden's energy supply depends largely on nuclear power, oil products, and renewables which have a relatively high share of about 26%. Hydro power production is substantial. Electricity from CHP plants and wind mills is increasing as is also heat produced from combustible renewables and waste.

The energy intensity of Sweden has been decreasing since 1996, but is higher than the average of the European OECD countries. This is reflecting the cold climate, but is also a result of the dominance of energy intensive industries. Consumption of electricity for space heating is high, although the contribution from district heating features a substantial increase since 1990.

#### **Energy Policy**

The energy policy of Sweden is based on the 1997 and 2002 Energy Policy Agreements. Further steps in the nuclear power production phase out, approved by a referendum in 1980 and started in 1999, will amongst other depend on the rate of introduction of alternative energy generation and improvements in the efficiency of energy use.

The current government's energy policy aims at creating the conditions for efficient energy markets, security of supply and comprehensive consideration of the environment, health and the climate. In 2005 the Government set as a policy target to create the conditions necessary to break Sweden's dependence on fossil fuels by 2020 and a national programme against dependence on oil was initiated. Solutions are seen in replacing oil with biofuels, but also in measures to reduce energy use or to increase energy efficiency.

Sweden liberalised its energy markets in 1996 Integration of the Swedish electricity market with the electricity markets of the other Nordic countries and the electricity

market organised in the Nord Pool have contributed to developing a competitive electricity market.

The Energy Markets Inspectorate (EMI), established in 2005 as the national regulatory authority, supervises the electricity and gas network companies and monitors the markets for electricity, natural gas and district heating. It is also actively engaged in strengthening the positions of energy customers on the deregulated energy markets.

Energy taxation has been a successful tool in Sweden to reduce consumption of oil and other fossil fuels and at the same time to promote renewable energy and increase energy efficiency. There is an energy tax on electricity and fossil fuels, a carbon dioxide tax on fossil fuels, and a sulphur tax is charged on all fossil fuels and peat. A green tax shift strategy has gradually been implemented in Sweden since 2001.

### **Energy Efficiency Policies and Programmes**

Energy efficiency has been long on the political agenda of Sweden and has been incorporated in the strategic energy and climate change decisions of the government. The energy efficiency policy of Sweden is also driven by the EU directives.

There are a number of energy efficiency programmes currently running in Sweden:

- The strategic 2002 Energy Policy Programme for Efficient Energy Use (2003-2007);
- The Energy Efficiency Investment Programme for Public Buildings (2005-2007);
- The Sustainable Municipality Programme (2003-2008);
- The Programme for Energy Efficiency in Energy Intensive Industry (2005-2009);
- Investment support for conversion from direct electricity and oil heating to district heating, bioenergy, heat pumps and solar heating (2006-2010);
- The National Programme for Energy Efficiency and “Energy Smart” Buildings, launched in 2006.

Energy taxes and tax rebates, subsidies and grants, technology and public procurement schemes, energy labelling, municipal and regional energy advice, information dissemination, and support for R&D are among the major policy instruments incorporated in the programmes.

Sweden allocates substantial budget funds for the promotion of energy efficiency and renewable energy. In many cases these funds are used to leverage funding by industry and consumers.

The Ministry of Sustainable Development is responsible for the energy efficiency and renewable energy policy of the government, supported by special commissions (“committees of inquiry”). The Swedish Energy Agency is responsible for the implementation of energy efficiency policy programmes and measures in the residential, services and industry sectors. The Swedish Environmental Protection Agency and the National Board of Housing, Building and Planning are also active

contributors to sustainable energy policy implementation in their respective areas of responsibility.

### **Renewable Energy Policy**

Renewable energy has gained substantial importance in Sweden. Sweden has operated different systems for supporting electricity production from renewable energy sources since the 1990s. Currently, the major types of economic incentives used in Sweden to promote renewable energy include: CO<sub>2</sub> tax and tax exemptions, green certificates, tax deductions, subsidies and grants, and support to R&D.

Carbon dioxide taxation resulted in a substantial increase in the share of renewable energy, primarily biomass and waste energy used in district heating and also stimulated combined heat and power production. The implementation of the green electricity certificate system introduced in 2003 led to increased production of “green” electricity followed by higher targets for renewable electricity production.

An active strategy for carbon dioxide-neutral transport biofuels and the introduction of green cars is increasingly influencing the transportation sector.

### **Overall assessment of progress**

Sweden has taken ambitious legislative initiatives including programmes to promote and support energy efficiency and renewable energy with the objective to substantially reduce its dependence on fossil fuels and also to phase out nuclear power. The energy efficiency and renewable energy policy are implemented by successfully using a variety of policy instruments. Nevertheless, to reach the ambitious targets, further improvements need to be made, especially in the overall analysis and assessment of the economic potential of energy efficiency and renewables in the country, more effective regulation of the district heating sector and promotion of CHP, increased cooperation with municipal authorities and involvement of small and medium sized enterprises and services in energy efficiency programmes. The review team has formulated recommendations for improvements in these key areas.

## **Recommendations**

### *General*

- The government should undertake more analyses of long term demand and supply with a view to better assess the potential contribution of energy efficiency and renewables in the energy balance of the country.
- In implementing the relevant EU directives, the government should adopt a higher level of commitment, reflecting the importance given to energy efficiency in the overall energy policy in the country.

### ***Energy efficiency legislation, policies, and programmes***

- The government should ensure that the proposed National Programme for Energy Efficiency and Energy Smart Buildings covers all the key areas for improving energy efficiency and includes clearly defined objectives and implementation mechanisms.
- The government should further promote public awareness on the benefits of improving energy efficiency and secure more public involvement in the policy making in this area.
- The government should further strengthen the monitoring and evaluation of the energy efficiency programmes.
- Synergies between energy efficiency and climate change mitigation measures should be further explored in the implementation of environmental policies and programmes.
- The government should undertake additional measures to improve energy efficiency and renewables implementation in small- and medium- size enterprises (SMEs), especially in the services sector.
- The government should ensure that the cost for obtaining energy certificates for buildings is not creating a barrier for public acceptance.

### ***Institutional framework***

- The government should ensure that the growing policy requirements in the area of energy efficiency and renewables are matched with adequate capacity in the responsible implementing institutions.
- Given the high number of organisations with responsibilities in the energy efficiency and renewables areas, the government should make efforts to secure continuous good coordination between them.
- Municipalities should be encouraged to make wider use of available instruments for improving energy efficiency at community level.
- Building on the experience gained so far, the government should further support the development and improve the effectiveness of the local energy advisors network in cooperation with municipal authorities.

### ***Energy markets and pricing***

- The government should further strengthen the role of the Energy Market Inspectorate with a view to ensure that market liberalisation and competition benefits are transferred to the energy consumers.
- The government should consider introduction of effective regulation of the district heating sector.
- The government should assess the benefits of introducing individual heat metering in centrally heated buildings.

### ***Energy efficiency funding and fiscal policies***

- The government should further develop the energy taxation system in a way to encourage energy efficiency improvements while not constraining economic development, social welfare, and competitiveness of the national industry.
- Considering the existing potential and the declared targets for energy efficiency improvements in buildings in the country, the government should provide greater support for R&D in this area.
- The government should further encourage the private sector to invest in energy efficiency, including through the use of ESCOs and performance contracting.
- The property tax system should be further developed in a way to secure incentives for energy efficiency measures in buildings.
- The government should consider more energy efficiency oriented tax system for cars, accompanied by other measures such as energy labelling.

### ***Renewable energy and cogeneration***

- Building up on the experience gained with the electricity “green” certificate system, the government should develop similar market mechanism for the promotion of energy efficiency projects.
- The government should analyse the potential for CHP and promote measures, including market based mechanisms, supporting its development.
- The government should map the economic potential for RES, including small hydropower, with a view to increase their contribution to the energy mix of the country.
- Programmes for developing the market for alternative fuels in the transport sector should be continued and coordinated with the car and automotive industry.