

## **PART III. NATIONAL REPORTING GUIDELINES FOR CSD-14/15 THEMATIC AREAS**

### **B. ENERGY**

Ministry for Foreign Affairs of Iceland  
Department of Natural Resources and Environmental Affairs

#### **National strategy and policies**

Iceland has abundant renewable energy resources. Its policy is to make the fullest use of these resources in a sustainable manner. This policy has been successful. Today nearly all of Iceland's electricity and space heating is provided by renewable sources, i.e. hydropower and geothermal energy. This constitutes over 70% of all local energy consumption. The remaining 30% are provided by imported fossil fuels which are used for vehicles, vessels and some industrial processes.

Iceland converted from oil to geothermal district heating during the period 1940 to 1975. Today, 87% of space heating comes from geothermal resources and most of the rest is provided with renewable electricity. The direct utilisation of geothermal heat for district heating is still being increased with the support of the government, which assists small communities in obtaining long-term low interest loans for geothermal development. Iceland is sharing its experience of geothermal development with developing countries through the geothermal department of the University of the United Nations, located in Iceland.

The economic and environmentally viable potential for electrical production from renewable resources in Iceland has been estimated at over 50 TWh/a, of which only 17% have been harnessed. Iceland's electrical consumption per capita is over 29 MWh/a, the highest in the world.

Iceland strives to increase the use of its sustainable energy resources by offering the country as a site for power intensive industries, thus decreasing the global pollution caused by energy production with fossil fuels. This reflects Iceland's policy of international cooperation for ensuring sustainable use of natural resources, a cornerstone of Iceland's foreign policy.

The sustainable utilization of renewable energy is a key factor in ensuring a sustainable future of the world economy. Renewable energy is local by nature, but the globalization of the world economy has led to the internationalization of energy use. Products made with energy in one part of the world are consumed in another. The translocation of energy intensive industries to locations with abundant renewable energy resources has become an important task, which cannot be achieved without international cooperation.

Furthermore, Iceland is actively studying means to decrease its reliance on imported fossil fuels by utilizing its sustainable energy resources. Already in the year 1999, Iceland made clear its intention to proceed towards a Sustainable Hydrogen Economy. Hydrogen can be produced with any primary energy source, and its use as an energy carrier could enable Iceland to use its renewable energy to power on-land transportation and fishing vessels.

Iceland is aware that the hydrogen economy will not be developed in isolation. Iceland is an active participant in international cooperation on hydrogen development. It is a founding member of the International Partnership for

Hydrogen Economy (IPHE), and participates in the EU Hydrogen and Fuel Cells Technology Platform. It also participates in the Hydrogen Implementation Agreement of the IEA.

The government has offered Iceland as an international platform for hydrogen research and experiments. A company committed to hydrogen development was established in 1999 with the participation of all major stakeholders in the energy and research sector in Iceland, official and private. This company formed a joint venture with the participation of major international stakeholders in the private sector, Shell hydrogen, Daimler Chrysler and Hydro, which has become a vehicle for hydrogen projects in Iceland.

A public hydrogen fueling station has been built in Reykjavik with three hydrogen fuel cell buses operating as a part of the Ecological City Transport System Project (ECTOS), supported by the European Commission. Other parallel cooperation projects have already been initiated for developing and introducing hydrogen as a fuel carrier for ships and for exploring possibilities of exporting hydrogen.

At the same time, Iceland is working on new technologies, which may increase the potential of Iceland's renewable energy resources. Iceland is starting a deep drilling research program to maximise the utilisation of geothermal energy. It is estimated that the energy from geothermal wells can be multiplied by drilling up to 4 – 5000 meter wells, two times deeper than at present.

Furthermore, Iceland is mapping its considerable wind energy potential. Wind energy has not yet been used for electricity on the island because of higher cost in comparison with hydro- and geothermal resources.