

Why Finland Needs Additional Nuclear Power

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Teollisuuden Voima Oy (TVO) received on 24th of May with satisfaction the positive decision in principle from the Finnish Parliament, which enables TVO to continue the construction process of a new nuclear unit. The central argument of TVO's application in November 2000 was the need of competitive and CO₂-free generating capacity.

Finland is the northernmost member of the European Union. Energy plays a vital role in the Finnish economy and welfare because of cold climate, long transportation distances and energy intensive industry. The industrial consumption maintains a high demand for base-load power. Over 600 000 dwellings are currently heated by electricity. In the past few years, 70-80% of those families building a new one-family house have chosen electricity as their means of heating.

Electricity production in Finland is diversified and is based on the use of several fuels. Only one third of electricity is obtained from domestic sources like hydro, wood and peat. The share of nuclear electricity is 27 %. Fossil fuels provides slightly over one fifth. Electricity import has increased to 15 %. About half of that has been imported from Scandinavian countries, and the other half from Russia.

The electricity demand is predicted to grow at a rate of 1,0-1,5% a year during the next decade. Consumption would increase in industry and at a same rate in services and domestic sectors. The estimate takes into account strong actions for enhanced energy efficiency. The potential is, however, limited due to actions, which already have been taken. The increasing demand has to be met while at the same time looking into the future to a time when older fossil plants reach retirement. Account taken to both factors mean that 3800 MW of new generating capacity is needed by 2015. The latest study, published by the Finnish State Research Center (VTT), show that taking into account the ageing fossil fuel based capacity, the need of additional capacity is 7500 MW by year 2020.

In the coming years, possibilities to continue electricity import from Scandinavia seem to be decreasing, especially when yearly rainfall is normal or less, and because of the increasing consumption in Sweden and Norway.

The climate issue has been taken seriously in the Finnish debate on future electricity supply forms. The political agenda of the present Government includes a commitment to meeting the targets set in the Kyoto Protocol, and those relating to the burden shared by the member states of the European Union. In Finland we have to limit the greenhouse emission to the level of 1990.

In Finland we have very few alternatives to prevent the growth CO₂-emissions in electricity production. We have already implemented many of those means, which other European countries are just considering. For instance Finland is a leading country in combined heat and power production. Electricity produced through combined heat and power production meets one-third of Finland's total power demand. We use quite a lot renewable energy sources; in 2001 hydro power generated 16 % and bio-fuelled plants 11% of Finland's electricity demand.

In respect of renewable energy sources in Finland, investments are made especially in further use of bio energy, but efforts are also made to increase the proportion of wind power and other renewable energy sources. Domestic renewable sources will not, however, be enough to cover the predicted increases in electricity needs

Studies carried out by the Finnish Ministry of Trade and Industry show that using more nuclear power together with renewables is the most efficient and economical way to meet the greenhouse gas emission reduction targets set by the Kyoto protocol .