

13. FINLAND

13.1 Energy Policies and Actions

Energy policy is of exceptional importance for Finland due to its cold climate and structure of its industry which needs a lot of energy. As Finland has no fossil fuel energy resources like oil and coal, it has been developing more efficient way of using energy. Most of the energy in Finland is produced from fossil fuels, mainly coal and oil, which are all imported. Nevertheless, Finland fares exceptionally well with renewable energy. Some electricity in Finland is imported from Russia, Sweden and Norway.²⁴⁹

In November 2005, the Ministry of Trade and Industry Energy Department issued a government report named "Outline of the Energy and Climate Policy for the Near Future - National Strategy to Implement the Kyoto Protocol"²⁵⁰, which is a new energy strategic revised from the National Climate Strategy approved in 2001. It presents the Government's outlines for the energy and climate policy in the coming years as well as the actions required to meet the national emission target set for Finland for the Kyoto commitment period. Below shows some key energy strategies outlined in the report:

- Preserve/Improve the diversity of Finland's energy system and the security of energy supply
- Increase the volume of indigenous energy sources and their share of total energy consumption during the period 2005 - 2025
- Increase markedly the share of renewable energy sources (e.g. bio-energy)
- Import less energy to reduce its percentage of total consumption²⁵¹

Based on the above energy strategies, the Finnish government has taken actions for its energy and climate policy as shown below.

Security of Energy Supply

Ensuring the security of energy supply is one of the most important tasks of energy policy. Safeguarding the availability of imported fuels with stocks is part of maintaining security of energy supply. The National Emergency Supply Agency is responsible for the maintenance of the State's emergency supplies and the administrative tasks related to the emergency stocking of imported fuels. Emergency plans on steering energy production and consumption are kept up-to-date in case of disturbances in energy supply. These include plans on reducing energy consumption by means of recommendations and regulation, as necessary.²⁵²

²⁴⁹ Source: http://en.wikipedia.org/wiki/Finland#Energy_policy

²⁵⁰ Full report can be obtained from this link: http://www.ktm.fi/files/16129/jul27eos_2005_eng.pdf

²⁵¹ Referenced to the government report named "Outline of the Energy and Climate Policy for the Near Future - National Strategy to Implement the Kyoto Protocol", http://www.ktm.fi/files/16129/jul27eos_2005_eng.pdf

²⁵² Referenced to the web site of the Ministry of Trade and Industry Energy Department, <http://www.ktm.fi/index.phtml?l=en&s=196>

Energy Financing

The Ministry of Trade and Industry Energy Department has granted energy aid for investments in the energy sector. It aims to (i) develop energy economy to a more environmentally friendly direction; (ii) promote the take-up of new technology; (iii) increase the security and versatility of energy supply; (iv) increase the use of renewable energy sources; (v) reduce the environmental hazards arising from energy production and consumption.²⁵³

Energy Taxes

Energy taxation is a central instrument of energy and environmental policy. It aims to curb the growth of energy consumption and steer the production and use of energy towards alternatives causing less emissions. The current energy taxation scheme has been in use since 1997. The energy taxation scheme includes various subsidies. As mentioned above, the most important ones in terms of energy policy are tax subsidies paid for power production based on renewable energy sources.²⁵⁴

Renewable Energy Sources

There was a programme for promoting renewable energy 2003-2006. The goal of the programme is to make the energy produced with renewable energy sources competitive on the open market. According to the programme, the use of renewable energy should be increased by around 30 per cent by the year 2010 compared to the year 2001. The programme is expected to reduce carbon dioxide emissions by 4.5-5.5 million tonnes compared to the basic scenario of 2010. Development and commercialisation of new technology and economic means of steering, such as energy taxation, investment subsidies and aid for the production chain of forest-converted chips, are the key measures. Various statutes, regulations and agreements, as well as communications and training are other important methods. A steering group managed by the Ministry of Trade and Industry has been set up for the implementation and monitoring of the programme.²⁵⁵

²⁵³ Referenced to the web site of the Ministry of Trade and Industry Energy Department, <http://www.ktm.fi/index.phtml?l=en&s=189>

²⁵⁴ Referenced to the web site of the Ministry of Trade and Industry Energy Department, <http://www.ktm.fi/index.phtml?l=en&s=193>

²⁵⁵ Referenced to the web site of the Ministry of Trade and Industry Energy Department, <http://www.ktm.fi/index.phtml?l=en&s=180>

13.2 Environmental Evaluation/SEA in Finland

In Finland, it is a statutory requirement under the “Act on the Assessment of the Impacts of the Authorities’ Plans, Programmes and Policies on the Environment (200/2005)” (i.e. SEA Act)²⁵⁶ (came into force on 1 June 2005) to implement SEA processes that an environmental assessment of the authorities’ policies, plans and programme should be carried out if:

- the policy, plan or programme is drawn up for purposes of agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, regional development, land use, environmental protection or nature conservation and it sets the framework for decisions on permits for or approval of projects; or
- the assessment duty referred to in section 65 of the Nature Conservation Act (1096/1996) applied to the plan or programme.²⁵⁷

The legislation aims to (i) ensure that environmental impacts are assessed and duly considered during the preparation and approval of authorities’ plans and programmes; (ii) improve the availability of information, and provide more opportunities for public participation in planning; and (iii) promote sustainable development.

The legislation has been drafted in accordance with both the European SEA Directive (2001/42/EC), which requires that environmental assessments should be carried out for certain types of strategic plans and programmes, and a related protocol of the United Nations’ Economic Commission for Europe (UNECE) on strategic environmental assessments.²⁵⁸

Under sections 8 and 9 of the SEA Act, the authority responsible for a plan or programme should investigate and assess any likely significant environmental impacts caused by implementation of the plan or programme and the alternatives to be examined, and should prepare an environmental report, and carry out consultations, taking into account the environmental report and the results of consultations in decision-making, and the provision of information on the decision.

Under section 2 of the SEA Act, environmental impact is defined as the direct or indirect effect of a plan or programme in Finland and outside Finland’s territory on the following aspects:²⁵⁹

- human health, living conditions and amenity;
- soil, water, air, climate, flora, fauna and biodiversity;
- community structure, built environment, landscape, townscape and cultural

²⁵⁶ Extracted from <http://www.ymparisto.fi/default.asp?node=19744&lan=en>

²⁵⁷ Originated from the web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/download.asp?contentid=44490&lan=en>, Section 4 - Plans and programmes requiring environmental assessment.

²⁵⁸ Originated from the web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/default.asp?node=17876&lan=en#a1>

²⁵⁹ Extracted from Web site of Finland’s Ministry of Environment, <http://www.ymparisto.fi/download.asp?contentid=44490&lan=en>

heritage;

- the utilisation of natural resources; and
- interrelations between the factors referred to all the above.



Nuclear power station in Finland²⁶⁰



Biofuels station in Finland²⁶¹

²⁶⁰ Source: [http://www.tvo.fi/uploads/YVA_ohjelma_EN\(1\).pdf](http://www.tvo.fi/uploads/YVA_ohjelma_EN(1).pdf) Page 28

²⁶¹ Source: <http://www.vapo.fi/eng/biofuels/?id=941>

13.3 Environmental Evaluation/SEA on Energy Policies and Actions in Finland

Energy-related policy, plan or programme in Finland follows the requirements of the “Act on the Assessment of the Impacts of the Authorities’ Plans, Programmes and Policies on the Environment (200/2005)” as such an environmental assessment should be carried out if the implementation of the policy, plan or programme involves a potentially significant impact on the environment. All details of the requirement can be referred to the Section 13.2.

According to the “Guidelines of the Environmental Assessment for plans, programmes and policies in Finland” published by the Ministry of the Environment, energy strategy, energy conservation programme and the sectoral plans on energy are examples of plans, programmes and policies whose implementation involves a potentially significant impact on the environment and thus need to carry out SEA. ²⁶²

A summary table for the energy policies and actions and SEA status in Finland is presented in **Exhibit FI-1**.

Exhibit FI-1 Summary of Energy Policies and Actions and SEA Status in Finland	
(a) Energy Policies and Actions	
Energy Policies and Actions	Policies: <ul style="list-style-type: none"> ● Outline of the Energy and Climate Policy for the Near Future – National Strategy to Implement the Kyoto Protocol Actions: <ul style="list-style-type: none"> ● Secure energy supply ● Energy financing ● Energy taxes ● Adopt renewable energy
Guidance/Legislations for Energy	N/A
(b) Environmental Evaluations / SEA Status in Energy Policies and Actions	
Type of Assessment	Strategic Environmental Assessment
Requirement Mechanisms	Statutory
Legislation for Environmental Evaluation / SEA	Act on the Assessment of the Impacts of the Authorities’ Plans, Programmes and Policies on the Environment (200/2005)
Applications	Policies, Plans and Programmes

²⁶² Referenced to the Guidelines of the Environmental Assessment for plans, programmes and policies in Finland, <http://www.ymparisto.fi/download.asp?contentid=19877&lan=fi>

13.4 Analysis and Conclusions

Finland has no fossil fuel energy resources while the energy consumption is incomparable huge due to its cold climate and structure of its industry which needs a lot of energy. Most of the energy is imported from other countries either in the form of fossil fuels or electricity. In this connection, renewable energy plays an important role in energy provision in Finland. In order to meet the national emission target set for Finland in the Kyoto commitment period, the Ministry of Trade and Industry Energy Department issued the "Outline of the Energy and Climate Policy for the Near Future - National Strategy to Implement the Kyoto Protocol". Based on the strategy, the Finnish government has taken actions like securing energy supply and implementing energy taxes for its energy and climate policy.

With no indigenous energy resources, such as oil, gas or coal, the energy situation of Hong Kong is similar to that of Finland. Hong Kong has been relying on imported fossil fuels to support its energy sector. Besides, energy consumption has been increasing over the past decades, driven by the growth in the economy. While renewable energy plays an important role in energy provision in Finland, there is growing interest in the use of renewable energy for Hong Kong. The Hong Kong government has set up the Energy Efficiency Office to provide to the public useful information on renewable energy technologies, so as to facilitate the wider adoption of such technologies in Hong Kong. Examples of renewable energy in Hong Kong include solar energy, wind energy and energy from waste.

For the provisions of the Environmental Evaluation/SEA in Finland, it is a statutory requirement under the "Act on the Assessment of the Impacts of the Authorities' Plans, Programmes and Policies on the Environment (200/2005)" to implement SEA-like processes that an environmental assessment of the authorities' policies, plans and programme for energy sector should be carried out.

In the early 1990s, Finland has developed its SEA system for considering environmental issues when proposing policies, plans and programmes. Over the past 10 years, the government has tried to improve the SEA system and to establish legislations to govern the SEA requirement. Until 2005, a new legislation has come into force to implement SEA-like processes. Besides, specific guidelines have been issued for different departments to conduct SEA.

While Finland has an individual SEA legislation for the environmental assessment of plans, programmes and policies (PPPs), Hong Kong has also a statutory system to carry out SEA for certain landuse plans under the EIA Ordinance (EIAO). In order to allow responsible agents or departments to explicitly know under what circumstances they need to conduct SEA and how to conduct SEA, Hong Kong's SEA framework may have a more detailed categorisation for different sectors and specific guidelines for each sector would be essential for reference.

13.5 Examples of Energy Policies/Actions or their Environmental Evaluation/SEA

Example FI-1 Kolarctic ENPI CBC Programme 2007-2013 Strategic Environmental Assessment (SEA) in the context of a regional development scheme ²⁶³	
Type of Study	Strategic environmental assessment (Required statutorily under the Act on the Assessment of the Impacts of the Authorities' Plans, Programmes and Policies on the Environment (200/2005))
Description of Study	<p>The area covered by Kolarctic ENPI CBC program covers the Region of Lapland in Finland, Province of Norrbotten in Sweden, Counties of Nordland, Troms and Finnmark in Norway, and Murmansk and Arkhangelsk Oblasts and Nenets Autonomous Okrug in Russia. Hydroelectric power is produced throughout the programme area except for the Arkhangelsk Oblast.</p> <p>The most urgent environmental threats in the Kolarctic programme Area are climate change, acidification, radioactive pollution and the risk of emergencies, oil and hydrocarbon pollution and the risk of emergencies, unsustainable use of natural resources, loss of biodiversity and pollution of drinking water. The aim of the study is to draw attention on environmental concerns and disasters to avoid the advancement of environmentally perverse economic incentives and to promote environmentally positive or indirectly positive incentives.</p> <p>The study also aims to guarantee that environmental consequences of certain plans and programmes are identified and assessed during their preparation and before their adoption.</p>
Summary of Alternatives	<p>The alternatives considered in the study include:</p> <ul style="list-style-type: none"> ● Economic and social development ● Common challenges ● People to people co-operation and identity building ● The zero-alternative (i.e. not to implement Kolarctic ENPI programme)
Scope of Assessment/ Study	<p>The scopes of assessment include:</p> <ul style="list-style-type: none"> ● Air emissions ● Waste generation ● Noise ● Loss of biodiversity
Environmental Measures	<p>To strengthen the provisions of existing international treaties, there is a need for new instruments to reduce emissions increasing negative environmental impacts. Measures include:</p> <ul style="list-style-type: none"> ● Give options for developing technical construction and recommend the safest alternatives with the lowest impacts to be used in designing the projects. ● Development of technically safe infrastructure or constructions, planning of ecologically and socially safest logistics, and transportation methods. ● Development of EIA and SEA procedures as a part of environmental administration in the programme area to minimise the risk of environmental impacts. ● The transborder cooperation of experts should be increased and the knowledge level rose through common seminars and educative events. ● Reduce the risk of oil spills through regulations that are more stringent and monitoring of shipping lanes in Arctic waters. ● Public consultation and dialogues between projects, local people and

²⁶³ <http://www.lapinliitto.fi/enpicbc/kolarcticsea2007.pdf>, pages 3, 23-25, 29, 32-35. Another report link is also available as follows: www.lapinliitto.fi/enpicbc/enpicbc20072013.pdf

Example FI-1	Kolarctic ENPI CBC Programme 2007-2013 Strategic Environmental Assessment (SEA) in the context of a regional development scheme ²⁶³
	authorities can provide a forum for local people to express opinions.
Outcome of Study	No conclusion has been drawn for this draft report.

Example FI-2	Environmental Impact Assessment Programme Extension of the Okiluoto Nuclear Power Plant by a Fourth Unit ²⁶⁴
Type of Study	Environmental Impact Assessment (Required statutorily under the Act on Environmental Impact Assessment Procedure (468/1994) and the Decree on Environmental Impact Assessment Procedure (713/2006))
Description of Study	<p>The purpose of the new nuclear power plant unit is to increase the production capacity for base-load power. The construction of a nuclear power plant unit will also improve Finland's independence of electricity import and increase supply in the electricity market.</p> <p>Teollisuuden Voima Oy (TVO) is examining the construction of a nuclear power plant unit with approximate net electrical output of 1,000 to 1,800 MW and thermal power of 2,800 to 4,600 MW at Olkiluoto. The proposed nuclear power plant locates near two existing nuclear power plant units (OL1 and OL2) and a third one (OL3) under construction. In order to improve its facilities for constructing additional production capacity, the company has initiated the environmental impact assessment procedure concerning a new nuclear power plant unit that would possibly be located at Olkiluoto.</p> <p>The impacts of different alternatives were compared by means of a qualitative comparison. The major environmental impacts of different alternatives – positive, negative and neutral alike – were recorded. The environmental feasibility of the alternatives was also assessed based on the results of the environmental impact assessment.</p>
Summary of Alternatives	<ul style="list-style-type: none"> ● The non-implementation of the project as the zero-option ● Two alternative sites for the power plant unit, located to the north of the existing OL1 and OL2 power plant units, will be considered in the environmental impact assessment. ● In addition, the EIA procedure also examines two alternative locations for the power plant unit's cooling water intake as well as two alternative locations for cooling water discharge
Scope of Assessment/ Study	<p>The scopes of assessment include:</p> <ul style="list-style-type: none"> ● Air quality and climate impacts ● Water system impacts ● Impact of waste an by products and their treatment ● Soil and groundwater impacts ● Impacts on vegetation, animals and conservation areas ● Impacts on land use, structures and landscape ● Impacts on the energy market ● Environmental impact on traffic
Environmental Measures	The mitigation measures for the adverse impacts are not available in the report.

²⁶⁴ [http://www.tvo.fi/uploads/YVA_ohjelma_EN\(1\).pdf](http://www.tvo.fi/uploads/YVA_ohjelma_EN(1).pdf), pages 8, 9, 17-18, 41-46

Example FI-2 Environmental Impact Assessment Programme Extension of the Okiluoto Nuclear Power Plant by a Fourth Unit ²⁶⁴

Outcome of Study	As the EIA procedure is to be completed during summer 2008, no conclusion has been drawn in the study.
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