Assessment of climate change policies in the context of the European Semester

Country Report: Finland

Ecologic Institute

Authors team: Eike Dreblow, Matthias Duwe, Tim Wawer, Lena Donat, Elizabeth Zelljadt, Andrew Ayres

eclareon

Authors team: Robert Brückmann, Mari Tepp

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Ecologic Institute

Ecologic Institute, Berlin:

Pfalzburger Strasse 43/44
10717 Berlin
Germany

www.ecologic.eu

Contact:

Eike Dreblow,
Fellow Climate and Energy

Tel. +49 (30) 86880-165
Fax +49 (30) 86880-100
eike.dreblow(at)ecologic.eu

eclareon

eclareon GmbH

Giesebrechtstraße 20
10629 Berlin
Germany

www.eclareon.eu

Contact:

Robert Brückmann
Head of the Policy Department

Tel. +49 (30) 88 66 74 000
Fax +49 (30) 88 66 74 010
rb(at)eclareon.com

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The report provides an overview of current emission trends and progress towards targets as well as policy developments that took place over the period May 2012 to January 2013.

The content of the report represents the state of knowledge in February 2013, specific updates were made adding the latest official greenhouse gas emission data by the European Environment Agency (EEA).

Please feel free to provide any comments or suggestions to the authors through the contacts listed above.

Short summary

- ***Background:*** *Climate policy is an integral part of Finland's long-term national strategies and also widely discussed in the public sphere.*
- ***GHG target:*** *The 2011 non-ETS emissions were below of the 2013 emission allocation and according to the latest national projections Finland is expected to meet its 2020 target.*
- ***Policy development:*** *Long-term Climate and Energy Strategy for Finland is currently being updated and will be published by the end of February. Energy Efficiency Act and Climate Act are planned.*

1 Background on climate and energy policies

Finland has a long tradition of climate policy, the backbone of which is its long-term *National Climate and Energy Strategy*. This policy document presents concrete measures through 2020 and an outlook up to 2050. The strategy was published for the first time in 2001 and has been continuously updated since. The last update occurred in 2008, and the next one is expected to be published in February 2013. The strategy is complemented by additional reports that focus on specific topics such as the path towards a low-carbon society (Foresight Report 2009), the usage of the Finnish forest sector (MMM b) or the report on adaptation to Climate Change (MMMc). The long-term climate and energy strategy is implemented in several legislative acts and carried out in projects and sub-projects, which are described below in greater detail.

The importance of climate change and green growth is also reflected by ongoing public debate, in which both topics are broadly discussed from very different angles. The introduction of a climate panel ("Ilmastopaneeli") in late 2011 was intended to promote the dialogue between science and policy. Political discussion about climate change takes place at the national level and less at regional or local level. In the general elections for Finnish municipal councillors in October 2012, for example, climate change was not a very prominent topic (SITRA 2013). On the other hand, there are several local initiatives to curb greenhouse gas emissions (Ympäristö i 2013). Another aspect of the discussion is how global climate change may affect Finland and which measures Finland should take to adapt to the changes. Green growth is high on the agenda, which reflects that climate change is not only an environmental topic but is connected to all parts of the society – and often renders the discussion ambiguous.

This ambiguity is reflected in the discussion on Finnish energy policy, too. The Ministry for Employment and the Economy (Työ- ja elinkeinoministeriö – TEM), which is mainly responsible for energy policies, describes Finnish energy policy priorities as follows: "Finnish energy policy rests on three fundamentals: energy, economy and the environment. Securing energy supply, competitive energy prices and meeting the EU's

common Energy and Climate goals are core elements1. There is no indication which of these fundamentals should be granted priority in case of conflict. Finland is one of the few countries in the EU building new nuclear power plants to achieve its energy policy targets. It also has a long tradition of using renewable energy sources, mainly biomass and hydro. One third of the country's total energy consumption comes from renewables, but significant room for improvement remains - construction of wind energy plants is hampered by various administrative barriers, and in order to further reduce the environmental impact of energy production Finland could also reduce the amount of energy produced from peat.

As for green jobs, there are several sources of (sometimes conflicting) data. According to a report that was published in late 2012, the turnover of the renewable energy sector was €905 million (an increase of 14.4% from the previous year.) and employment in that sector encompassed 6188 people in 1371 workplaces in Finland (Varsinais-Suomen ELY-keskus 2012). Other sources show that the share of employment in water collection, sewerage, waste collection, and remediation activities in Finland in 2011 was above 2%, and that the share of employment in the RE sector as percentage share of total employment in 2010 was below 8% (Green Jobs, 2012, p. 3-4). A study conducted for DG Employment found that the impact of the Renewable Energy Package 2010 was positive for direct employment (e.g. in forestry, construction and energy) and indirect employment (e.g. in private and public services) but that the net impact was lower employment overall: 4000 fewer jobs when compared to the "business as usual" scenario (OECD 2012, p. 117-121). The Finnish government uses the term "cleantech business" and has identified it as one of Finland's economic policy priorities. The Ministry of Employment and the Economy forecasts 40,000 jobs in the cleantech sector by 2020, with a turnover of €40 billion by 2018 (TEM f 2012).

2 GHG projections

Background information

In 2011, Finland emitted 67.0 Mt CO_2eq (UNFCCC inventory 2011); a 5% reduction compared to 1990 levels. The largest share of emissions in 2011 come from energy supply. Emissions in that sector have increased by almost 60% between 1990 and 2010 driven by an increased national demand for electricity coupled with Finland's high dependency on fossil fuels and peat. From 2010 to 2011 emissions could slightly be reduced. A sharp decline of emissions was observed for energy use since 1990 due to improvements in energy efficiency and the shift from oil heating to district and electric heating. These developments even outweighed the increasing demand for energy in the manufacturing industry and the growing number of dwellings in Finland. Emissions from transport grew 6% from 1990 to 2010 due to the growth in traffic volume. A slight decrease could be observed from 2010 to 2011. Increasing emissions from industrial processes from 1990 to 2005 can be explained by the growth in production of chemicals

[1] http://www.tem.fi/index.phtml?l=en&s=2070.

and iron and steel. Since then, emissions could be reduced (UNFCCC inventory 2011, EEA 2012c, UNFCCC 2012).

Progress on GHG target

There are two sets of targets to evaluate: 1) the Kyoto Protocol targets for the period 2008-12 (which has just ended) and 2) the 2020 targets for emissions not covered by the EU ETS.

Under the Kyoto-Protocol, the emission reduction target for Finland in the period 2008-2012 is to return to the base year emissions with 1990 being the base year for CO_2, CH_4 and N_2O and 1995 for F-gases. The latest available greenhouse gas data (for the year 2011) shows that Finland's emissions have decreased on average by 5.6% compared to the Kyoto base year (EEA 2013a). Finland is thus expected to meet its commitment by a comfortable margin through direct domestic emission reductions.

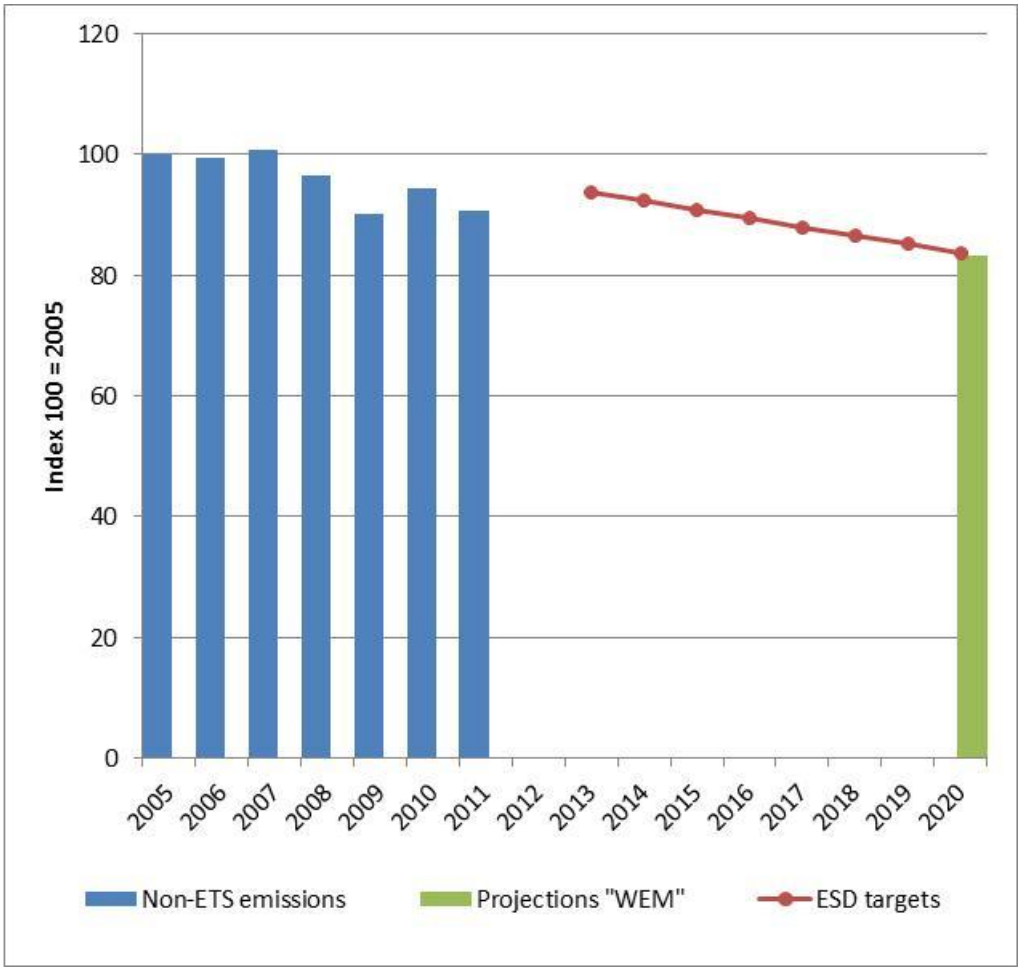
By 2020, Finland needs to reduce its emissions not covered by the EU ETS by 16% compared to 2005, according to the Effort Sharing Decision (ESD) ([2]). The latest data suggest that Finland is currently on track to meet this target. According to the 2011 inventory data, emissions in 2011 were 3% below the Annual Emissions Allocation (COM 2013) for the year 2013. National projections show Finland reducing its non-ETS emissions by 16% compared to 2005 (exactly the target) in scenarios with existing measures and by 20% with additional measures ([3]) (EEA 2013b).

Figure 1 shows Finland's non-ETS emissions until 2011, its targets under the ESD for the period 2013-2020 and its projections with existing measures for 2020

[2] Decision No 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.

[3] Calculations are based on domestic emissions only, without accounting for possible use of flexibility options. The 2020 targets and 2005 non-ETS emissions are all consistent with 2013-2020 ETS scope, i.e. they take into account the extension of the ETS scope in 2013 and the unilateral inclusion of installation in 2008-2012.

Figure 1: Non-ETS emission trends and projections compared to the ESD targets



Source: EEA. Projections are based on 15/04/2013 draft GHG inventory submissions under the UNFCCC and MS projections submitted

Table 1: GHG emission developments, ESD-targets and projections (in Mt CO_2eq)

					ESD target*		2020 Projections**	
	1990	2005	2010	2011	2013	2020	WEM	WAM
Total	70.4	68.7	74.5	67.0				
Non-ETS emissions		34.9	33.0	31.7	32.7	27.7	27.5	26.5
(% from 2005)				-9%	-6%	-16%	-16%	-20%
Energy supply	19.2	21.9	30.5	24.6				
(% share of total)	27%	32%	41%	37%				
Energy use (w/o transport)	20.5	16.5	14.7	13.7				
(% share of total)	29%	24%	20%	20%				
Transport	12.8	13.7	13.4	13.2				
(% share of total)	18%	20%	18%	20%				
Industrial processes	5.1	6.4	5.8	5.6				
(% share of total)	7%	9%	8%	8%				
Agriculture	6.7	5.8	6.0	5.9				
(% share of total)	9%	8%	8%	9%				

Source: UNFCCC inventories 2011; EEA (2013b); COM (2013). Calculations provided by the EEA and own calculations.

** The ESD target for 2013 and for 2020 refer to different scopes of the ETS: The 2013 target is compared with 2011 data and is therefore*

consistent with the scope of the ETS from 2008-2012; the 2020 target is compared to 2020 projections and is therefore consistent with the scope of the ETS from 2013-2020. Non-ETS emissions in 2005 for the scope of the ETS from 2013-2020 amounted to 33.0 Mt CO_2eq.
*** 2011 projections with existing measures (WEM) and with additional measures (WAM).*
Legend for colour coding: green = target is being (over)achieved); orange = not on track to meet the target
Total greenhouse gas emissions (GHG) and shares of GHG do not include emissions and removals from LULUCF (carbon sinks) and emissions from international aviation and international maritime transport.

National projections of GHG emissions up to 2020, summarised by the EEA, need to be prepared by the Member States in accordance with the EU Monitoring Mechanism ([4]) every two years, and the latest submission was in 2013. The projections need to be prepared reflecting a scenario that estimates emissions reductions in line with policies and measures that have already been implemented (with existing measures, WEM), and an additional scenario that reflects developments with measures and policies that are in the planning phase (with additional measures, WAM) may also be submitted.

In the following two tables, these measures - as outlined by Finland as basis for the projections as of April 2011 ([5]) - have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most ([6]). An update on the status of the policies and measures is included in order to assess the validity of the scenarios.

Table 2: Existing and additional measures as stated in the 2011 GHG projections

Existing Measures (only important national measures; w/o EU legislation)		Status of policy in January 2013
Energy	Act on the production subsidy for electricity produced from renewable energy (feed-in tariff) (1396/2010)	Introduced in the beginning of 2011.
	Adjustment of land use and building act with respect to planning and permitting for wind power to facilitate the planning and construction of wind power sites	An adjustment of the *Land Use and Building Act* entered into force on 1 January 2013.
	Decisions-in-principle for the construction of two additional nuclear power units.	The Finnish parliament approved construction two new power plants in July 2010.
	Energy taxes accounting for the energy content, carbon dioxide emissions and local/particle emissions for petrol, biofuels, diesel, gas oil, biogas, oil, heavy fuel oil, electricity, coal, natural gas and peat	In force.
Energy Efficiency	Act on Ecodesign and Energy Labelling (1005/2008, amendment 1009/2010)	The amended law is still in force.
	State subsidies for residential buildings for energetic rehabilitation and for the use of	Some of the subsidy went only through the end of 2012. Others are still in

[4] Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol.

[5] The respective policies and measures were not available at the time of the preparation of this country report. Thus, policies and measures as outlined in April 2011 are given here

[6] The implementation of the EU-ETS has not been included. Other EU Directives have only been considered if they have been outlined in the projections as one of the main instruments to reduce GHG emissions.

	renewable heat. Subsidies may be given to housing companies, to low-income families for offsetting material costs and to households in general to transferring to renewable energies	place with eligibility changes.
	Voluntary Energy Efficiency Agreements covering industries, municipal sector, oil sector, real estate sector, transport, farms	In force through 2016.
	Renewed Building regulations (2012): Provides minimum standards for new buildings	Tighter energy regulations for new buildings and renovations came into force on 1.7.2012 and 1.1.2013, respectively.
Transport	Act on Biofuel Distribution Obligation (446/2007 and amendment 1420/2010)	The amended act is in force.
	Car tax on passenger vehicles differentiated according to emissions (gCO_2/km)	The act entered into force in 2008. The latest amendment (increase of the tax) entered into force on 1.3.2012.
	Vehicle Tax Act differentiated according to emissions (gCO_2/km)	In force. The latest amendments (increase of the tax) entered into force 1.1.2013.
	Voluntary energy efficiency agreement in the transport sector on goods transport and logistics, and on public transport services	The agreement on goods transport and logistics encompasses 750 companies with 4150 cars. The public transport agreement was joined by 11 companies with a fleet of 550 cars.
	Public Transport Act 869/2009 (creation of an operational environment to provide basic public transport services) and state aid for public transport services in big cities	Entered into force end of 2009.
Other non-ETS sectors	Nitrates Directive (1991/676/EEC) to reduce the use of nitrogen fertilisers and to improve manure management	The law regulating the use of nitrogen fertilizers and manure management (law no. 931/2000) was first implemented November 2000. Amendments to it in 2010 altered the manure storage rules and adjusted the quantities of nitrogen fertilizer in different regions.
	Environmental Protection Act/Regulation of F-gases; modification 7.11.2008/681	Environment Protection Act (no.86/2000) and regulation concerning F-gases (no.681/2008) are in force.
	Government decree on landfills (861/1997, revised 2006) and Biowaste strategy (2004) to minimise organic waste transported to landfills	In force. New Waste Act and regulations completing it came to force on 1.5.2012 (laws no. 646-666/2011). Government decree on waste (179/2012) foresees that by 2016 > 50% of all organic waste is recycled.

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, April 2011.

Additional Measures: Still to be implemented (only important national measures; w/o EU legislation)		Status of policy in January 2013
Transport	Introduction of road user charges or other financial measures	In 2012 a working group set up by the Ministry of Transport and Communications to weigh the long-term implications of introducing a road user charge presented conclusion in November 2012 recommending to increase the maximum weight and dimensions allowed for heavy weight vehicles from the current 60 tonnes to 76 tonnes. No legislative action has been taken yet.
Other non-ETS sectors	Increase the area of multiannual crops on organic soils	No specific or legislative action taken on this measure in 2012
	General Waste reform (submitted as bill to Parliament (He 199/2010)) to reduce production of waste, amount of organic waste transported to landfills, to promote recycling and reuse	New Waste Act and regulations completing it (implementing the waste reform) entered into force on 1.5.2012 (laws no. 646-666/2011).
	Economic instrument to reduce F-gas emissions: mandatory registry used to collect taxes or apply fees combined with a deposit for gases with undesirable characteristics	Not implemented

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, April 2011.

3 Evaluation of National Reform Programme 2012 (NRP)

In April of each year, Member States are required to prepare their National Reform Programmes (NRPs), which outline the country's progress regarding the targets of the EU 2020 Strategy. The NRPs describe the country's national targets under the Strategy and contain a description of how the country intends to meet these targets. For climate change and energy, three headline targets exist: 1) the reduction of GHG emissions, 2) the increase of renewable energy generation, and 3) an increase in energy efficiency ([7]).

In the following table, the main policies and measures as outlined in the NRP of April 2012 ([8]) have been summarised, and their current status (implemented, amended, abolished, or expired) is given, with specifics on latest developments.

[7] There are specific targets for all MS by 2020 for non-ETS GHG emission reductions (see section 2) as well as for the renewable energy share in the energy mix by 2020 (see section 4, renewable energies). Specific energy efficiency targets will be defined (or revised) by the MS until the end of April 2013 in line with the methodology laid out in Article 3 (3) of the Energy Efficiency Directive (Directive 2012/27/EU).

[8] All NRPs are available at: http://ec.europa.eu/europe2020/documents/related-document-type/index_en.htm

Table 3: Main policies and measures as outlined in the NRP, April 2012

Update Climate and Energy Strategy and implementation of strategy	
Status as stated in the NRP	To be done in 2012
Status as per Jan 2013	Still under discussion, update now foreseen for February 2013.
Description of policy or measure	The long-term climate and energy strategy has been defined in separate strategy papers in 2001, 2005 and 2008. The latest strategy was accepted by the Government on 6th November 2008. The strategy describes climate and energy policy measures in detail until 2020, and in brief thereafter, up to 2050. The strategy 2008 is currently being updated by a ministerial working group on energy and climate policy in accordance with the Government programme. According to the Ministry of Employment and the Economy, the update shall enable Finland to meet the energy and climate policy targets set for 2020.The new strategy will include a programme to reduce oil dependence.

Implement tighter building regulations	
Status as stated in the NRP	Regulations for new buildings to come into force in July 2012
Status as per Jan 2013	Tighter energy regulations for new buildings and for renovations to existing buildings came into force on 1.7.2012 and 1.1.2013, respectively.
Description of policy or measure	This measure refers to implementation of the Directive on Energy Performance of Buildings, which required a number of legislative changes in Finland. The new rules represent a change in the way energy efficiency is calculated, and require certification of energy performance (as completed via third party assessment) for new and existing buildings.

Prepare a proposal for a Climate Act	
Status as stated in the NRP	No specific timeline given
Status as per Jan 2013	A ministerial working group is preparing a draft of the Climate Act. Key elements include an 80% emissions reduction target for the year 2050, as well as regulatory and procedural aspects. The act would cover both mitigation and adaptation (Ympäristö k 2013)
Description of policy or measure	The purpose of the Climate Act is to steer the reduction of emissions arising from outside the emissions trading scheme.

Overhaul forest legislation	
Status as stated in the NRP	No specific timeline given
Status as per Jan 2013	The cornerstone of Finnish forest policy is the National Forest Programme 2015, approved on 16.12.2010. Several of its measures are implemented on an ongoing basis but no comprehensive overhaul of the plan occurred in 2012.
Description of policy or measure	The aim of the overhaul as stated in Finland's reform programme is to strengthen the economic base of forestry and forest industry, and to secure both biodiversity and the interests of the national economy, users of wood, and forest owners. Forests cover more than 70 per cent of the land area of Finland. A total of 20.3 million hectares is available for wood production, 61 per cent of this privately owned. The forest is an important resource both for environmental and climate change issues (the sustainability of the forest serves to preserve Finland's carbon sink capacity), but also for economic reasons, as the forest industry is an important employer.

Identify subsidies harmful to the environment and decide on the reallocation of subsidies	
Status as stated in the NRP	To be done in 2012
Status as per Jan 2013	Ongoing
Description of policy or measure	A working group, lead by the Ministry of Finance, has gone through existing subsidies and identified which ones might be harmful. Most subsidies that were discussed are tax subsidies. Currently ministries are discussing how subsidies should be restructured. Background documents will be published in the future.

Make an interim review of the Climate Policy for Transport Programme	
Status as stated in the NRP	To be done in 2012
Status as per Jan 2013	The review was published on 13.12.2012
Description of policy or measure	Under the title "Climate Policy Programme for the Ministry of Transport and Communications' administrative sector for 2009-2020 - a progress report 2012" ("Liikenne- ja viestintäministeriön hallinnonalan ilmastopoliittinen ohjelma 2009–2020. Seuranta 2012"), the report tracks development of road transport and emissions as well as the growing passenger volumes of public transport.

Prepare a review of material efficiency potential, innovation needs, impacts and indicators in collaboration with stakeholders	
Status as stated in the NRP	To be done in 2012
Status as per Jan 2013	According to the Ministry of the Environment, implementation of this measure started in January 2013 with a first working group meeting led by the Ministries of Economy, in close cooperation with the Ministry of the Environment. The review process will use assessments of challenges in the Finnish economy's material efficiency made as part of a research project conducted by the Finnish Environment Institute on behalf of the Ministry of the Environment. The results of this work will be available in February/ March 2013.
Description of policy or measure	The goal of the review is to improve the sustainable use of natural resources and material efficiency in Finland, as overall consumption of Finland's natural resources has grown in recent decades and is fairly high by international comparisons. Materials of domestic origin constitute around half of the use of natural resources. The review is also foreseen in the Europe 2020 Strategy.

Increase taxation of transport fuels in stages	
Status as stated in the NRP	First tax increase to occur in 2012
Status as per Jan 2013	The CO_2 tax rate for traffic fuels was raised from €50/t CO_2 to €60/t CO_2 as of 1.1.2012
Description of policy or measure	In recent years, the Finnish government has introduced several taxes to steer the emission of CO_2. Tax adjustments for natural gas will take place in stages up to 2015. A low, ascending energy tax for peat is being introduced in stages by 2015.

4 Policy development

This section covers significant developments made in key policy areas between May 2012 and January 2013. It does not attempt to describe every instrument in the given thematic area. The time-frame was chosen based upon the release of the National Reform Programmes (in the section above) in April 2012, which contain the status quo for policy on most topics.

Horizontal Issues

As explained in the background, Finland lays out its long-term climate goals in its continuously updated National Climate and Energy Strategy. Previous versions were adopted in 2001, 2005 and 2008. The next update is being done by a ministerial working group overseen by the Ministry of Employment and the Economy, which expects to release the final version in the coming weeks. According to the ministry, the long-term goal is a carbon-free society (with a reduction of GHG emissions by at least 80%) by 2050. Among other things, the document will lay out how Finland's target of having renewable energy account for 38% of final energy consumption in 2020 will be met, including removing administrative barriers for wind power and providing €20 million for offshore wind pilot projects.

A cross-cutting programme targeted at cutting not just energy use, but resource use more generally, is called “More from Less – Wisely”. Seeking to promote material and energy efficiency in the public sector as well as in companies and households, the programme consists to a large extent of information measures and coalition-building amongst government ministries, research institutions, citizens and the private sector – it funds pilot projects that deal with a specific topic or challenge. One such pilot project targeted reduction in waste of perishable food, with participants creating networks to share and store food and getting shopkeepers involved. The first round of projects has now been concluded. In a next step, the results will be analysed and some of the projects will be scaled up. The programme, which aims to take a holistic approach involving green growth concepts, is lead by the Ministry of the Environment, the Ministry of Employment, and the Economy in conjunction with research institutions, the Finnish Funding Agency for Technology and Innovation (Tekes) and the Finnish Innovation Fund Sitra.

Environmental Taxation

At 112.5 € per tonne oil equivalent, the implicit tax rate on energy in the Finnish economy was below the EU average in 2009 (Eurostat, 2013). Despite having a fairly energy-intensive economy, energy tax revenue as a percentage of GDP was still relatively low at 1.8% in 2010 (19th in the EU). Environmental taxation revenues (including relatively high transportation taxes), on the other hand, were eighth-highest in the EU at 2.8% of GDP (Eurostat, 2012).

In recent years, the Finnish government has introduced several taxes to steer the emission of CO_2. In January 2011, the system of energy taxation, which had a CO_2 component already since 1990, was changed. The revised fuel tax has an energy component and a CO_2 component, which is based on a life-cycle approach to emissions. In that reform the tax rates on fuels for non-road vehicles (including boat and airplane fuel) were raised considerably, from €20 per tonne CO_2 to €50, and the rate for heating fuels was raised to €30/tonne – with a 50% reduction for heating fuels used in combined electricity and heat (CHP) production. The CO_2 tax rate for traffic fuels was raised from €50/t CO_2 to €60/t CO_2. To balance the new energy component, the relative weight of CO_2 in the total tax for coal, natural gas and fuel oils was reduced. Tax adjustments for natural gas will take place in stages up to 2015. A low, ascending energy tax for peat is being introduced in stages through 2015.

The Finnish Car Tax Act and the vehicle tax were revised and increased by law in 2011. The reform of the two taxes entered into force on 1.3.2012 and 1.1.2013. The National Climate and Energy Strategy will contain further environmental tax measures.

Energy Efficiency

Energy intensity in the Finnish economy increased between 2005 and 2010 by approximately 1.5%. Final energy consumption was 2% lower in 2011 than the 2001-2005 average, likely influenced by the global economic crisis. This reflects a decrease in industrial consumption that was partially counterbalanced by increases in the transport and service sectors (Eurostat, 2013).

Finland promotes efficiency measures in several overarching programmes that contain sub-programmes. ERA17 is an Action Plan (toimintaohjelma) on energy-efficiency and building matters. Published in 2010, it contains proposals for a wide range of areas including distributed generation of electricity, construction, real estate management and

land use. Some of the ideas have been adopted into the current government's agenda, while are being implemented in separate projects, the longest of which run through 2017.

Finland transposed the EU Energy Performance of Buildings Directive via tightening of building energy performance requirements that entered into force for new buildings in July 2012 and for renovation of existing buildings in January 2013. Buildings now also require a certification of energy performance. The new rules represent a change in the way energy efficiency is assessed: total energy consumption of a building is taken into account, the upper limit for energy efficiency is calculated based on the construction type expressed through a so-called e-coefficient. The e-coefficient takes into account various types of resource use, allowing district heating and renewable energy sources (such as pellets and geothermal energy) to reflect positively in the building's overall energy efficiency rating. The new law also gives more design freedom by taking into account net energy used inside a building - in addition to heating, the e-coefficient applies to ventilation, lightning and hot water.

Aside from standards, Finland also subsidises household energy efficiency improvements through a grant scheme for repairs to buildings that involves an act (1184/2005) and a decree (128/2006) - these are continuously updated, with the most recent amendment occurring on 13.01.2013. The grants subsidise various activities related to the improvement of heating systems and energy efficiency such as insulation materials and new windows, but also supporting activities such as providing access to the district heating network and energy auditing. The grant can finance up to 25% of the total cost of the activity undertaken. Subsidies for such energy efficiency measures in residential buildings ended on 1 January 2013, but continue for some conservation measures for row houses and blocks of flats. Budgets are decided each year.

Renewable Energy

Finland's energy sector exhibits a high percentage of renewable sources, which increased from 28.7 to 32.2% between 2005 and 2010. Finland is thus already nearing its 38% target for 2020. Its electricity sector also has a high share of renewable generation, but no increase was documented between 2005 and 2010 (Eurostat, 2013).

Since early 2011, the main promotion scheme for electricity from renewable sources In Finland is a premium feed-in tariff for electricity from wind, biomass and biogas. The support rate varies depending on technology – electricity from biogas receives €ct 8.35 per kWh with a possible heat bonus €ct 5 per kWh, electricity from biomass receives €ct 1.8 - 8.35 per kWh with a possible heat bonus of €ct 2 per kWh, and wind receives €ct 8.35 - 10.53 per kWh. In contrast to most other support schemes in the European Union, the Finnish premium feed-in tariff is not funded through the final consumers via the electricity bill but through the budget of the Energy Market Authority. The foreseen budget for the scheme amounts to €34 million. The premium feed-in-tariff has led to large wind power projects so that the capacity of installed wind power has amounted to 288 MW end of 2012 after 199 MW in 2011 and 196 MW in 2010. The tariff only applies to large installations in wind, biomass and biogass – not photovoltaics or for instance biomass plants with a nominal capacity of less than 100 kVA.

The Finnish government is currently seeking to clarify and streamline administrative processes associated with wind power facilities, as regional Environmental Centers (ELY Keskus) have been interpreting siting regulations differently Finnish defence forces impose restrictions on radar and aviation. In addition to an information brochure clarifying

regulations to the ELY staff and wind project developers, a working group has been established that produce results on wind power streamlining in May 2013.

Beyond the tariffs, Finland also offers grants for renewable power projects and research via its subsidy or "energy aid" scheme. All types of renewable energy projects are eligible, including solar, hydro, and geothermal – and not just projects involving actual stationary sources of renewable power, but even research projects involving renewable energy can apply to be subsidised. A company or entity receiving a subsidy must bear at least 25% of the total project costs, but the grant covers up to 40% of investment costs for selected applicants.

Recent amendments to the above-mentioned grant scheme for energy efficiency also extended its support to renewable energy, focusing on renovations of single-family houses with the purpose of deploying renewable technologies.

Energy Networks

The Estlink project is an interconnection between Estonia and Finland to secure power supply and to integrate Baltic and Nordic Energy Markets. Estlink 1 (350 MW capacity) is in operation since December 2007. Estlink 2 (600 MW capacity) will become operative by the end of 2014. The responsible ministry on Finland's side is the Ministry of Employment and the Economy. Costs for the construction are estimated at €430 million.

Since 2009, the Finnish government has been pushing through legislation on the large scale introduction of electricity smart meters. As a consequence, by 2014 almost all end-users should have smart meters installed. The smart meter rollout is the first step toward developing the energy infrastructure for smart grids. Current discussions around smart grids take place within the Ministry of Employment and the Economy and centre around how to incentivise incorporation of micro-systems systems into the existing distribution grid.

Transport

Greenhouse gas emissions from the transport sector decreased slightly between 2005 and 2011 (see Table 1), and taxation of transport (excluding fuel charges) is fifth highest in the EU, bringing in revenues equivalent to 0.9% of GDP (Eurostat 2012). Meanwhile, despite an increase of almost 20% in vehicle emissions efficiency from 2005 to 2011, newly registered cars in Finland were still relatively inefficient, emitting on average 143.9 gCO_2/km driven - 4% above the EU average (EEA 2012e).

Finland aims to achieve the EU's long term emissions-per-kilometer objective for new cars in 2020: 95 g/km. The goal with regard to the entire vehicle fleet is that by 2020 the average CO_2 emissions would be 137.9 g/km at the most. Measures to achieve these goals include applying Finland's passenger vehicle tax on the basis of emissions rather than vehicle weight, motor size, etc. – this has been done since 2008 and strengthened through an amendment in March 2012. Currently a working group at the Ministry of Transport and Communications is weighing the options for introducing a road tax in the future – the upcoming Energy and Climate Strategy will contain more details. Revising the fuel tax into an energy component and a CO_2 component, as described in above in the subsection on environmental taxes, is a further measure with impact on transport sector emissions.

Current biofuel obligations constitute Finland's implementation of EU biofuels directive (2003/30/EC) and have been in force since 2008 – they set an annual minimum share of biofuels, measured from the total energy content of petrol, diesel and biofuels delivered for consumption. Amendments to these rules came into force on 1 January 2011, specifying further obligations for fuel-mixing: six per cent for 2011–2014, followed by a phased increase to 20% by 2020.

LULUCF

Finland's comprehensive *National Forest Programme 2015* (NFP), adopted on 16 December 2010, sets out plans, regulations and measures pertaining to forest management and the forest products industry (including furniture and paper products) affecting emissions from the category land use, land use change and forestry (LULUCF, or carbon sinks). The plan includes several measures implemented on an ongoing basis at the national and regional level that pertain to green growth and job creation in the forest and natural resources sector and also have implications for emissions, as forests are carbon sinks. For example, a recent NFP activity was a workshop on "New economic incentives for natural forest management" which took place in October 2012. The annual budget of the NFP and its many programmes fluctuates (it depends partly on industry contributions, which vary over time) but is estimated at €600-800 million. NFP estimates indicate that in 2009, approximately 83,000 people were employed in forest management and forest-related industries including furniture.

5 Policy progress on past CSRs

As part of the European Semester, Country Specific Recommendations (CSRs) for each MS are provided by the EU Commission in June of each year for consideration and endorsement by the European Council). The recommendations are designed to address the major challenges facing each country in relation to the targets outlined in the EU 2020 Strategy. In the following table, those CSRs that are relevant for climate change and energy that were adopted in 2012 are listed, and their progress towards their implementation is assessed.

No CSRs related to climate change and energy were issued for Finland in 2012.

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