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

Country Report: Austria

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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.

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Short summary

- ***Background:*** *Austria has implemented strategies and policy instruments in all climate change-related areas. A special focus lies on the promotion of renewable energy and energy efficiency.*
- ***GHG target:*** *Austria is on track in 2011 to meeting its 2013 non-ETS emission target, while projections show that Austria needs additional measures to meeting its 2020 non-ETS emission target.*
- ***Policy development:*** *An important step was taken with the amendment of the Bill on Green Electricity that is expected to eliminate a queue of proposals for PV installations waiting for approval. Furthermore, a Transport Master Plan was introduced, which sets ambitious targets, and an Energy Efficiency Act is expected to come into force in 2013.*

1 Background on climate and energy policies

Climate change is an important topic in the political debate in Austria. Policies and measures related to environmental issues are in place, and the topic is discussed widely in the national media. There is a focus on the use of renewable energy sources (RES), as the Austrian government offers multiple instruments to support the build-up of RES. Austria exhibits a large share of RES in total electricity generation: The share in 2010 was about 69%, predominantly generated by hydro-power (51.6%). With no nuclear and only 7% coal, Austria has an extremely flexible generation mix.

The Austrian government has been implementing various policies concerning the achievement of the 2020 greenhouse gas (GHG) emission target. A Climate Change Bill was introduced in 2011 and is the key tool of the Austrian government for dealing with climate change. The bill sets maximum amounts of emissions for different sectors (transport, heating, waste, industry, agriculture, F-gases, and other emissions) and covered originally the period from 2008 to 2012 (Lebensministerium 2011). During this period, proceedings were made in the fields of waste and space heating, while emissions in the transport and industry sector are still above the sectoral target amounts (Lebensministerium 2012f). In December 2012, a proposal for an amendment to the Climate Change Bill was published that sets the maximum amount of GHG emissions in 2013 at 51.57 million tons CO_2eq which is approximately equivalent to the average from 2008-2012. By 2020, the GHG emissions from sectors not covered by the European Emission Trading Scheme (EU ETS) should be reduced to 47.87 tons of CO_2eq reflecting the Effort Sharing Decision (ESD) target (see Chapter 2) (Lebensministerium 2012a). Public consultations on the bill closed in January 2013.

To achieve the targets set by the bill, the National Climate Committee gathers regularly to develop measures on energy efficiency, renewable energy, spatial planning, mobility, waste management, natural carbon sinks, and economic incentives (Lebensministerium 2012b). Furthermore, the climate protection initiative "klima:aktiv", designed by the Federal Ministry of Agriculture, Forestry, Environment and Water Management and implemented by the Austrian Energy Agency, offers counselling, training facilities, and

quality assurance in four priority areas (energy efficiency, construction and renovation, renewable energies, mobility) (Klima:aktiv 2013).

The Climate and Energy Fund (Klima- und Energiefonds KLIEN) promotes R&D in the field of sustainable energy technologies and climate research (Lebensministerium 2011). The fund covers the fields of large solar power plants, thermal refurbishment, climate and model regions, and E-mobility. Furthermore, 17 projects of the Austrian Climate Research Programme (ACRP) will be supported with around €4.4 million in 2013 (Klimafonds 2012). According to an evaluation of the fund by the Austrian Environmental Agency, the optimistically estimated impact of the fund for annual greenhouse gas emissions reductions in 2030 is approximately 4,700 kt/yr, in the case of an optimal mixture of research, demonstration, and market introduction. The potential for a reduction of final energy consumption is 6,800 GWh/yr for the same period (Umweltbundesamt 2012). The potential for producing energy from renewable sources is approximately 5,200 GWh/yr for the year 2030. Currently the fund is supporting 416 projects with a total budget of €20.23 million.

In October 2012, the Federal Ministry of Agriculture, Forestry, Environment and Water Management published a National Adaptation Strategy. It includes an action plan and stipulates specific measures in 14 different sectors (i.a., agriculture, tourism, hazard management, forestry, health). The implementation of the strategy is to be monitored according to a criteria catalogue, which will be developed by the end of 2013. Furthermore, a scientific-economic evaluation of the consequences of climate change, including a list of potential costs, will be published in the middle of 2015 (Lebensministerium 2013a).

Green growth plays an important role in Austria's public policy. Austria is pursuing a Sustainability Strategy which aims to decouple economic growth and emissions growth. For example, the Austrian government supports regional green clusters and maintains a catalogue of Austrian environmental and energy technologies ([1]). In 2010, the government published a Master Plan "Green Jobs" with the main target to increase the number of green jobs to 285,000 by 2020. The focus lies on agriculture and forestry, environmental technology and renewable energy, as well as the tourism industry. The biggest potential for job creation is expected to be created through investment in insulation, heating replacement, and renewable energies (Lebensministerium 2010). According to the Federal Ministry of Agriculture, Forestry, Environment and Water Management, there are currently 210,000 green jobs in Austria generating approximately 11.8% of the GDP and representing around 5% of total employment (Lebensministerium 2012c). This number has been constantly growing mainly as a consequence of the booming renewable energy sector.

[1] For more information see the website of BMWFJ: http://www.bmwfj.gv.at/WIRTSCHAFTSPOLITIK/NACHHALTIGKEIT/Seiten/Nachhaltigkeitsstrategien.aspx

2 GHG projections

Background information

In 2011, Austria emitted 82.8 Mt CO_2eq (UNFCCC inventory 2011), 6% more than in 1990. The biggest share stems from energy use and transport. Between 1990 and 2010, emissions from transport increased by 60%. This can be attributed to an increase of almost 100% in tonne kilometres travelled in freight transport and a 25% increase in the number of person kilometres travelled in passenger transport. In 2011, emission from transport slightly decreased. Since Austria is a transit country and fuel prices have been low compared to adjacent countries until recently, a considerable part of emissions from transport is the result of fuel export. Emissions from energy use, however, remained relatively constant between 1990 and 2011. Emissions from industrial processes increased slightly, reflecting the use of halocarbons and sulphur hexafluoride, as well as the growing production of stainless steel and cement (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 Austria for the period 2008-2012 has been set to minus 13 % based on 1990 levels. An evaluation of the latest complete set of greenhouse gas data (for the year 2011) shows that Austria's emissions have increased on average by 4.8% since 1990 (EEA 2013a). Therefore, Austria is not likely to meet its Kyoto target through domestic emissions reductions directly.

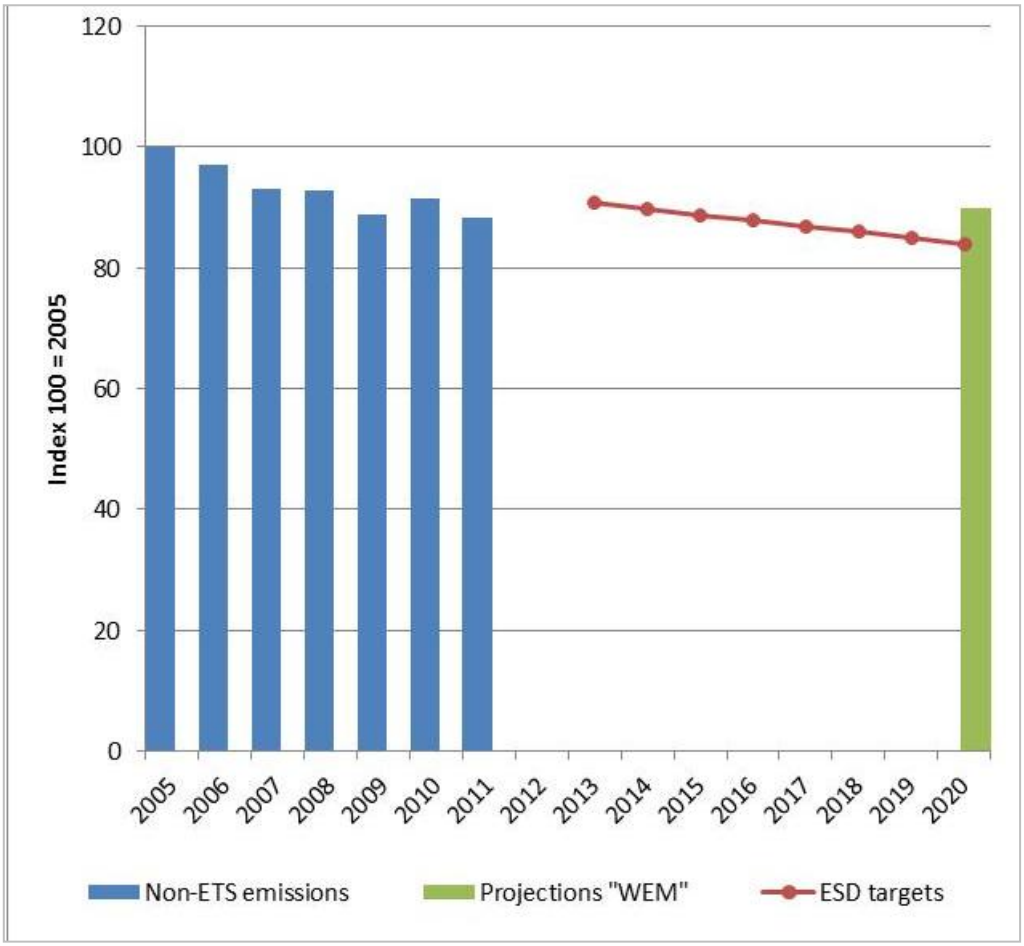
By 2020, Austria needs to reduce its emissions not covered by the EU ETS by 16% compared to 2005 in accordance with the Effort Sharing Decision (ESD) ([2]).The latest data for 2011 suggests that Austria is on track at present to meet the 2013 Annual Emissions Allocation (COM 2013) for the year 2013. However, the national projections (EEA 2013b) show that Austria might fail to meet its 2020 target if no additional measures are taken ([3]).

Figure 1 shows Austria's non-ETS emissions until 2011, its targets under the ESD for the period 2013-2020 and the 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	78.2	92.9	85.0	82.8				
Non-ETS emissions		59.1	54.1	52.2	53.6	47.9	51.3	47.8
(% from 2005)				-12%	-9%	-16%	-10%	-16%
Energy supply	13.8	18.4	16.7	16.0				
(% share of total)	18%	20%	20%	19%				
Energy use (w/o transport)	27.2	30.2	27.4	25.7				
(% share of total)	35%	33%	32%	31%				
Transport	14.0	25.0	22.5	21.8				
(% share of total)	18%	27%	26%	26%				
Industrial processes	10.1	10.6	10.8	11.2				
(% share of total)	13%	11%	13%	14%				
Agriculture	8.6	7.4	7.5	7.6				
(% share of total)	11%	8%	9%	9%				

Source: UNFCCC inventories; 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 57.0 Mt CO_2eq.
*** 2013 projections with existing measures (WEM) or 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 Austria 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	Amendment to the green electricity act 2008 (Federal Law Gazette I No. 114/2008)	Implemented
	Combined Heat and Power (CHP) Act (Federal Law Gazette I No. 45/2008)	Implemented (KWK-Gesetz)
	Austrian climate and energy fund (KLI.EN)	Implemented
	Domestic Environmental Support Scheme (UFI)	Implemented
	Enhanced fuel efficiency of passenger cars	Promoted by the klima:aktiv programme and tightened bonus/malus system
Energy Efficiency	Public support for new buildings	Support for new buildings under the Energy and Climate Fund phased out in 2012
	National energy efficiency action plan EEAP on small consumption for heating and hot water in the residential and commercial sector	Implemented
Transport	Toll for heavy duty vehicle ”Bundesgesetz über die Mauteinhebung auf Bundesstraßen“ (Federal Highways Toll Act, Federal Law Gazette I No. 109/2002); toll introduced on 1.1.2004	Implemented

[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.

	EU-Biofuels Directive (Dir. 2003/30/EC) implemented through the legislative act entitled "Kraftstoffverordnung" (Fuel Ordinance), 4.11.2004 (Federal Law Gazette II No. 417/2004).	Implemented
	EURO classification (EURO 4, 5 & 6 for passenger cars, light duty vehicles and heavy duty vehicles), EURO 3 for Motorcycles, stage 3b for off-road machinery	Implemented
	Klima:aktiv mobility programme	Implemented
Other non-ETS sectors	Ordinance on fluorinated gases (Federal Law Gazette II No. 447/2002) and its amendment 2007 (Federal Law Gazette II No. 139/2007)	Implemented
	Solvent Ordinance	Implemented (Lösungsmittelverordnung LMV 2005)
	Ordinance for paint finishing systems	Implemented (LackieranlagenVO 1995)
	Federal Ozone Act	implemented (Ozongesetz OzonG)
	Ordinance on chlorinated hydrocarbons in industrial facilities and installations	Implemented
	Ordinance limiting emissions of volatile organic compounds (VOC) due to the use of organic solvents in certain activities and installations	Implemented
	Ordinance on the limitation of emissions during the use of solvents containing highly volatile halogenated hydrocarbons in industrial facilities and installations	Implemented

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**
Energy	First national energy efficiency action plan	Implemented
	Amendment to the Green Electricity Act 2008 (Federal Law Gazette I No. 114/2008)	Implemented
Transport	Speed limits, traffic control systems and fuel saving driving style	Partly implemented: e.g. klima:aktiv provides training for fuel saving driving style
	Increased fuel tax	Implemented on January, 1st 2011
Other non-ETS sectors	More premiums for organic farming	The UBAG programme (Umweltgerechte Bewirtschaftung von Acker- und Grünflächen) is not active, but ÖPUL (Österreichisches Programm für umweltbewusste Landwirtschaft) promotes eco-friendly agriculture
	Payments for investments in technologies reducing emission from livestock breeding	No reliable information available on recent developments.

	Setting aside additional land for short rotation forests	No reliable information available on recent developments.
	Use of 7,000,000 m^3 slurry in 2015 and 800,000 m^3 slurry from 2020 onwards for biogas production	No reliable information available on recent developments.

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.

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

Ökostromgesetz (ÖSG) 2012, i.e. green electricity law 2012 (coming into force: 1 July 2012)	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	The feed-in tariff promotes increased generation of electricity from renewable energy sources.

Funding offensive for thermal refurbishment (since February 2012): 100 million Euro annually.	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	Campaign for the thermal refurbishment of buildings older than 20 years with financial support of 70 million Euro for private residential buildings and 30 million Euro for companies.

[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

Funding offensive for thermal refurbishment (since February 2012): 100 million Euro annually.	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	Campaign for the thermal refurbishment of buildings older than 20 years with financial support of 70 million Euro for private residential buildings and 30 million Euro for companies.

2nd National Energy Efficiency Action Plan	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	Detailed description of national energy efficiency policies

Climate and Energy Fund	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	The Climate and Energy Fund (Klima- und Energiefonds KLIEN) promotes R&D in the field of sustainable energy technologies and climate research

Resource Efficiency Action Plan (REAP)	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	The REAP sets targets to increase the efficiency in the use of natural resources. Furthermore, it identifies key action areas and suggests tools and measures for a tangible increase of resource efficiency in Austria.

Stakeholder initiative „Wachstum im Wandel“, i.e. growth in transition	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	Supported by more than twenty institutions (ministries, provincial governments, stakeholders, NGOs), the Initiative wants to stimulate a broad discussion on the issue of an economic and financial system, fit for the future, and the evaluation of the future prosperity and quality of life.

Climate protection law 2011	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	Provides an institutional frame for the development of substantial measures to increase energy efficiency, renewable energies and market-based incentives for climate change mitigation measures amongst others.

Climate protection initiative klima:aktiv	
Status as stated in the NRP	Implemented
Status as per Jan 2013	Implemented
Description of policy or measure	Initiative offering counselling, training facilities and quality assurance in four priority areas (energy efficiency, construction and renovation, renewable energies, mobility)

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.

Environmental Taxation

The energy intensity of the Austrian economy is under the average of EU MS. Nevertheless, the revenues from environmental and energy taxes are, compared to other MS, low. In 2010 the revenues from environmental taxes in terms of GDP were only 2.4%, and the revenues from energy taxes were even lower at 1.6%. Austria ranked 19th and 22nd in these two categories in comparison to other MS (Eurostat 2012). The implicit tax on energy consumption for 2009 was 145 € per tonne of oil equivalent (toe). This value is slightly above EU-27 average (Eurostat 2013).

The Austrian Statistical Agency publishes a list of eco-taxes based on the EU/OECD definition annually. Eco-taxes include the fuel tax, car taxes (circulation and registration), the energy levy (on electricity and gas), and several resource use taxes raised at the communal level. The sum of revenues from these taxes increased constantly from €4.2 billion in 1995 to €8.1 billion in 2011. 61% of these revenues were raised by energy taxes and 30% by transport taxes (Statistik Austria 2013). The following environmental taxes are currently implemented (revenues are given for 2011; only most important taxes (revenues above 500mEUR) are listed) (Petrovic 2012):

Mineral oil tax: 4,212 M€
Motor vehicles tax: 1,721 M€
Energy tax: 792 M€
Ressource tax 586 M€

The Austrian WKO (2012) states that a further increase of environmental taxes in a budgetary neutral way is not advisable, as prices would rise and threaten real wages. A reduction of labour taxes is possible in order to increase the share of environmental taxes in the total tax income. However, no official government statement regarding environmental taxation has recently been published.

Compared to other EU-15 Member States, excise duties on petrol and diesel (“Mineralölsteuer”, MöSt) are low. The tax was last raised in 2011, but the additional revenue was lower than expected since so-called “fuel tourism” decreased. In 2012, a reimbursement for part of the mineral tax, which was formerly granted to farms and local omnibuses, was abolished, and the exemption from the tax for railway was terminated as

of tax year 2013. Additionally, the bonus/malus system on the car registration tax was tightened in 2012 but the reform of the commuting allowance system (Pendlerpauschale) undertaken in January 2013 introduced allowances for part-time worker and increased the rates for low-income employees and the maximum rates that apply (both measures are further described under "Transport").

Furthermore, tax exemptions formerly granted on the energy levy to the service industry were phased out.

However, according to the Umweltdachverband, Austria granted €4.3 to €4.5 billion in subsidies in 2011 that may be causing environmental harm (Umweltdachverband 2012).

Energy Efficiency

The energy intensity of the Austrian Economy dropped between 2005 and 2010 by over 6% and is now among the five lowest in the EU. Nevertheless Austria was not able to make progress in reducing energy consumption over the last five years. Taking the average from 2001-2005 as a baseline, final energy consumption increased from 26.413 Mtoe by 5.8% to 27.933 Mtoe in 2010. This development contrasts with the EU average development of minus 1%. To a large extent, this can be attributed to increased consumption in the residential and agriculture/forestry sectors in 2010 (Eurostat 2013).

The Ministry for Economy, Family and Youth published a proposal for a new Energy Efficiency Act in December 2012. Consultations on the proposal ended on 31 January 2013. The proposal would transpose several EU Directives into Austrian law and sets an energy savings target of 80,400 Terrajoule by 2016. Accordingly, energy-intensive companies would be required to take up a variety of efficiency measures, such as regular energy auditing, depending on the size of the company. As of January 2014, energy providers would need to prove that they have undertaken efforts to encourage energy efficiency improvements among their consumers. Furthermore, the federal government would need to ensure a 3% refurbishment among public buildings. A monitoring body for energy efficiency would be created to evaluate measures taken by the federal government and companies. Additionally, the act would ensure that funding of €14 million for CHP installations is provided annually. The Act is expected to enter into force in January 2014 ([9]). The Ministry expects this measure to create 6,400 additional jobs and to increase GDB by €544 million.

Regarding the building sector, the 2009 Austrian Energy Strategy envisages a 3% rate of refurbishment for existing buildings by 2020. The Federal Ministry of Economy, Family and Youth has thus launched a support programme for thermal modernization in 2012. Total payments of €53.2 million were granted in 2012 by the Austrian government for thermal modernization of private houses more than 20 years old. Additionally, companies were supported with a total amount of €24 million. Subsidies are granted, e.g., for heat pumps, connections to district heating networks, or wooden windows, up to a maximum of €9,300 and 20% of the total investment. Approximately 16,000 buildings were modernized in 2012 with the support of this mechanism; however, only 77% of the originally assigned budget was used. The Ministry of Economy and Energy estimates that the investments led to a reduction of CO_2 emissions of 3.3 million tonnes. The low

[9] Ministerialentwurf Energieeffizienzpaket des Bundes (442/ME).

energetic and thermal refurbishment quotas and the fact that the installation of renewable energy technologies is not obligatory to receive housing subsidies are responsible for the slow development of renewable energy in the housing sector. According to Ökonews, the support triggered a total investment of €650 million and resulted in the creation or preservation of 9,800 jobs (Ökonews 2012). For 2013, €123 million are available under the programme; 70 million Euro are designated for the private sector, and a maximum of 30 million Euro may be granted to companies. The spill-over of 23 million Euro is reserved for business revival and may be granted as bonus payment. However, a 2012 study by the IHS Wien estimated that, in order to realise the 3% refurbishment rate, €3.33 billion in 2012, increasing annually to €5.49 billion in 2020, would be required (IHS Wien 2012).

The Resource Efficiency Action Plan (REAP) sets targets to increase the efficiency in the use of natural resources and identifies key action areas. Ten measures for a tangible increase of resource efficiency in Austria are foreseen in the fields of resource-efficient production, public procurement, recycling management, and awareness raising (Lebensministerium 2012d). Implementation of the current version of the plan started in January 2012, and measures will run until the end of 2013. In 2014, a progress report should be published.

Renewable Energy

The share of renewable energy in gross final energy consumption increased from 25% to over 30% between 2005 and 2010. Thus, Austria is on track to achieve its 2020 target of 34%. The share of renewable in gross electricity consumption remained at constant high levels of about 60% (Eurostat 2013).

Since the 1990s, Austria has been a front-runner in the EU concerning the share of renewables in electricity production. The 2010 Energy Strategy formulates comprehensive targets for Austria's future energy supply in order to stabilize energy consumption by 2020 at 2010 levels (1,100 PJ). Next to energy efficiency and security of supply, renewable energy represents the third pillar of the strategy. The aim is to increase electricity production from renewable sources by 17 PJ between 2008 and 2020. Wind energy and hydropower are seen as a priority, while the expansion of PV is made conditional on favourable cost development.

The production of electricity generated from renewable energy sources is mainly promoted by the Bill on green electricity ("Ökostromgesetz") that was introduced in 2002. The act provides for investment grants and guaranteed feed-in tariffs for 13 or 15 years for electricity from wind energy, PV, bio mass and biogas, geothermal plants, small hydroplants, and CHP installations. Support contracts are provided annually on a first come, first serve basis until an annual quota is reached (formerly €21 million).The tariff is based on the average production costs of cost-efficient installations and was amended several times to account for changing market realities. The generous feed-in tariffs introduced in a 2009 amendment led to a boom of wind power and PV. However, the demand for subsidies exceeded the annual support budget foreseen for new installations, so a large number of applications found themselves in a queue. For example, the annual budget foreseen for new PV installations was €2.1 million, while €20 million would be required to support all the proposals in the queue. For wind power, an additional €70

million would be required to eliminate the queue ([10]). The government thus substantially reformed the Green Electricity Bill in July 2011 (new "Ökostromgesetz 2012" entered into force in July 2012) to address the large numbers of waiting proposals. Proposals regarding wind and PV are offered to be included in the support regime if the operators voluntarily accept reduced feed-in tariffs (30% reduction for PV, 4% for wind). The annual budget for the support of new green electricity installations was raised from €21 million to €50 million in 2013; this sum will decrease annually by €1 million to account for technological development. Furthermore, technologies were subdivided into subcatogories to avoid the exhaustion of the quota by booming subcategories. Generally, feed-in tariffs are reduced by 10% if no new tariffs are determined, but in September 2012, feed-in tariffs for 2013 were published. According to the settlement agent for green electricity, the quota for PV was already exhausted in early January 2013 due to the enormous number of proposals that were handed in (OEMAG 2013). The Green Electricity Bill 2012 also sets new targets for the expansion of renewable energy: Austria is to have an additional 1,000 MW of hydro, 2,000 MW of wind, 200 MW of biomass and biogas, and 1,200 MW of PV by 2020.

The funds for renewable electricity are raised by a levy paid by end users. This system was also adjusted by the Green Electricity Bill 2012. Consumers now pay a €11 lump sum ("Ökostrompauschale") plus a contribution that is based on the consumption ("Ökostromförderbeitrag"). On average, this will sum up to an annual contribution of €53 per household (instead of the previous €35). The sum is restricted to €20 Euros for low-income households (BMWFJ 2012).

Energy Networks

The rapid expansion of renewable energy, the liberalisation of electricity markets, and growing electricity demand have caused congestion of the electricity grid. €1 billion is required in Austria to improve and expand the electricity transmission network, especially to connect new nuclear plants, pumped storages, thermal plants, and wind energy parks. Distribution grids also require improvements in order to connect the rapidly growing number of decentralized renewable energy installations

The "Masterplan Grid 2009-2020" was developed in 2009 to provide the basis for long-term network planning. The plan includes eight priority projects that will require an investment of around €1 billion. But the Austrian Power Grid Ag estimates that the value added will be closer to 80% of that. According to an update report of 2011, all projects were on schedule. The centrepiece of the strategy is the construction of a 380-kV ring that will connect all important grid nodes around Austria (Austrian Power Grid AG 2011).

Furthermore, the 2010 Act on electricity industry and organisation (ElWOG) requires the Austrian grid operator to develop an annual Network Development Plan outlining the required projects and investments for the next ten years. In June 2012 a plan was published, based on the Masterplan and listing the projects planned for 2013-2020.

The 2010, ElWOG provided the legal framework for the introduction of smart metering. A decree on the introduction of smart meters was issued in 2010. In 2012, the so-called

[10] Ministerialentwurf betreffend ein Bundesgesetz über die Förderung der Elektrizitätserzeugung aus erneuerbaren Energieträgern (Ökostromgesetz 2012 - ÖSG 2012) 270/ME XXIV. GP - Ministerialentwurf – Erläuterungen. Online available: http://www.parlament.gv.at/PAKT/VHG/XXIV/ME/ME_00270/index.shtml

"DAVID-VO" was adopted, regulating the consumer information that needs to be provided to consumers with smart meters. Austria plans to equip 95% of end-consumers with smart metering systems by 2018. This is far more ambitious than the 80% target for 2020 established by EU Directive 2009/72/EG. A 2010 PriceWaterhouseCoopers study on the topic estimates that this will require €3.2 billion of investment but will create an economic benefit of €3.6 billion. The ministry estimates that smart meters will lead to energy saving of 3.5% (Der Standard 2012).

Transport

GHG emissions from the transport sector dropped from 2005 to 2011 by about 13%. The share of GHG emissions from transport were in 2011 at more or less the same level as in 2005, showing only a small decrease (see Table 1). Taxation of transport without fuels is high compared to other MS with Austria ranking 7th among all MS (Eurostat 2012). Newly registered cars emission efficiency increased from 2005 to 2011 by 14%. They emit on average 138.7 gCO_2/km driven which is just about the EU average (EEA 2012e).

According to the Ministry for Transport, Innovation and Technology, a third of transport-related GHG emissions can be ascribed to so-called "fuel tourism". Since Austria is a transit country and fuel prices have been low compared to adjacent countries until recently, a considerable share of fuel in Austria is exported in vehicle tanks. Without considering this fuel export, Austria's transport emissions have been stable over the last years. Around 55% of transport emissions can be ascribed to passenger transport and 45% to freight transport (Federal Ministry for Transport, Innovation and Technology 2012).

A Transport Master Plan, which was introduced at the end of 2012, sets forth a catalogue of measures concerning the reduction of GHG emissions in the transport sector. The Plan aims at decreasing GHG emissions by 6% by 2020 and by 19 % by 2025. The measures are mainly concentrated on the improvement of public transport, cycling, and electro mobility. Furthermore, the plan suggests moving 40% of freight transport from road to railway by 2025. The transportation sector is one of the most important employers in Austria, with 200,000 employees. The master plan also aims to secure and create jobs in this sector (Federal Ministry for Transport, Innovation and Technology 2012).

The high share of renewable energz in electricity generation provides a very good basis for electromobility in Austria. In June 2012, different ministries cooperated in developing an Action Plan on Electromobility IN and FROM Austria. The plan lays out a catalogue of specific measures to integrate electro mobility in the transport system, to establish intelligent incentive systems and to create the necessary infrastructure. For example, the government plans to review the taxation framework for electric vehicles in 2013 (BMLFUW/BMVIT/BMWFJ 2012).

The Car Registration Tax (Normverbrauchsabgabe NoVA) regulates the charges for new cars based on fuel consumption and purchase price (Federal Ministry of Finance 2013a). Electric vehicles, trucks and omnibuses are exempted from the tax. Additionally, since 2008 a gradual CO_2 bonus/malus system is applied that was tightened in October 2012. As of January 2012, cars that emit more than 150 g CO_2/km (formerly 160g CO_2/km) pay a penalty of €25 for each excess g/km; 50€for each excess gram exceeding 170g CO_2/km; and €75 for excess grams exceeding 210 g CO_2/km. Vehicles emitting less than 120g CO_2/km receive a bonus of €300. An additional bonus/malus system covers NOx, particles, and alternative forms of engines (e.g., hybrid, E85, gas, hydrogen) granting

boni of up to €500 (Federal Ministry of Finance 2012a). The bonus payment was supposed to be terminated on 31 August 2012, but was extended to 31 December 2014.

A vehicle tax is calculated on the basis of kilowatts for passenger cars and on the basis of weight for vehicles above 3.5 tonnes. All vehicles circulating on Austrian highways and expressways also need to pay a toll ("vignette"), which is based on the number of axles of the vehicle. For cars up to 3.5 tonnes, the annual vignette for 2013 costs €80.60. For heavy commercial vehicles, a distance-related toll applies based on the number of axles and the EUROemission class (ACEA 2012).

At the same time, a substantial reform to the commuting allowance system was undertaken in January 2013. From now on the allowance is granted also to part-time employees, and it was raised for low-income employees. €2 is granted for each km, and the maximum is raised from €251 to €400 (Federal Ministry of Finance 2013b).

Agriculture

Emissions from agriculture have decreased consistently since 1990. This can be ascribed to reduced animal stock and usage of fertilizer as well as to active participation in the national environmentally responsible agriculture promotion programme. The Energy and Climate Fund provides Austrian farmers and foresters e.g. financial support for energy efficiency checks on farms as well as for consultations.

Adaptation

The national Adaptation Strategy, published on 23 October 2012, includes e.g. measures in the field of agriculture. The proposed actions vary from crop cultivation issues including the improved breed of plants to measures concerning the adapted stock farming. All in all, 14 action recommendations are introduced (Lebensministerium 2012e).

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.

Existing Country Specific Recommendations	Progress
Shift the tax burden in a budgetary neutral way, towards real estate taxes, and environmental taxes	Reimbursement to farms and local omnibuses for part of the mineral tax was abolished. Exemption from the tax for railway was terminated as of tax year 2013. The CO_2-based bonus/malus system on the car registration tax was tightened in 2012. Tax exemptions to service industry from the energy levy were phased out.

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