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

Country Report: Greece



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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 from February 2013 to November 2013.

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

Short summary

Background: The economic crisis continues to overshadow the issue of climate change on the political agenda. However, Greece has implemented climate policy instruments with a particular focus on energy efficiency and expanding grid connections to its currently isolated islands and to neighbouring states. Greece has also been recently focusing on creating sustainable financing structures for renewable energy development.

Non-ETS emission reduction target: The 2020 target is -4% (compared to 2005 emissions). A reduction of -11% in non-ETS emissions is reported for 2005 to 2011. According to the latest national projections submitted to the Commission and when existing measures are taken into account, the 2020 target is expected to be met, despite growth from current levels: -5% in 2020 compared to 2005.

Key indicators 2011:

GHG emissions	GR	EU
ESD EU 2020 GHG target (comp. 2005)	-4%	
ESD GHG emissions in 2011 (comp.2005)	-11%	-9%
Total GHG emissions 2012 (comp.2005)	-15%	-12%
GHG emissions/capita (tCO ₂ eq)	10.2	9.0

→ **13% higher** per capita emissions than EU average

GHG emissions per sector	GR	EU
Energy/power industry sector	48%	33%
Transport	18%	20%
Industry (incl. industrial processes)	12%	20%
Agriculture (incl. forestry & fishery)	10%	12%
Residential & Commercial	8%	12%
Waste & others	4%	3%

→ **Energy/power industry** sector most important.

Energy	GR	EU
EU 2020 RES target	+18%	
Primary energy consumption/capita (toe)	2.5	3.4
Energy intensity (kgoe/1000 €)	155	144
Energy to trade balance (% of GDP)	-2.4%	-3.2%

→ **26% lower** per capita consumption, 7% higher energy intensity, contribution of energy to trade balance below EU average.

Taxes	GR	EU
Share of environmental taxes (% of GDP)	2.7%	2.4%
Implicit tax rate on energy (€/toe)	161	184

→ **Higher share** of environmental taxes and **12% lower implicit tax rate** on energy than EU average higher implicit tax rate on energy than EU average

Key policy development in 2013: A number of successful support programmes were launched to increase the energy efficiency of residential and industrial buildings, some of which will continue into 2014. The Government also amended its renewable energy laws to reduce the deficit in the financing mechanism and sustain the support of existing renewable capacities. Furthermore, the government has opened bidding processes to connect the mainland Greek electricity grid to many of its now-isolated islands, as well as to Cyprus and Israel.

Key challenges: One ongoing concern is the continued affordability of Greece's climate policies: as the country remains in a state of financial stress, programmes must be designed that are extremely cost-efficient, and persistently high unemployment means that policy makers should be very aware of all costs being passed on to consumers. Expanded energy efficiency measures could be the key to reducing energy poverty by reducing consumers' energy bills while at the same time creating local employment. In addition, successful implementation of the measures listed in the National Energy Efficiency Action Plan (NEEAP) is vital so that Greece can meet its greenhouse gas (GHG) emission target.

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I Background on climate and energy policies

The severity of Greece's economic crisis continues to overshadow the issue of climate change on the country's political agenda. The second economic adjustment programme that currently dictates policy measures in Greece integrates green growth into the requested overall economic and financial policies to only a limited extent. Several civil society organisations have cautioned that environmental policies have fallen prey to the economic downturn (Ekathimerini 2012). It also has to be taken into account that the broader EU framework for climate policy is changing very quickly while Greece is implementing the adjustment programme. This is especially relevant for renewable energy, since Greece agreed to a substantial reform of the RES support scheme by 2013 as part of the December 2012 Memorandum of Understanding, signed by the Greek government as a review to the second economic adjustment programme. Other important reform targets are, for instance, electricity pricing and the adoption of smart meter technology (European Commission 2012).

2 GHG projections

Background information

In 2011, Greece emitted 115.0 Mt CO₂eq (UNFCCC inventory 2011), 10% more than in 1990. Almost half of this stems from energy production. Emissions from the electricity sector increased by 20% between 1990 and 2010, reflecting the high share of oil and coal in the energy supply mix. Similarly, emissions from transport increased by over 50% in that period, as a result of increased road transportation and a growing vehicle fleet. In contrast, emissions from energy use and industrial processes were reduced, especially within the last five years as a result of the economic crisis. Reduced fertilizer use and introduction of wet manure management with livestock resulted in decreased emissions from agriculture (UNFCCC inventory 2011, EEA 2012, UNFCCC 2012). Total GHG emissions in 2012 are expected to be at almost the same level as in 2011 (EEA 2012b).

Progress on GHG targets

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 Greece for the period 2008-2012 has been set to 25 % above the baseline of 1990 for CO₂, CH₄ and N₂O and of 1995 for F-gases. An evaluation of the latest complete set of greenhouse gas data (for the year 2011; there is only preliminary data for 2012) shows that Greece's emissions have increased by 7.5% since from the Kyoto base year to 2011 (EEA 2013a). Greece is therefore going to meet its Kyoto target through domestic emissions reductions directly.

By 2020, Greece needs to reduce its emissions not covered by the EU ETS by 4% compared to 2005, according to the Effort Sharing Decision (ESD) ⁽¹⁾. The latest data for 2012 suggests that Greece is on track at present to meet the Annual Emissions Allocation ⁽²⁾ for the year 2013. By 2020, national projections (EEA 2013b) show that the country will meet its 2020 target with existing measures with a margin of 1 percentage point (see Table 1).

Table 1: GHG emission developments, ESD-targets and projections (in Mt CO₂eq)

	1990	2005	2010	2011	2012*	ESD target**		2020 Projections***	
						2013	2020	WEM	WAM
Total	104.6	134.9	117.3	115.0	115.2				
Non-ETS (% from 2005)		63.2	57.3	56.2	53.4 -16%	58.9 -7%	58.9 -4%	58 -5%	56 -8%
Energy supply (% share of total)	43.2 41%	58.2 43%	52.2 45%	54.0 47%					
Energy use (w/o transport) (% share of total)	18.2 17%	24.8 18%	16.6 14%	16.4 14%					
Transport (% share of total)	14.5 14%	21.7 16%	22.1 19%	20.3 18%					
Industrial processes (% share of total)	10.1 10%	13.9 10%	10.5 9%	8.9 8%					
Agriculture (% share of total)	11.5 11%	9.5 7%	9.3 8%	9.0 8%					

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

* proxies for 2012

** The ESD target for 2013 and for 2020 refer to different scopes of the ETS: the 2013 target is compared with 2012 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 adjusted scope of the ETS from 2013-2020. 2005 non-ETS emissions for the scope of the ETS from 2013-2020 amounted to 61 Mt CO₂eq.

*** 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 need to be prepared by the Member States in accordance with the EU Monitoring Mechanism ⁽³⁾ every two years, and the latest submission was due in 2013. The projections need to be prepared reflecting a

¹ 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.

² Commission decision of 26 March 2013 on determining Member States' annual emission allocations for the period from 2013 to 2020 pursuant to Decision No 406/2009/EC of the European Parliament and of the Council. Online available at: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:090:0106:0110:EN:PDF>

³ 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.

scenario that estimates total GHG 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 have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most. Please note that the table includes also measures that address GHG emissions covered under the ETS, such as measures reducing emissions from electricity generation (e.g. feed-in tariffs). 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 2013 GHG projections

Existing Measures (only important national measures)	Status of policy in November 2013
Gradual decommissioning of old, inefficient thermal power units and commissioning of new ones – increase of natural gas share in electricity production	No further development
Increase natural gas consumption in all sectors	No further development
Energy	L3851/2010 has been amended and has been revised 3 times during 2012 (FiT revisions/ reductions- in aggregate 50% approximately and solidarity levy- 25%-30% of the yearly turnover for PV installations and 10% for RES operating plants) and two times in 2013. Additionally, a number of amendments have taken place (ΥΠΕΚΑ, 2013a; 2013b; Υπουργείο Οικονομικών 2011; 2012).
Promotion of RES for electricity generation	
Energy Efficiency	Partial implementation National Energy Efficiency Action Plan for industry and residential sector Programmes such as "Exoikonomo II", Green Pilot Urban Neighbourhood or "Bioclimatic Renewal of Urban Spaces", Building the Future are Programmes included in the National Energy Efficiency Action Plan and are realized (ΕΣΠΑ, 2012b; ΥΠΕΚΑ, 2012b).
Transport	Biofuel use in transportation Quota system for the year 2013 announced in February 2013 and put into force in June 2013. 92.000 km will be distributed to the applicants (ΥΠΕΚΑ, 2013c).
Networks	Interconnection of islands to mainland's electrical grid A tender for offers is issued in October 2013 and 9 proposals were submitted. The project will be realized in the form of a Public Private Partnership and is expected to have a budget of €240 million (EnergyIn, 2013).

	Establishing common rules for direct support schemes under the common agricultural policy	The CAP constitutes part of the National Strategic Reference Framework 2007-2013. As the Programmatic Period 2014-2020 is due to begin in January, there are currently ongoing discussions on the implementation of CAP in Greece for the new period.
Other non-ETS sectors	Recovery of organic waste	Law No.4042/2012 transposes the Waste Management Directive (2008/99/EC). In addition, a number of tenders have been issued for the construction of waste management facilities in different regions as a Public Private partnership (PPC). As of February 2013, there were in aggregate 396 uncontrolled waste landfills, 78 of them active. It is expected all uncontrolled waste landfills will be restored by the end of 2013.
	Recovery of biogas	Directive 1999/31/EC was transposed already in 2002. Installations that produced electricity from the recovery of biogas received special attention in the first semester of 2013. They were included in a number of technologies, whose applications for a connection offer had a priority over other RES.

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013

Additional Measures (only important national measures)		Status of policy in November 2013
Energy	Wider use of RES for electricity generation	L3851/2010 has been amended and has been revised 3 times during 2012 (FiT revisions/reductions- in aggregate 50% approximately and solidarity levy- 25%-30% of the yearly turnover for PV installations and 10% for RES operating plants) and two times in 2013. Additionally, a number of amendments have taken place. Another amendment is entered into force in October 2013 (ΥΠΕΚΑ, 2013b).
	Wider use of CHP	No further development
	Wider use of natural gas in all sectors	No further development
Energy Efficiency	Partial implementation: National Energy Efficiency Action Plan	Programmes such as "Exoikonomo II", Green Pilot Urban Neighborhood or "Bioclimatic Renewal of Urban Spaces", Building the Future are Programmes included in the National Energy Efficiency Action Plan and are realized (ΕΣΠΑ, 2012b; ΥΠΕΚΑ, 2012b).

Source: Reporting of MS in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, May 2013

Based on the current facts, some existing measures are not fully implemented. This is, however, mainly the case for the ETS-related measures such as the RES support scheme, where incremental changes over time were unfavourable for the development of RES. In other cases, such as that of the interconnection of the islands, delays due to budgetary difficulties have been observed. In relation non-ETS measures, it remains to

be seen if the measures mentioned will be implemented, in order to achieve the expected emission reductions. For example, the national agricultural policy for the programmatic period 2014-2020 is currently prepared and in the field of waste management, it remains to be seen if the existing legislative framework will be implemented and which impacts will be obtained. Some progress has been made regarding additional policies, mainly related to the National Energy Efficiency Action Plan. However, additional measures such as the wider use of CHP and natural gas, e.g. in the residential sector, cannot be deemed realizable under current circumstances.

In effect, measures listed under both the WEM and WAM scenario are very generic, making their assessment extremely difficult. However, the difficulties in implementation will not hinder limiting and reducing emissions as the current economic recession has facilitated the emissions trajectory.

3 Evaluation of National Reform Programme 2013 (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 ⁽⁴⁾.

The NRP for Greece outlines policy developments in two main sectors: renewable energy and energy efficiency. The Programme provides general information on renewables and energy efficiency as well as more specific information on the achievement of the national targets relating to the penetration of renewable energy as well as to energy savings. It should be underlined that the NRP struggles to justify that the achievement of energy efficiency targets is a sign of transition to "a more efficient and environmentally friendly national energy", thus undermining the negative consequences of the economic recession mainly experienced by the industrial sector, without, however, omitting the impact of the economic recession completely. Further sectors are not mentioned.

In the following table, the main policies and measures as outlined in the NRP of April 2013 ⁽⁵⁾ have been summarised, and their current status (implemented, amended, abolished, or expired) is given, with specifics on latest developments.

⁴ 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).

⁵ All NRPs are available at: http://ec.europa.eu/europe2020/making-it-happen/country-specific-recommendations/index_en.htm

Table 3: Main policies and measures as outlined in the NRP, April 2013

Reformation of the support scheme for electricity from RES	
Status as stated in the NRP	Reformation of the support scheme for electricity from RES
Status as per Nov 2013	L3851/2010 has been amended and was revised three times in 2012 (FiT revisions/ reductions in aggregate by approx. 50%; Solidarity levy of 25%-30% of the yearly turnover imposed on PV installations and 10% on RES plants) and twice in 2013 (ΥΠΕΚΑ, 2013a; 2013b).
Description of policy or measure	L3851/2010 streamlined the licensing procedure for RES installations. Especially small RES plants were exempted e.g. from being issued an installation license. A retroactive reduction of the FiT for PV took place in 2012 as well as in 2013 and a solidarity levy was imposed on all RES plants in November 2012. In addition, a detailed plan for the reform of the renewable energy support schemes has been composed in May 2012 with broad stakeholder participation (ΥΠΕΚΑ, 2013d).
First and Second Energy Efficiency National Action Plan (NEEAP)	
Status as stated in the NRP	Elaborated in 2008 and 2011
Status as per Nov 2013	Measures included in the Second NEEAP have been implemented. Several measures/ programmes included are still open (such as the "Energy Efficiency at Household Buildings Programme", "Bioclimatic Renewal of Urban Spaces" and "Exoikonomo II")(MEEC, 2011).
Description of policy or measure	The First and the Second Energy Efficiency Plan described energy efficiency measures that aim at improving energy efficiency in all sectors, such as the residential, industrial, and tertiary sectors. In addition, measures for transport sector as well as cross-sectoral measures are envisaged (ΕΣΠΑ, 2012b; ΥΠΕΚΑ, 2012b).
Presentation of a detailed plan and roadmap to change the market model, including measures to have effective competition in generation and supply, the development of a power exchange, introducing an intra-day market and implementing market coupling with neighbouring markets	
Status as stated in the NRP	The proposal has been submitted to the EC and is waiting for the feedback
Status as per Nov 2013	With its decisions 338/2013 and 339/2013 the Regulatory Authority on Energy (RAE) is going to implement short term transitional measures (until September 2014) in order to ensure integration of the Greek electricity Market and transposition of the regulations relating to the EU "Target Model". Additionally, on 17 September 2013, the electricity Market Operator (LAGIE) initiated a final public consultation on "Risk Management for Day-Ahead Scheduling" that was integrated in the third version of the Electricity Exchange Code (PAE, 2013a; 2013b).
Description of policy or measure	As the Greek Electricity Market presents some structural deficiencies (e.g. dominant role of PPC S.A., the biggest power producer and electricity supply company in Greece) and due to the current financial situation, the reform of the electricity market model is of crucial importance (Εφημερίδα της Κυβερνήσεως, 2013).

Large-scale replacement of existing systems with smart metering systems

Status as stated in the NRP	Ministerial Decision Δ5/ΗΛΛΑ/Φ33/2067 of 4 February 2013 foresees a gradual installation of smart metering systems, which is due to begin on 1 July 2014. Until 2014 40% and until 2020 80% of smart metering systems should be installed and replace the existing metering systems (ΥΠΕΚΑ, 2013d).
Status as per Nov 2013	Due to begin in 2014 (ΥΠΕΚΑ, 2013d).
Description of policy or measure	In collaboration with the Greek DSO, the Ministry of Environment, Energy and Climate Change aspires the gradual replacement of the old inefficient metering systems with smart metering systems. A pilot programme is already being implemented and will be completed in 2015 (ΥΠΕΚΑ, 2013d).

4 Policy development

This section covers significant developments made in key policy areas between February 2013 and November 2013. It does not attempt to describe every instrument in the given thematic area.

Environmental Taxation

In Greece, the share of environmental tax revenues in total tax revenues was at 6.25% in 2011. Compared to its GDP, these revenues amounted to 2.68%. Both values are above the EU average. Greece has no explicit carbon tax in place. The MS has an implicit tax rate on energy, which reached about €161 per tonne of oil equivalent in 2011. Greece's economy was a bit less energy intensive in 2010 than the EU average. The share of energy tax revenues in total tax revenues is the 7th highest in the EU (Eurostat 2013a).

Within the framework of the economic adjustment programme, major reforms of the taxation structure will be implemented. These reforms reflect a limited shift of taxation from labour to environment and energy consumption. For instance, an excise duty was introduced on electricity in January 2011 and on natural gas in September 2011, and a uniform tax on diesel and heating oil ⁽⁶⁾ was imposed (€330/1,000lt) in 2012 (Υπουργείο Οικονομικών 2012). The tax on heating oil was increased by around 450% in the autumn of 2012 in order to equalize taxes on heating oil and diesel. This has led to a 70% decrease in sales. There are also reports that people are turning to firewood instead of heating oil, which has caused greater air pollution (New York Times 2013). The tax on heating oil has remained the same as in 2012.

Additionally, Greece committed to ensure that electricity prices reflect costs, e.g. by phasing out regulated prices for all but the most vulnerable customers by June 2013 (European Commission 2012). As a consequence, by January 2013, electricity prices had increased about 8% for private households and about 15% for commercial, agricultural, and industrial users (Reuters 2013a). This marked a drastic increase in heating expenses, particularly when taking into consideration that some 700,000 Greeks were already unable to pay their electricity bills in 2012 (Reuters 2013b). Further increases in

⁶ Previously the implicit tax on heating oil was lower.

electricity rates were expected for May and July (Ekathimerini 2013). However, such increases were not implemented.

Energy Efficiency

The energy intensity of the economy decreased at a moderate pace (-5%) from 2005 to 2011. Total energy consumption followed the same downward trend with a decrease of 10% compared to 2005. This result stems from a decrease in the residential and industrial sectors that exceeded the increase in consumption in the transportation sector. This development almost came to a stop between 2010 and 2011, when energy consumption decreased only by 1% and fell under the EU average of 4%.

In Greece, the energy efficiency within the industrial sector increased until 2005, but declined thereafter slightly. Moreover, the energy consumption of the energy intensive industries has dropped significantly since 2010 due to the economic crisis. The energy efficiency of the Greek household sector improved between 1990 and 2010 by 17%. Most of the improvements have been achieved through improvements in the field of large electric appliances (13%) (Odyssee 2012).

Next to the promotion of renewable energy, measures on energy efficiency are a priority in Greece's climate policy. However, as the economic adjustment programme does not feature any energy efficiency-related measures, implementation appears to be secondary. However, the Renewable Energy Roadmap 2050 (see below) foresees significant energy efficiency improvements. Proposed measures include energy certification and upgrade of buildings, the introduction of white certificates for energy service companies and the electrification of transport (ΥΠΕΚΑ 2012c). In this context, Law No. 4122/2013, which transposes the European Directive 2010/31/EE concerning energy efficiency in buildings, has been approved in 19 February 2013. The law defines new minimum energy efficiency standards, sets the goal that all buildings should be zero energy emissions by 2021 (2019 for public sector buildings) and enhance the existing monitoring framework for energy inspectors.

In April 2013 the first phase of the "Building the Future" was implemented. "Building the Future" aims to upgrade the energy performance of residential and factory buildings by implementing modern energy efficiency technologies. Within this framework, policy instruments, such as white certificates, voluntary agreements between the industrial and the commercial sectors, and contracts of guaranteed performance are planned to be introduced. The first stage of the programme includes upgrades for some 150,000 buildings with a budget of €50 million.

In February 2013 approved applications were announced for the "Green agricultural and island communities – New development model" programme (⁷). The programme has a total budget of €50 million and promotes the installation of RES and energy efficiency measures in remote and island areas of Greece with less than 1,000 inhabitants (ΕΣΠΑ 2012b).

An "Energy Efficiency of Household Buildings" Programme (Εξοικονομώ κατ'οίκον) is aiming at improving the energy performance and efficiency of residential buildings through the provision of interest-free loans and subsidies for the installation of RES and

⁷ Ministry of Environment, Energy and Climate Change/ Centre for RES Decision 249/EFD KAPE EPPERAA

energy-saving measures. The programme foresees a budget of €396 million and is expected to last until 2017 (ΥΠΕΚΑ 2012b). The Programme is extremely successful as the estimated budget is not sufficient to finance all the applications submitted. New funding is expected to be identified after revising the budget of the existing Operational Programmes in 2013 and it will be distributed to the administrative regions, whose budget have already been exhausted (Καθημερινή, 2013).

Nevertheless, the implementation of the aforementioned mentioned measures and programmes have not prevented the emergence of the “energy poverty” phenomenon. According to a study carried by the Athens University of Economics and Business in 2012, 62.4% of the sample group was affected by “energy poverty” (Πανάς, 2012). The lack of a coherent policy framework aiming at preventing energy poverty can be clearly seen by the press release of Greenpeace (2013). It is estimated that during 2012-2014, the Greek Government will spend almost €1.20 in heating oil subsidies for each €1 spent on energy efficiency (Greenpeace, 2013).

Renewable Energy

In recent years, the share of renewable energy in Greece’s total energy consumption has been among the lowest in the EU. However, this share has been steadily increasing since 2005, growing from 7.2% that year to 11.6% in 2011. Despite this positive development, Greece still needs to accelerate its efforts in order to reach its 2020 goal of 18% renewables in total final gross energy consumption. The share of renewable electricity increased substantially from 8.9% in 2005 to 14.6% in 2011 (Eurostat 2013b). From 2010 to 2011 the total capacity of RES installations increased by 44% (to more than 2,500 MW).

Until recently, feed-in tariffs for renewable energy in Greece, as determined by Law L3851/2010 (amendment of the L3468/2006) were the most generous in the EU (MEEC 2010). Guaranteed tariffs especially supported the expansion of photovoltaics, which more than doubled from 624 MW in 2011 to 1,536 MW in 2012. This marks a steep increase from 2008 levels of 11 MW (HELAPCO 2013). The tariffs, however, were insufficiently financed over the long term and have caused a significant deficit of around €280 million in the renewable energy special account, the main funding instrument for the promotion of renewable energy ⁽⁸⁾. Obligations set under the economic adjustment programme have led the Greek government to cut the FiT for PV installations, as well as to impose a solidarity levy on all installations in order to erase the financing gap by 2014 and the Special Levy for the Reduction of GHGs (Ειδικό Τέλος Μείωσης Εκπομπών Αερίων Ρύπων – ΕΤΜΕΑΡ) ⁽⁹⁾ was increased to an average of €14.96 per MWh ⁽¹⁰⁾. The levy is adjusted every six months (July 2013, January 2014 and July 2014). The monthly report on RES of LAGIE (the Greek Electricity Market Operator), however, states that the deficit of the financial mechanism for the support of RES has been increased to €576 million, contrary to the estimated sum of €513 million (ΛΑΓΗΕ, 2013).

⁸ The special account is created by art. 143 of Law 4001/2011.

⁹ Formally RES levy

¹⁰ RAE- Regulatory Authority on Energy Decision 323/2013

In this context, in 2012, the Greek government committed to substantially reform the support scheme for RES by June 2013. The Ministry for Environment and Energy published a report in May 2012 that was composed by various RES stakeholders and outlines several options to reform the schemes, advocating the continuation of the FiT regime in Greece but coupled with the introduction of a systematic, programmed, gradual digression mechanism (ΥΠΕΚΑ 2012d). In addition, MEEC submitted its proposal to the European Commission in November (DG Energy and DG Competition) for the revision of the support of the existing PV installations in Greece. The proposal includes 3 scenarios and in all three a FiT cut, an extension of the agreement with the Greek Electricity Market Operator (LAGIE) by 5-7 years, and an extension of the bank loan contracts by 2 years (Greek banks have already accepted that proposal) are included. The percentage of the FiT cut varies though an average 45% reduction is projected (Energypress, 2013c).

To that end, the Law No. 3468/2006 that establishes a legislative framework for RES has been amended twice in 2013. The Ministry of Energy, Environment and Climate aimed to create a more stable investment environment for RES and in April 2013, certain provisions relating to grid connection and the deficit of the financing mechanism for RES were amended. All in all, the measures are not promoting the further development of RES and are mainly applied so as to ensure the sustainability of the existing RES financial mechanism (ΥΠΕΚΑ, 2013a).

The second amendment that was submitted on 19 September 2013 passed through the Parliament's commerce committee and was finally approved in October 2013. The amendment includes provisions on the licensing procedure for RES plants and hydropower stations above 15 MW, as new criteria for providing an extension of the installation license are put in place and especially for hydropower stations there are provisions concerning their installation in forest areas. Regarding wind power, the licensing process for the installation of wind power plants outside the urban planning zone is simplified and a special programme for small wind plants for self producers is foreseen. Other provisions include the possibility for the TSO to provide a connection offer in areas with congested grid, the construction of connection works on high productivity lands and the annulment of the annual adjustment of the FiT for all RES plants, excluding PV (ΥΠΕΚΑ, 2013b).

Energy Networks

The capacity of the electricity grid is one of the key challenges in relation to the expansion of renewable electricity production. The network might need €1 billion investment to handle the RES supply (UK Trade and Investment 2013). Greece's proposed Renewable Energy Roadmap 2050 foresees, among other things, substantial development of the electricity infrastructure and the expansion of smart grids.

As part of the economic adjustment programme, Greece is required to privatise Public Power Corporation (PPC S.A.) in 2013 (European Commission 2012). The Ministerial Council Act No.15 of 24 July 2013 puts in place the privatization of the PPC S.A. (the biggest power producer and electricity supply company in Greece). The Ministerial Council Act foresees that the privatization will be done in three stages (Greek TSO, "small PPC" including 30% of the existing productive capacity of the S.A. and a further 17%). The process will initiate in the last quarter of 2013 and is expected to end in 2016 (Εφημερίδα της Κυβερνήσεως, 2013). The privatization procedure is also complementary to another commitment of the economic adjustment programme, which foresaw the

unbundling of the electricity networks in Greece. To that direction, a new distribution system operator was created in March 2012; following a new transmission system operator that was created in February 2012 that has yet to be approved by the European Commission.

The tender for the interconnection of the Aegean Islands was reopened in April 2013 after being cancelled in 2012. The foreseen budget is €240 million which marks a significant decrease compared to the previous call, which allocated some €400 million. The project has also been divided into four sub-projects (Energypress, 2013a). In October 2013 the submission of offers was initiated and 9 proposals were submitted (Ελευθεροτυπία, 2013).

In August 2013 the connection of the island of Crete located at the south of Greece was announced. The project is expected to begin in 2014 and continue through 2020 as a Public Private Partnership and it will be guided by the National Strategic Reference Framework 2014-2020. The budget is estimated at €750-800 million and will connect Greece with Cyprus and Israel (Energypress, 2013b).

Transport

Emissions from transport have increased between 1990 and 2011 but decreased since 2010. Also, their proportion among Greece's total emissions increased through 2010, but decreased slightly in 2011 to 18%. Although this development indicates a positive trend, the proportion of these emissions is still significant and needs to be taken into consideration in the future (Table 1).

Average emissions for newly registered cars are very low in Greece with a level of 121.1 g CO₂/km. This level is the fourth lowest in the EU, but has decreased at a greater rate than the EU average between 2005 and 2012 (Eurostat 2013a). Greece's vehicle taxes are only partly based on CO₂ emissions. The registration tax is based on the car's value, engine capacity, Euro standard, and the CIF value. In addition, a luxury tax is applied for cars with a wholesale price of more than € 20,000 (ACEA 2012). As of 2013, the luxury tax also covers cars exceeding 1,929 cc engine capacity cars (Ernst & Young 2013).

For passenger cars, the ownership tax is based on CO₂ emissions if registered after 2010 or on engine capacity if registered prior to that date. Commercial vehicles are charged according to their weight, while buses and coaches are expensed in relation to their number of seats (ACEA 2012). A rather low road toll exists for certain parts of the road network (CE Delft 2012). Greece charges one of the EU's highest tax rates for petrol. However, diesel taxes for transport are less than a half of petrol taxes (European Commission 2013).

Greece's transport policy is currently concerned with the liberalization of the transport market rather than with reducing transport emissions. The economic adjustment programme primarily encourages the reduction of transport prices and the growth of the tourism sector, including maritime transport and aviation (European Commission 2012). No major measures have been taken in recent months to address CO₂ emissions from transport.

Agriculture

Under the Rural Development Programme 2007-2013 "Alexandros Baltatzis", and more specifically under the category "Agricultural- Environmental Support", the action "Crop

rotation with rain-fed crops in tobacco producing regions" was announced. The Rural Development Programme 2007-2013 constitutes one of the sectoral programmes of the National Strategic Reference Framework 2007-2013, co-funded by the EU. The action is addressed to former tobacco producers that have previously switched to irrigated farming so as to implement dry land farming to a part of their cultivation. Aim of the action is water consumption reduction in the agricultural regions, the restriction of chemical compounds use in the ground and CO₂-emission abatement. The successful applicants, who were announced on 22 November 2013 must cultivate rain-fed crops, such as wheat and oats, with crop rotation for the next five years. The action has a budget of € 3 Mio (Υπουργείο Γεωργίας, 2013).

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. These 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 to climate change and energy that were adopted in 2013 are listed, and their progress towards their implementation is assessed.

No CSRs related to climate change and energy were issued for Greece in 2013.

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