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

Country Report: Malta

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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: In Malta, nearly all energy is produced from imported oil products, thus making the country in particular vulnerable to oil price shocks. Energy policies mainly address the reduction of energy dependence including the promotion of renewable energies, grants for insulation in buildings and the construction of an electricity grid interconnection to Sicily. The interconnection will in particular increase grid stability, allow for electricity imports/exports thus reducing dependence on oil while at the same time reducing the greenhouse gas (GHG) intensity of the national electricity sector.

Non-ETS emission reduction target: The Maltese 2020 target is a limitation to emission growth of +5% (compared to 2005) but in actual fact emissions have already increased by 7% between 2005 and 2011. According to the latest national projections submitted to the Commission and taking existing measures into account, it is expected that the target will be met with a margin of 1 percentage point: 4% grow in 2020 compared to 2005.

Key indicators 2011:

GHG emissions	MT	EU
ESD EU 2020 GHG target (comp. 2005)	+5%	
ESD GHG emissions in 2011 (comp.2005)	+7%	-9%
Total GHG emissions 2012 (comp.2005)	+5%	-12%
GHG emissions/capita (tCO_2eq)	7.3	9.0

→ **19% lower** per capita emissions than EU average

GHG emissions per sector	MT	EU
Energy/power industry sector	64%	33%
Transport	19%	20%
Industry (incl. industrial processes)	7%	20%
Agriculture (incl. forestry & fishery)	3%	12%
Residential & Commercial	3%	12%
Waste & others	4%	3%

→ **Energy/power industry** sector followed by Transport

Energy	MT	EU
EU 2020 RES target	+10%	
Primary energy consumption/capita (toe)	2.7	3.4
Energy intensity (kgoe/1000 €)	202	144
Energy to trade balance (% of GDP)	-3.0%	-3.2%

→ **19% lower** per capita consumption, **40% higher** energy intensity, contribution of energy to trade balance below EU average

Taxes	MT	EU
Share of environmental taxes (% of GDP)	3.2%	2.4%
Implicit tax rate on energy (€/toe)	203	184

→ **Higher** share of environmental taxes and **10% lower** implicit tax rate on energy than EU average

Key policy development in 2013: The Malta Resources Authority has published amendments to the Feed-in Tariffs Regulations, which include a differentiation according to photovoltaic (PV) technologies and a tariff reduction. In addition, another support scheme for PV installations in households was introduced, granting up to 50% of investment costs. Regarding energy efficiency, a grant scheme to promote building envelope insulation was relaunched, which supports thermal insulation of roofs, double glazing and solar water heaters. In transport, a car scrappage scheme was relaunched. And while the registration tax on Euro 5 and 6 vehicles was reduced by up to 30%, the registration tax of Euro 4 vehicles was raised by 10% and the application of the registration tax was extended to used light vehicles which also benefit from a 10% reduction.

Key challenges: Energy dependence is one of the main challenges of the country and GHG emissions are high. The spending on fuel/lubricants imports increased from about EUR 300 million in 2005 to more than EUR 2,700 million in 2012. However, the use of domestic renewable energy sources is almost not existent: renewable energies contributed only 0.38% of total energy consumption in 2011. This is also far from the national renewable energy target of 10% by 2020. Although some progress has been made with the introduced support measures for solar energy, the construction of offshore wind parks seems to lack clear political support. Moreover, the rate of transportation and distribution (T&D) losses in power generation is more than twice as high as the EU average, which reduces efficiency of the electricity system.

The transport sector is the second most important source of GHG emissions. From 1990 to 2011, emissions from this sector doubled, mainly as a result of an increasing number of vehicles and longer distances travelled. Although average emissions of newly registered cars are very low in Malta, this has not helped stop the absolute growth in emissions.

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1 Background on climate and energy policies

In Malta, the main focus regarding energy policies is on reducing the energy dependence from imports. The generation of electricity is mainly based on imported oil. On this account, most of the GHG emissions are coming from the energy supply (60%). One important step was the construction of the Delimara plant extension (construction completed at the end of 2012), which led to an increase of efficiency in the generation of electricity. In the field of renewable energy, there are especially potentials in to build-up onshore and offshore wind as well as tidal and wave power plants. However, it is still a long journey for Malta to reach its 2020 target.

Another key goal of Malta's energy policy is to stabilize its energy supply. As a result, the Interconnector project is about to be implemented: A submarine cable connection to Sicily is going to be completed by the beginning of 2014, so that the Maltese electricity grid will be connected to the mainland of the EU. Finishing the construction will increase stability and Malta will be able to import electricity generated by renewable energy sources, thus reducing its dependence on oil while at the same time reducing the GHG intensity of the national electricity sector.

Besides emissions from electricity generation, which are covered by the European Emission Trading Scheme (EU ETS), the transport sector is the second largest emitter. In 2012, 249,000 private cars were registered (NSO 2013b), which refers to 59% of the population. In this regard, Malta was already able to reduce the average emissions per km driven by about 219% from 2005 to 2012, but progress was slower between 2011 and 2012. Newly registered cars were the fifth most efficient in the EU in 2012 (Eurostat 2013). As further actions are needed - Malta is far from reaching its non-ETS emission target - the government has published a strategy for the introduction of electric mobility (MRRA 2012b). However, the required electricity will need to come from renewable sources to reduce GHG emissions. Further emission can be saved in operating the modal shift from individual car transport to public transport as Malta has the highest per-capita car rate among the EU member states. In order to increase energy efficiency in the transport sector, a public transport reform was introduced in 2011.

In terms of creation of green jobs, the Pre Budget Document for 2013 generally states that the government will make efforts in 2013 to develop a plan for green jobs and provide training for young people to be qualified to work in environment-related sectors (Pre Budget 2013). In Malta, the share of employment in the renewable energy sector as a share of total employment in 2010 was below 0.5%. Additional data on the share of employment in water collection, sewerage, waste collection, and remediation activities in 2011 was not available (Green Jobs 2012). In May 2013, the Minister for Sustainable Development, the Environment & Climate Change announced that the ministry was to develop an action plan related to green jobs (Leo Brincat 2013).

2 GHG projections

Background information

In 2011, Malta emitted 3.0 Mt CO_2eq (UNFCCC inventory 2011) which is about 50% higher compared to total emissions in 1990. Almost two thirds of total emissions stem

from energy supply. Emissions in this sector increased by about 40% between 1990 and 2011, reflecting the rising demand. The second most important source of emissions is the transport sector, where emissions have doubled since 1990 due to the increased number of vehicles. Emissions from energy use, industrial processes, and agriculture only account for a minor share of total emissions and showed only limited fluctuations between 1990 and 2011 (UNFCCC inventory 2011, EEA 2012, UNFCCC 2012). From 2011 to 2012, GHG emissions are expected to further increase due to rising emissions from energy supply (EEA 2013c). At this point it must be noted that Malta's emissions from international aviation and maritime transport have increased dramatically in the last years from 0.5 Mt CO_2eq in 1990 to 4.6 Mt CO_2eq in 2010 (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. However, Malta has no emission reduction target under the Kyoto-Protocol.

By 2020, Malta can increase its emissions not covered by the EU ETS by 5% compared to 2005, according to the Effort Sharing Decision (ESD) ([1]). The latest data for 2012 suggests that Malta 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 by a margin of 1 percentage point (see Table 1).

[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: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:090:0106:0110:EN:PDF

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

						ESD target**		2020 Projections***	
	1990	2005	2010	2011	2012*	2013	2020	WEM	WAM
Total	2.0	3.0	3.0	3.0	3.1				
Non-ETS		1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
(% from 2005)					2%	6%	5%	4%	2%
Energy supply	1.4	2.0	1.9	1.9					
(% share of total)	68%	67%	63%	64%					
Energy use (w/o transport)	0.2	0.2	0.2	0.2					
(% share of total)	8%	5%	6%	6%					
Transport	0.3	0.6	0.6	0.6					
(% share of total)	17%	19%	20%	19%					
Industrial processes	0.0	0.1	0.1	0.1					
(% share of total)	0%	3%	4%	5%					
Agriculture	0.1	0.1	0.1	0.1					
(% share of total)	4%	3%	3%	2%					

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 1 Mt CO_2eq.*
**** 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 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.

[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.

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
Energy	Promotion of solar water heaters: Rebate on the purchase price of solar hot water heaters	Solar water heaters scheme was relaunched on 13 May 2013 and will be active until the end of 2014 (MRA 2013c).
	Incentives for the uptake of PV systems	Feed-in tariff for PV available. Furthermore, a new PV scheme was introduced in May 2013, which grants operators of PV installations 50 per cent of their installation costs (for further information please see chapter 4).
	Grant on purchase of micro wind turbines	The wind scheme 2006 is inactive. No other support scheme for purchasing wind turbines could be identified (MRA 2013e).
	Plant Loading and Fuel Switching	Implemented in 2008, active until 2015.
Energy Efficiency	Energy saving measures in government owned industry: Optimisation of reverse osmosis process, energy reduction in water transfer and distribution network, and improve energy efficiency at Malta shipyards	Implemented. In 2010, the share of reverse osmosis plants in total electricity consumption decreased to 4% (MRA 2013b).
	Support scheme for industry, SMEs and the commercial sector to promote investments in energy efficient equipment via the European Regional Development Fund (ERDF) Grant scheme	Malta Enterprise launched a support scheme in 2009 to reduce the impact of energy costs in several businesses. The incentive will be active until the end of 2013 (Malta Enterprise 2013b).
Transport	Introduction of autogas	The use of gas in motor vehicles was promoted by Legal Notice 393 in 2010. At the end of 2012, the first service station started dispensing gas and an increased use of gas can be observed (Malta Independant 2013). In addition, the Maltese Government in conjunction with Transport Malta launched a grant scheme for the promotion of autogas in October 2013 (for further information please see chapter 4).
	Introduction of a biofuel 'Substitiution Obligation'	Implemented. Diesel must be blended with biodiesel; the introduction of bio-ETBE (ethyl tertiary butyl ether) is planned (EEA 2013c).
	Uptake of electrical cars	Implemented in 2005 by GN 203, grant was last increased in 2008. In addition, a demonstration project has been implemented in 2013 (for further information please see chapter 4)
	Promotion of Transport Modal Shift Towards Transport: Public Transport Reform including upgrade buses, more routes, more frequent, and have more efficient services	Modal shift of 8% achieved by the third quarter of 2011. The bus network routes will increase from 17.5 million km per year to 45 million km per year in Malta and from 450,000 km per year to 1.2 million km per year on Gozo (MRA 2013d).

	Improving Energy Efficiency in the Transport Sector to include Scrappage Scheme and Licence categorization	Relaunch of a scrappage scheme with a budget of EUR 500,000 for up to 1000 cars to be scrapped until the end of 2013. According to the Governments budget 2014 document, a new scrappage scheme will be launched (for further information please see chapter 4).
Other non-ETS sectors	Aerial Emissions Works at Maghtab and Qortin: Gas extraction from closed waste dumps to treat odour and noxious gas emissions.	Landfill gas extraction infrastructure was installed in 2008 and is expected to be continued until 2028 (MRA 2013d).
	Sant'Antnin Mechanical Biological treatment Plant for the treatment of organic waste to obtain energy and divert waste from Landfill	Biological treatment plant was established in 2010 (MRA 2013d).
	UWWTP Sludge treatment: Anaerobic treatment of wastewater sludge and diversion from landfill	Implemented under the Government's infrastructure programme for the upgrading of the national waste water infrastructure (MRA 2013d).
	Control and limit F-gas emissions from sectors such as Refrigeration and Air-conditioning: Control through training and certification of technical personnel and reporting of usage, refilling and destruction.	Implemented through Legal Notice 93/2010 (MEPA, 2012b) ([4]). However, Malta had not notified the Commission of its training and certification requirements for companies and individuals working with activities related to F-Gases ([5]). At that time, the Government of Malta argued that the only bidder to an Expression of Interest (EOI 10/2010) ([6]) to set minimum qualification requirement courses was not qualified (Camilleri, 2012). Nonetheless, the EIO 10/2010 is the only call related to F-Gases listed at the Malta Environment and Planning Authority website (as of 16.09.2013).
	Nitrates Action Programme	Implemented in 2011 as a part of Rural Development Plan 2007-2013 (MRA 2013d).
	Afforestation Projects: Planting indigenous trees and increasing forestation and the surface area covered with permanent vegetation	The project including the planting of indigenous trees in order to limiting soil erosion was implemented in 2004. Until 2011, approximately 107,520 trees and shrubs were planted on the island of Malta (MRA 2013d).

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

[4] For more information see Legal Notice 93/2010. Environment Protection Act (Cap 435) - Certain Fluorinated Greenhouse Gases Regulations, 2010. Available at: http://www.mepa.org.mt/LpDocumentDetails?syskey=1209

[5] In April 2012, the Commission sent a reasoned opinion requesting the country to take action to ensure the compliance with Regulation (EC) 842/2006 on certain fluorinated greenhouse gases (EC, 2012).

[6] See EOI 10/2010. Call for Registration for the provision of the Minimum Qualification Requirements courses required under EC Regulation no. 1005/2009 on Substances that deplete the ozone layer and EC Regulation no. 842/2006 on Certain Fluorinated Greenhouse Gases. Malta Environment and Planning Authority. Available at: http://www.mepa.org.mt/info-expressions

Additional Measures (only important national measures)		Status of policy in November 2013
Energy	Installation of on-shore wind farms	Development of two small onshore wind farms (Wied Rini, Hal Far) planned for the period 2013-15.
	Installation of off-shore wind farms	The construction of Sikka l-Bajda wind farm is supposed to generate 3.5% of Malta's 10% target of final energy consumption from renewable energy sources. However, the construction has been postponed due to environmental concerns (main rafting site for protected bird species). MRRA has applied for ERDF funds for the construction of a "dummy" wind turbine for measuring potential impacts.
	Supply of natural gas to fuel existing and future generating plant at DPS in 2018	Conversion of fossil fuel fired plants to natural gas will be implemented once gas is available. Planned for 2018.
	Establishment of a new Mechanical Biological treatment Plant in the North of Malta	Still in its planning phase, should start being implemented in 2014. In April 2013, the MEPA Board approved planning permission for the construction of two waste treatment plants in the Maghtab and Ghallis area. One is a Mechanical Treatment Plant and the other is a Biological Treatment Plant (MRA 2013d).
	Establishment of Biological treatment Plant in Gozo	Still in its planning phase, should start being implemented in 2014.

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

As of As of September 2013, Malta has implemented most of the measures listed under the WEM scenario. However, the measure with the highest emission reduction potential has not yet been fully implemented: a contract for the training and certification for F-gas control was not awarded so far. It is thus not certain that Malta will achieve the level of emission reductions projected under the WEM scenario. Under the WAM scenarios none of the measures listed has been implemented so far. However, as progress regarding the additional measures can be identified, most of the existing measures in the non-ETS sectors are still implemented and the non-ETS emissions are expected to shrink from 2011 to 2012 in particular also from transport, Malta might achieve its 2020 target as outlined by the projections – if current progress is being maintained.

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.

The current NRP for Malta focuses mainly on policies for the promotion of renewable energy as well as on measures aiming to increase energy efficiency in the transport and building sector. However, no measures on adaptation are mentioned. In the following

tables, the main policies and measures as outlined in the NRP of April 2013 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 2013

New Scheme for PV Panel installations in Households	
Status as stated in the NRP	Implemented
Status as per Nov 2013	Scheme was launched in May 2013
Description of policy or measure	The scheme covers 50% of the installation costs of PV panels up to a maximum amount of €2,500 per application. The total investment volume is €21 million provided by EU funds (MRA 2013b)

Interconnection to the European Energy Grid	
Status as stated in the NRP	Issued
Status as per Nov 2013	Works are currently taking place. Interconnector is expected to be commissioned in March 2014 (Times of Malta 2013)
Description of policy or measure	The connection of the Maltese grid and Sicily via submarine interconnector

Energy Efficiency Measures for the Hospitality Sector	
Status as stated in the NRP	Launched on 5 May 2011
Status as per Nov 2013	Still implemented, no applications during 2012
Description of policy or measure	Investments in energy saving solutions and renewable energy are granted by loans: soft loan for hotels, guesthouses, hostels, farmhouses, snack bars, and restaurants to implement energy saving solutions and to invest in renewable sources (MRA 2013d)

Motor Vehicles Registration Tax	
Status as stated in the NRP	Implemented in 2012
Status as per Nov 2013	Implemented; further reduction of rates for Euro 5 and 6 emission levels in march 2013
Description of policy or measure	Introduction of new registration taxes based on the emission level of the vehicles. Thus, taxes on cars with Euro-3 or older standards have increased in order to create a cleaner vehicles fleet in Malta (for further information please see chapter 4)

Scrappage scheme	
Status as stated in the NRP	Application period terminated in 2012
Status as per Nov 2013	Scheme was relaunched in June 2013
Description of policy or measure	Through this scheme, benefit payment is granted to persons who sell their vehicle in order to buy a new car complying at least with Euro-5 standard (for further information please see chapter 4)

Promotion of uptake of RES and Building Envelope Insulation	
Status as stated in the NRP	Launched in the Budget for 2013
Status as per Nov 2013	All support schemes reopened in May 2013
Description of policy or measure	This measure aims to promote the uptake of roof insulation and double glazing and the use of solar water heaters by issuing grants (for further information please see chapter 4)

Extension of the Delimara Power Station (144 MW): Installation of an efficient power plant	
Status as stated in the NRP	To be available in summer 2012
Status as per Nov 2013	Put into operation at the end of 2012
Description of policy or measure	Delimara power station was extended by a new plant, which is working more efficiently (for further information please see chap. 1)

Modernisation of agriculture holdings and Nitrates Action Programme	
Status as stated in the NRP	Implemented
Status as per Nov 2013	Nitrate Action Programme published in June 2011.
Description of policy or measure	The NAP targets the contamination of surface and ground waters from nitrates (MRA 2013d)

Build-up of large wind farms and waste to energy projects	
Status as stated in the NRP	Under development
Status as per Nov 2013	Still under development
Description of policy or measure	The implementation of three offshore wind parks was approved by Maltese authorities. However, the construction of the wind parks has not started yet

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 Malta, the share of environmental tax revenues in total tax revenues was at 9.55% in 2011. When these revenues are compared with the GDP the share amounts to 3.2%. Both values are very high, putting the country in the third and fourth place, in a ranking with the other MS. Malta has no explicit carbon tax in place. However, the country has a high implicit tax rate on energy that amounted to €203 per tonne of oil equivalent (toe) in 2011. The energy intensity of Malta was average in European comparison in 2010. Despite the high implicit tax rate, the share of energy tax revenues in total tax revenues is relatively low (Eurostat, 2012).

The Motor Vehicles Registration Tax, introduced in January 2012, has the aim of generating a younger, smaller and less polluting fleet of vehicles (MFIN 2012). In this context, for buyers of new cars the tax rates on Euro 3 and older vehicles have been

increased for the purpose of discouraging the importation of such vehicles. On 1 March 2013, registration tax on Euro 5 and 6 vehicles was reduced by up to 30%, while the registration of Euro 4 vehicles was raised by 10% (Ministry of Finance, the Economy and Investment 2013). Furthermore, the registration tax was extended on used light vehicles (Euro 4, M1: no more than 8 seats in addition to the driver's seat), which also benefit from a 10% reduction (Transport Malta 2013a).

For 2014, the registration tax has been lowered for used M1 passenger vehicles carrying up to eight passengers. In order to qualify, passenger vehicles must be imported from Non-EU countries, they have to be manufactured 5-7 years ago and the CO_2 emissions value may not exceed 140g/km. The registration tax for qualifying vehicles has been reduced from between €1,000 to €2,500 to between €800 and €1,400 (MFIN 2013b).

Companies producing, processing, holding, receiving, or dispatching energy products are obliged to pay excise duty. However, according to the Excise Duty Act, the biomass content in biodiesel is exempt from the payment of excise duty.

Energy Efficiency

Malta is one of two MS where energy intensity has increased by 3% instead of having decreased between 2005 and 2011. Absolute energy consumption has increased by even 15% during the same period. Taken together, this is the worst performance of a MS in the whole EU regarding these two indicators. Fortunately, Malta's energy consumption declined between 2010 and 2011, but the trend remains behind the EU average. The poor performance can be attributed mainly to growth in energy consumption in the transport sector (peaked in 2008, before the crisis; see also section transport below) and industrial sectors (Eurostat, 2013a). In particular, no large energy efficiency gains can be reported from 2000 to 2010 in the industrial sector. The energy efficiency of Malta's household sector however increased between 2000 and 2010 by 10%. Since 2000, the sector is undergoing a shift from electric space heating to liquefied gas (LPG) heaters (Odyssee 2012).

For households, the roof thermal insulation and double glazing window scheme, which had already been in place from April to the end of 2012 was relaunched in May 2013. In this context, grants are paid by the government for the thermal insulation of roofs as well as for double glazing of windows. 15.3% of the total costs and a maximum amount of EUR 1.000 are granted for the purpose of reducing energy consumption. According to the Budget document for 2014, the scheme will be active until the end of 2014 (MFIN 2013b).

Besides the financial support of energy efficiency measures, Maltese households will be given the opportunity to receive support for the implementation of measures and appliance systems that would lead to reduced energy use. According to the budget document for 2014, an energy audit can be arranged on a voluntary basis (MFIN 2013b).

The budget also articulates several new pilot projects, that if successful, are planned to be implemented nationally. There is a an energy efficiency pilot project at the Siġġiewi Primary School which will be refitted with insulation, double glazing and smart lighting. The pilot project will be financed by both the Government and EU funds. Another pilot project is the replacement of street lights on the island of Gozo. The project represents the initial stage of a nationwide plan to replace all of the street lights in the country with energy efficient ones. The newly installed lights will be LEDs, which have an average lifetime of 20 years compared to 3 – 4 years of the current bulbs. The project is co-

financed by the EU and the Ministry for Energy and the Conservation of Water. Finally, a project conducting studies for the National Energy Efficiency Action Plan will be running throughout 2014 and will inform the transposition of the Energy Efficiency Directive in Malta. This project is also co-financed by the EU (MFIN 2013b).

For the hospitality sector, an incentive called "Energy Efficiency Measures for the Hospitality Sector" has been launched in May 2011. Through this measure, enterprises in the hospitality sector can benefit from soft loans financed by Malta Enterprise. The loads are capped at €400,000 or 80% of the total investment. This incentive will be available until the end of 2013 (Malta Enterprise 2013a). However, no further major policy actions can be identified in 2013 in order to improve energy efficiency in the industrial sector.

Renewable Energy

Malta rather lags behind regarding the development of renewable energy in comparison to the other MS. The share of renewable energy in total final consumption in 2011 was 0.4%. This represents a large percentage increase compared to 2005, when the proportion was zero, but major actions are required to reach the 2020 goal of 10%. Meanwhile, renewable electricity generation amounted to 0.1% in 2011 (Eurostat 2013b).

In order to address this issue, the generation of electricity from photovoltaic installations is promoted through a feed-in tariff already since 2010 which led to an increase of installed capacity totalling 13.17 GWh in 2012 (8.43 GWh in 2011, Ministry for Energy and the Conservation of Water 2013). In addition, in February 2013, the Malta Resources Authority has published amendments to the Feed-in Tariffs Regulations, which include a differentiation according to the PV technology and a reduction of the tariff from €ct 25-28/kWh to €ct 16-18/kWh (MRA 2013a).

In addition to the feed-in tariff, the development of the PV sector is promoted by the launch of a new support scheme launched in May 2013. According to the relevant government notice, 50% of the installation costs of photovoltaic panels are covered, up to a maximum amount of €2,500 per application. The total investment volume is €21 million provided by EU funds; hence approximately 8,400 applicants may participate. This scheme will be active until the end of 2013, unless the funds are exhausted first (MRA 2013b).

The renewable target is expected to be met however mainly through the build-up of off-shore wind capacities. There are three projects currently running with the Sikka l-Bajda wind farm being the largest one. The wind farm is expected to generate about 5.5% of the Maltese energy consumption in 2020. However, the construction of the wind farm is currently on hold due to environmental concerns the site was identified as a main rafting site for the protected Yelkouan Shearwater bird species (MRA 2013d). Addressing this problem, MRRA has applied for ERDF funds for the construction of a "dummy" wind turbine for measuring potential impacts.

The Ministry of Resources and Rural Affairs allocates once-only grants for solar water heating systems to private homeowners, funded only by national budgets. The amount of this grant is 40% of the total costs up to €400. The scheme will be active until the end of 2014 (MRA 2013c).

Energy Networks

Within the framework of the Interconnector project, the Maltese electricity grid will be connected to Sicily. The costs of the project are approximately €183 million and will be partially funded by the European Energy Programme for Recovery (Enemalta 2012b). The implementation of the project might lower the Malta's GHG emissions, since the line would enable Malta to import electricity instead of generating it through its own oil-based power stations as well as the line will increase security of supply through a diversification of energy imports. The interconnector is now expected to be commissioned in March 2014 after it was announced already for the end of this year (Times of Malta 2013).

The 2014 Budget document indicates that the Government of Malta would conduct a feasibility study relating to the European Gas Network in 2014. This Cost - Benefit Analysis will be the basis on which a decision will be taken as to whether the proposed connection of Malta to the European Gas Network through a pipeline to Sicily is feasible or not. This project has been classified as a PCI (Project of Common Interest) by the EU (MFIN 2013b).

Transport

Emissions from transport have increased between 1990 and 2011 but remained at the same level since 2005. The same holds true for the proportion of these emissions among Malta's total emissions. In 2011 their share reached 19%. The stagnating development indicates that these emissions are still important to address in the future (see Table 1).

The main problem seems to be the increasing number of private cars. The increasing number made up much of the efficiency increases: average emissions for newly registered cars are very low in Malta with a level of 121.5 gCO_2/km. The level is the 5th lowest in the EU and has decreased at a higher rate than the EU average between 2005 and 2012 (Eurostat 2013a). The main measures implemented in this regard are the registration tax that is applied to passenger cars based on the car's value, CO_2 emissions, and the length of the vehicle as well as the ownership tax that is based on CO_2 emissions as well as the age of the vehicle (ACEA 2012). No road use charges apply (CE Delft 2012).The tax rates for petrol and diesel are at or slightly below EU average, with a lower rate applying for diesel (difference of around €80/1000 litres) (European Commission 2013).

The major problem in the Maltese transport sector is the high number of personal vehicles. In 2012, the total number of licensed motor vehicles was 314,510, whilst 249,612 vehicles are owned by private persons, which amounts to 77% of the total number of licensed motor vehicles. In other words, each resident holding a license owns on average 1.4 cars or 0.7 cars for all residents above 18 years (National Statistics Office (NSO) 2013a, b).

According to a study about the impact of public transport reforms on accessibility conducted by the Institute for Climate Change and Sustainable Development, the estimated annual vehicle distance of private cars was 9840 km in 2010, which is an increase of 900 km compared to 2000. Furthermore, in 2010 private cars were used for approximately 71 % of all trips made by individuals (Mifsud, Attard 2013). Besides providing statistics on the car use, several economic indicators describing the significance of individual transport are contained in the above given study.

The spending on fuel and lubricants imports (numbers only for all sectors available) increased from about EUR 300 million in 2005 to about EUR 1.900 million in 2011 and more than EUR 2,700 million in 2012 ([7]) (NSO 2013c). In 2005 around half of these imports were consumed in the transport sector; in 2011 this share increased to about 60% ([8]). Thus, spending for imports for the transport sector were EUR 1,000 million higher in 2011 compared to 2005 and are likely to even higher in 2012. In this respect, also the value of imported transport fuels in all imported good increased from 5% in 2005 to 22% in 2011 ([9]).

The MODUS programme includes several measures aiming to shift the mode of transportation to reach a higher share of public transportation (Ministry for Transport and Infrastructure 2013a). In 2011, the government began to reform the public transport sector with the introduction of a new management and the modernisation of the bus fleet. One key point of the public transport reform is the upgrade of the national bus system. Hence, the network was improved by offering more routes as well as a more frequent service including night service. Furthermore, new bus terminals are going to be constructed to complement the centralized Valletta Bus Station. Furthermore, since July 2011, 508 buses were replaced by 264 “Euro V”-buses.

Besides the upgrade of the national bus system, it is also planned to introduce a new parking management, which regulates the parking opportunities in central urban areas as well as car access restrictions. The construction of a safer infrastructure should increase the accessibility of pedestrians and cyclists (MRA 2013d). The public transport reform is supposed to be terminated in 2015.

Malta also addresses its transport emissions by promoting electric mobility: the National Strategy for the introduction of electric mobility in Malta (MRRA) outlines the indicative target of reaching 5 000 electric vehicles by 2020. The strategy highlights the role of electric vehicles regarding the reduction of CO_2 emission and the achievement of the RES target in the transport sector: Annually, around 7.7 kt CO_2eq could be reduced and about 1% of the RES target could be delivered through the use of e-mobility if the best case scenario ([10]) is considered (MRRA 2012b: 15). The strategy also presents a list of recommendations with incentives and grants ([11]) (MRRA 2012b).

In order to demonstrate the use of electric vehicles, the DemoEV project has been launched in September 2011. The project’s objective is to evaluate if enough energy can be produced for the recharge of electric vehicles through PV panels installed on buildings. In September 2013, an 8 week lasting test stage has started with 24 battery-

[7] First estimates for 2013 show a slight decrease of the spending.

[8] Own calculations based on energy consumption given in Eurostat (2013a, tsdpc320), and under the assumption that about 100% of energy consumed in Malta is coming from imported fuels (Eurostat 2013a, tsdcc320: Gross inland energy consumption, by fuel) and EC (2013b).

[9] Own calculations based on NSO (2013c) giving the share of fuels/lubricants (all sectors) in overall imports.

[10] The strategy mentions four scenarios. The worse case scenario results in 5.000 electric vehicles in use contributing to 0.32% of total electricity demand in 2020. The strategy considers CO_2 savings in the four scenarios starting from worse to best scenario: 1) savings of 6.3kt CO_2eq; 2) savings of 6.9 kt CO_2eq; 3) savings of 7.2 kt CO_2eq; and 4) savings of 7.7 kt CO_2eq (MRRA, 2012: 157).

[11] A complete list of recommendations to the Government is provided on pages 127-131 of the Strategy (MRRA 2012).

operated cars used by government departments. The aim of this stage is to clarify driving patterns and usage habits of the test drivers in order to optimize the positions of the charging pillars, whose construction is supposed to be terminated in December 2013 (DemoEV 2013).

In this context, the Plug-In Vehicles scheme promotes the use of cars which derive their motive power exclusively from an electric motor. The purchase of such cars is granted by the Maltese government with payments of 25 per cent of the total costs up to € 4000. The scheme ended on December 31st 2012.

In order to replace inefficient vehicles, a Scrappage Scheme has been relaunched in June 2013. The scheme now also includes commercial vehicles. The benefit for scrapping an old vehicle and buy a new one was however reduced from €2.000 to €500 (Ministry for Transport and Infrastructure 2013b). The scheme will be active for 12 months unless the budget of EUR 500,000 is exhausted first. Despite the scrappage payment, car owners benefit from a lower registration fee when purchasing a new car. In 2014, a new Scrappage Scheme will be launched offering every person who scraps a 10-year old or an older M1 passenger vehicle and registers a new M1 passenger vehicle with a CO2 emissions value of less than 150g/km a one-time grant. The amount of subsidy will range between €500 and €900 depending on CO2 emissions level of the newly registered vehicle (MFIN 2013b).

A substitution obligation for fuel imports was implemented by the Maltese government in 2007. The regulation requires importers and wholesalers of petroleum to include an amount of biofuel content in any product that is sold in the Maltese fuel market. The obligation amounted to 1.5% in 2011 and will be raised gradually to 10% in 2020. In 2013, the obligation amounts to 3.5% (MRA 2010).

For the purpose of reducing the emissions caused by road traffic, the Maltese Government in conjunction with Transport Malta launched a grant scheme for the promotion of autogas in October 2013. Thus, Maltese car owners are granted an amount of € 200 for the conversion of an M1 motor vehicle used for private purposes to autogas. This scheme was active until the end of 2013 (Transport Malta 2013b).

Agriculture

Climate effects of and on agriculture are addressed in the National Strategy for Climate Change and Adaptation, published in May 2012. The strategy outlines different action plans and policies concerning agriculture. The recommended actions approved by the Maltese Government are, inter alia, to (MRRA 2012a):

- conduct a comprehensive study leading to the design of a National Agricultural Policy;
- secure synergy between mitigation and adaptation strategies as well as to vitalise agricultural activity;
- strengthen information and advisory support on climate-related matters to farmers;
- establish institutional links with the Institute Earth Systems of the University of Malta to spur appropriate research;
- establish strong institutional links with the Institute of Earth Systems of the University of Malta as well as other stakeholders to work closely together to design and introduce specific indicators for Maltese agriculture;

- continue to spur the modification of facilities used for the production of livestock to reduce heat stress on animals;
- work with the rural community to encourage them to adopt sound land management practices that are essential for soil conservation.

Adaptation

In May 2012, the Ministry for Resources and Rural Affairs (MRRA) published the National Strategy for Climate Change and Adaptation (MRA 2012a). The paper includes recommendations in various sectors that are vulnerable to climate change, water, agriculture, human health, and tourism. Furthermore, the principal strategic climate impacts are stated, which might affect Malta in the context of climate change. Malta is expected to suffer from rising temperatures and reduced water availability, as well from an increasing number of weather extremes.

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 2013 are listed, and their progress towards their implementation is assessed.

Existing Country Specific Recommendations	Progress
Continue efforts to diversify the energy mix and energy sources, in particular through increasing the take up of renewable energy	Further efforts to promote the increasing take up of renewable energy were made by the launch of a new PV support scheme in May 2013, which grants applicants up to 50% of the installation costs of photovoltaic panels. The installation of large off-shore wind farms, however, is not progressing. The largest project (with a capacity of 100 MW), called Sikka l-Bajda, cannot yet be constructed due to environmental concerns.
Continue efforts to diversify the energy mix and energy sources, in particular through the timely completion of the electricity link with Sicily	The project was postponed due to disagreement between the Maltese TSO (Enemalta) and the province and council of Ragusa (Sicily), but work on the interconnector between Malta and Sicily eventually started in August 2013. The interconnector is expected to get into operation in March 2014.
Maintain efforts to promote energy efficiency and reduce emissions from the transport sector.	The public transport reform was announced in 2011 and is expected to reduce the use of private cars, thus reducing energy consumption as well as GHG emissions from the transport sector. As part of the reform, buses were upgraded and the bus network is currently upgraded by the introduction of new routes and more frequent tours in order to increase in the use of public transport and to make it an adequate alternative to motorised individual mobility which is responsible for the majority of the transport sector emissions. Next to the improvement of public transport, the government is supporting the introduction of electric vehicles and set an indicative target. A demonstration project serves as a starting point for the build-up of a charging infrastructure.

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