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 May 2012 to January 2013.

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

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

Short summary

- ***Background:*** *In Malta green growth, climate change, and energy policy are only upcoming topics.*
- ***GHG target:*** *The 2011 non-ETS emissions were below of the 2013 emission allocation but according to the latest national projections Malta is expected to miss the 2020 target with existing and with additional measures.*
- ***Policy development:*** *The government of Malta mainly focuses on measures concerning the transport sector, but also on the connection of their electricity grid to Europe.*

1 Background on climate and energy policies

In Malta, climate and energy policy is an upcoming topic. Malta is highly dependent on energy imports and electricity generation is mainly based on the imported oil. On this account, most of the GHG emissions are coming from the energy supply (60%). Therefore, the main focus of Malta's energy policy is to reduce its dependence from energy imports. The construction of the Delimara plant extension (construction completed at the end of 2012) has increased the efficiency; 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 end of 2013, 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 this regard, Malta could already reduce the average emissions per km driven by about 8% from 2008 to 2009 and newly registered cars are the third most efficient in the EU. 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 source to reduce GHG emissions.

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).

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. Notable are Malta's emissions from international aviation and maritime transport that have increased dramatically in the last years from 0.5 Mt CO_2eq in 1990 to 4.6 Mt CO_2eq in 2010 (UNFCCC inventory 2011, EEA 2013a, 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 Malta has no emission reduction target. An evaluation of the latest complete set of greenhouse gas data (for the year 2011) shows that Malta's emissions have increased by 50% since 1990 (EEA 2013a).

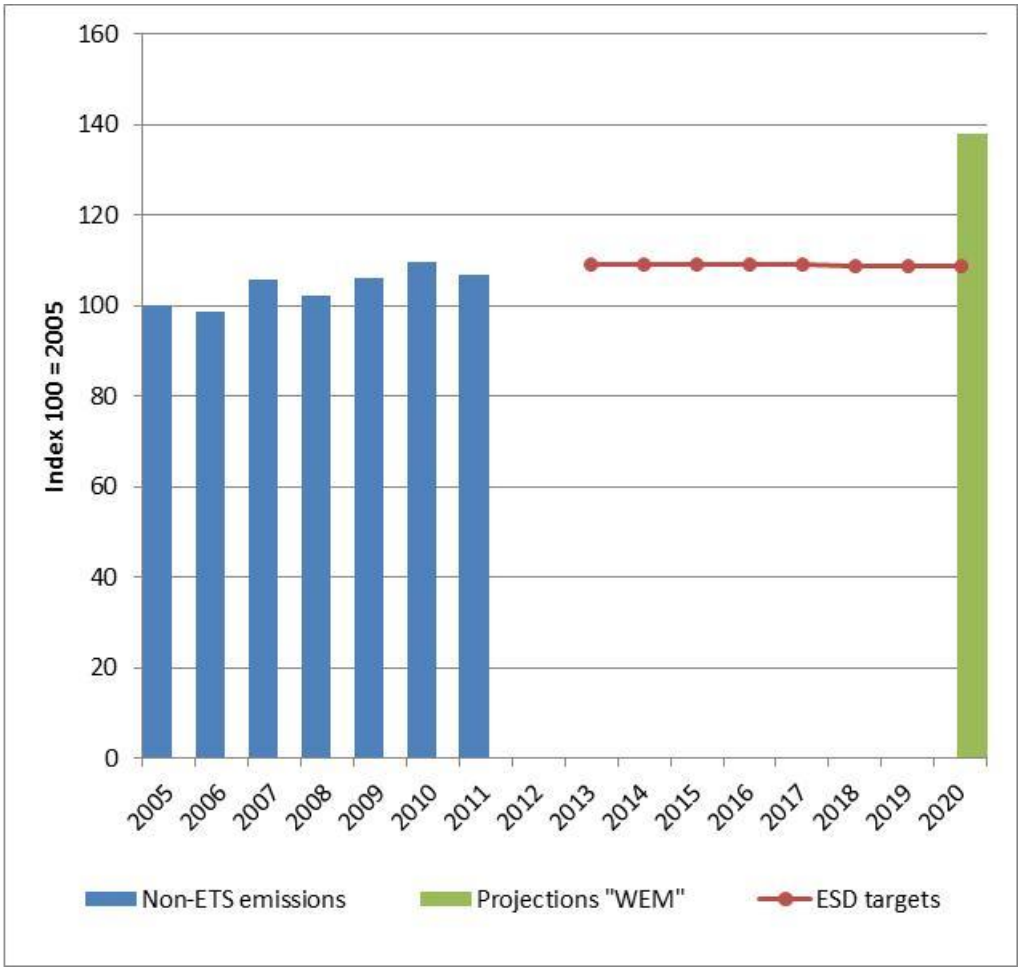
By 2020, Malta can increase its emissions not covered by the EU ETS by 5% compared to 2005, according to the Effort Sharing Decision (ESD) ([1]). The latest data suggests that Malta is on track at present. According to the 2011 inventory data, emissions in 2011 were 2% below the Annual Emissions Allocation for the year 2013 (COM 2013). However, national projections show that Malta is expected to fail to meet its target with existing as well as with additional measures ([2]) (EEA 2012d, 2013b).

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

[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] 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	2.0	3.0	3.0	3.0				
Non-ETS emissions		1.0	1.1	1.1	1.1	1.1	1.4	1.2
(% from 2005)				7%	9%	5%	33%	11%
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 (2012c, 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 the year 2005 for the scope of the ETS from 2013-2020 amounted to 1.1 Mt CO_2eq.
*** 2011 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 ([3]) every two years, and the latest submission was in 2013. However, Malta has not handed in new projections since 2011 so far. 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 Malta as basis for the projections as of April 2011 - have been summarised with a focus on national measures and those EU instruments expected to reduce emissions the most ([4]). An update on the status of the policies and measures is included in order to assess the validity of the scenarios. Below the tables a summary assessment can be found.

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	Installation of new and efficient generating capacity	The Delimara Power Station extension, completed at the end of 2012, has potential impacts on the Maltese GHG emissions. According to the Maltese energy utility (Enemalta), the construction of the new plant including a more efficient oil engine tends to result in a monthly reduction of CO_2 of round about 43,000 tons (Times of Malta 2012a).
	Installation of a second submarine electrical connection	The first interconnector is about to be implemented at the end of 2013
	Promotion of solar water heaters: Rebate on the purchase price of solar hot water heaters	No longer in place
	Government grant schemes for PV systems, micro wind turbines	Feed-in tariff for PV available

[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.

[4] 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.

	Energy savings and RES measures in state schools: Energy conservation and inclusion of renewable energy sources in the design and construction of new schools	Tomorrow's schools foundation started implementation in 2005, apart from double glazing (2002) and sun piping (2007). Renewable energy related measures include the use of solar water heaters as well as PV systems.
Energy Efficiency	Energy savings and RES measures in state schools: Energy conservation and inclusion of renewable energy sources in the design and construction	Tomorrow's schools foundation started implementation in 2005, apart from double glazing (2002) and sun piping (2007). Measures promoting energy efficiency are double glazing windows and roof insulation as well as water conservation systems.
	Energy savings and RES measures in social housing: Energy conservation and inclusion of renewable energy sources in the design and construction	The Housing Authority launched the first energy saving projects in 2004. The current 5-year-programme started in 2009 and includes measures in the field of resource efficiency (e.g. efficient cooling/heating systems, photovoltaic installations, solar water heaters)
	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 per cent.
	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.
	Introduction of smart meters	In 2008, Enemalta introduced an automated meter reading system in order to provide information for the management of low voltage networks. In 2009, a pilot project was launched. However, the project is expected to be implemented by 2013.
Transport	Introduction of autogas	The use of autogas in motor vehicles was promoted by Legal Notice 393 in 2010.
	Promotion of the use of biodiesel through an exemption of excise duty (Excise Duty Act)	Substitution obligation on all importers/wholesalers came into force in February 2011.
	Promote electrical vehicles as alternate means of transportation through a reduction in registration tax for electrical vehicles and grants available on purchase price	Implemented in 2005 by GN 203, grant was last increased in 2008,
	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 per cent achieved by the third quarter of 2011.
Other non-ETS sectors	Modernisation of agriculture holdings	Rural Development Programme (RDP) active until the end of 2013.
	Nitrates Action Programme	Implemented

	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.
	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.
	UWWTP Sludge treatment: Anaerobic treatment of wastewater sludge and diversion from landfill	Implemented
	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 2005.

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	Installation of On shore wind farms	Development of two small onshore wind farms (Wied Rini, Hal Far) planned for the period 2013-15.
Transport	Promotion of the use of bio-ETBE	Bio-ETBE is supposed to be introduced in 2013. However, the project has not been implemented yet.
Other non-ETS sectors	Gas management at Ghallis and 'ta Zwejra' non-Hazardous landfills	Implementation was supposed to be finished in 2011. However, no reliable information on the progress of implementation was available at this point of time.
	Establishment of a new Mechanical Biological treatment Plant in the North of Malta	Still in its planning phase, should start being implemented in 2015
	Establishment of Biological treatment Plant in Gozo	Planned to be implemented in 2015
	Establishment of a Waste to Energy Facility for the treatment of refuse derived fuel and other waste streams which cannot undergo other treatment	No additional information available on the current status of this policy measure

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

According to the current state of implementation, most of the WEM policies are actually implemented. However, a detailed quantitative evaluation is not available at this point. There are some measures that have been discontinued. Some progress has been made to advance additional policies. However, the installation of on shore wind farms is not making tangible progress.

In total, the assessment of the WEM/WAM scenarios indicates that not all emission limitation or reduction effects may be realized. As the national projection came to the conclusion that not even with a full implementation of WEM and WAM scenario policies the target is met, we have to assume that from this perspective the target achievement is in danger.

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 ([5]).

In the following table, the main policies and measures as outlined in the NRP of April 2012 ([6]) 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

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 Jan 2013	put into operation at the end of 2012
Description of policy or measure	Delimara power station will be extended by a new plant, which is working more efficiently

Interconnection to the European Energy Grid	
Status as stated in the NRP	project is currently on track and the target is to commission the interconnector by October 2013 as per contract
Status as per Jan 2013	still on track
Description of policy or measure	The connection of the Maltese grid and Sicily via submarine interconnector

Promotion of the use of Biodiesel through substitution obligation	
Status as stated in the NRP	implemented
Status as per Jan 2013	implemented
Description of policy or measure	The regulation requires importers and wholesalers of petroleum to include an amount of biofuel content in any product that is wholesaled in the Maltese fuel market.

[5] 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).

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

Transport Reform: Substitution of old busses (including 10 hybrid diesel-electric busses and all other must be EURO V by July 2012) and effective modal shift	
Status as stated in the NRP	new bus fleet to be implemented in 2012; modal shift under development
Status as per Jan 2013	Substitution of vehicles has taken place, modal shift is promoted through MODUS project.
Description of policy or measure	The transport reform includes the substitution of old busses with busses that comply with the Euro V standard. Further, more passengers by vehicle may be carried.

Modernisation of agriculture holdings and Nitrates Action Programme	
Status as stated in the NRP	
Status as per Jan 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.

Gas Management at Non-hazardous Landfills	
Status as stated in the NRP	already under implementation
Status as per Jan 2013	still under implementation
Description of policy or measure	It is a long-term project to recover resources and to generate energy from landfills.

Build-up of large wind farms and waste to energy projects	
Status as stated in the NRP	under development
Status as per Jan 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.

Issuance of permitting guidelines and fast track procedures for small-scale renewables (up to 20kW)	
Status as stated in the NRP	already implemented
Status as per Jan 2013	implemented
Description of policy or measure	Permitting guidelines for solar applications installed within the cartilage of a building and for wind turbines up to 20kW

Financial incentives through grant schemes launched by Government for renewable energies	
Status as stated in the NRP	from time to time
Status as per Jan 2013	closed
Description of policy or measure	The ERDF Energy Grant Scheme supports enterprises invest in energy saving measures and alternative energy sources.

Reform of Motor Vehicles Registration Tax: increasing the tax rates on Euro 3 and older vehicles	
Status as stated in the NRP	to be implemented in 2012
Status as per Jan 2013	implemented in January 2012, updated in January 2013
Description of policy or measure	Registration tax for old cars (Euro 3 and older) is increased in order to discouraging the importation of such vehicles as a result making newer and cleaner cars more attractive.

Scrappage Scheme	
Status as stated in the NRP	implemented (up to 3,000 persons in 2012)
Status as per Jan 2013	implemented, updated in January 2013 (up to 5,000 persons until October 2012)
Description of policy or measure	Benefit payment is granted to persons who sell their old vehicle and buy a new one. First time vehicle buyer or an owner of a vehicle which is 10 years or older. For a new car to be eligible, it must be Euro 5 with CO_2 emissions of 150g/km or less and its length must not exceed 4460mm

Energy Efficiency Measures for the Hospitality Sector	
Status as stated in the NRP	launched: May 2011 until December 2013
Status as per Jan 2013	closed
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.

Promotion of uptake of RES and building envelope insulation	
Status as stated in the NRP	to be implemented in 2012
Status as per Jan 2013	on hold (implemented from April to December 2012)
Description of policy or measure	The scheme promotes the uptake of solar water heaters and roof insulation and double glazing by issuing financial grants to households.

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 implicit rate of taxation on energy consumption in Malta varied quite a bit between 2005 and 2009. At 171.4 €/tonne oil equivalent, it was ninth-highest in the EU in 2009, representing an approximate 30% increase compared to 2005. However, the tax peaked at over 200 €/tonne in 2007 before declining once again (Eurostat 2013). The energy

intensity of Malta is average in European comparison, but revenues from energy taxation as a percentage of GDP in 2010 were below average at 1.5% of GDP (fifth-lowest among EU MS). When transportation taxes are considered, though, overall environmental taxation brought in revenues equal to 3.1% of GDP, which ranked fourth among EU MS in 2010 (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. According to the Ministry of Finance, the Economy and Investment, registration tax on Euro 5 vehicles is to be reduced by up to 30 percent, while the registration of Euro 4 vehicles will rise by 10 percent (Times of Malta 2012b).

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

Although Malta's energy intensity was slightly above the EU average in 2010, it decreased quickly between 2005 and 2010 by 16%, more than double the EU average. Final energy consumption, however, was 13.5% higher in 2010 than the 2001-2005 average. This can be attributed mainly to growth in energy consumption in the transport (peaked in 2008, before the crisis) and industrial sectors (Eurostat 2013).

The roof thermal insulation and double glazing window scheme was active from April to the end of 2012. In this context, grants were paid by the government for the thermal insulation of the roof as well as for double glazing of windows. 15.25 percent of the total costs and a maximum amount of €1.000 were granted for the purpose of reducing energy consumption. However, the scheme ended on December, 31st 2012, but is considered to be renewed in 2013 (MRA 2012b).

Renewable Energy

Renewable energy consumption is one area where Malta lags behind other EU MS. The proportion of renewable energy in total final consumption in 2010 was 0.4%. This represents a large relative improvement compared to 2005 (0.1%), but major changes will have to take place for Malta to reach its 2020 goal of 10%. Meanwhile, final electricity consumption in Malta contained no renewable generation in 2010 (nor in any preceding years) (Eurostat 2013).

In Malta, the generation of electricity from photovoltaic installations is promoted through a feed-in tariff. Active since 2010, the FiT is relevant for operators of PV installations for a period of 8 years.

There are three projects currently running concerning the construction of offshore wind parks. However, the Sikka l-Bajda wind farm, which is supposed to generate round about 5.5% of the Maltese energy consumption in 2020, is not yet online and construction has not even begun (Malta Star 2012a). In October 2012, the Labour Party officially questioned the Sikka l-Bajda project (Malta Star 2012), e.g. due to the missing statements from the Maltese government concerning the current status of the project planning.

The Ministry of Resources and Rural Affairs allocates once-only grants for solar water heating systems to private homeowners. This support scheme is partly funded by the ERDF-scheme (European Regional Development Fund). The amount of grant for solar water heaters is 40% of eligible costs up to a maximum of € 560 (MRA 2011).

Additionally, the Ministry of Resources and Rural Affairs allocates once-only grants for solar water heating systems to private homeowners, founded only by national budgets. The amount of this grant is 40 percent of the total costs up to €400. However, both the ERDF-financed and national scheme ended on December, 31st 2012, but there are considerations to renew them in 2013 (MRA 2011)

According to the chairman of Enemalta, the generation of electricity using renewable energy sources is difficult (Malta Today 2012). The background of this statement is the small size of the country combined with the high population density, which leads to a lack of huge land masses necessary for the exploitation of renewable energy sources (Enemalta 2012a). In this context, the government of Malta considers the installation of photovoltaic panels on government owned buildings. Another solution for this problem might be the construction of offshore wind parks, which have been planned but not yet implemented.

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 in the future it will be possible to import electricity instead of generating it in the country. Furthermore, the Interconnector shall increase security of supply as well as enable new and different types of power sources, including renewable energies (Malta Today 2012). According to Enemalta, the connection will be established at the end of 2013.

Transport

Greenhouse gas emissions originating from the transport sector in Malta remained almost stable between 2005 and 2011, and made up 19% of overall emissions in 2011 (see Table 1). Taxation of transport is extensive in Malta, with revenues from transport taxation (excluding fuels charges) equivalent to 1.4% of GDP in 2010, the second-highest value in the EU (Eurostat 2012). Newly registered cars emitted on average 124.5 gCO_2/km driven in 2011, which made them the second most efficient in the EU that year. Large strides were made in this respect between 2008 and 2009, with the average emissions per km driven dropping almost 8% and between 2010 and 2011 with a drop of about 5% (EEA 2012e).

A major problem in the Maltese transport sector is the high number of personal vehicles, as 76.9% of the total number of licensed motor vehicles are private (MRRA 2012c). According to the National Energy Policy of the Maltese Islands several measures aiming to shift the mode of transportation to reach a higher share of public transportation. 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. The public transport reform is supposed to be terminated in 2015.

Malta also addresses its transport emissions e.g. 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 which has been set by the Maltese government. The Strategy includes an evaluation of the available information on electric vehicles and presents recommendations for their uptake. The strategy does not mention specific numbers of jobs that could be created with the incentives on e-mobility; however, it stresses the fact that the technological innovation required to implement e-mobility on the island should be seen as a challenge but also as an opportunity to create green jobs and expand the industry (MRRA 2012b: 18- 21). In addition, 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 ([7]) is considered (MRRA 2012b: 15). With regards to the costs involved, the strategy points out that the average cost of the use of an electric vehicle is lower than the average cost of the use of a conventional vehicle (MRRA 2012b: 17) (despite the fact that the purchase cost of electric vehicles might be higher than of conventional vehicles). The strategy also presents a list of recommendations with incentives and grants ([8]) (MRRA 2012b: 20).

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, however, it is under consideration for renewal in 2013 (MRA 2012c).

Furthermore, a Scrappage Scheme is being reconditioned by the end of 2012. The benefit for persons who scrap their old vehicle and buy a new one, which was at €2.000, is being reduced to €500. Furthermore, the scheme is extended to commercial vehicles, which are scrapped for €500 as well (Times of Malta 2012b). Despite the decrease of the scrappage payment, car owners benefit from the lower registration fee when purchasing a new car.

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 percent in 2011 and will be raised gradually to 10 percent in 2020. In 2013, the obligation amounts to 3.5 percent (MRA, 2010).

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

[7] 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).

[8] A complete list of recommendations to the Government was provided in pages 127-131 of the Strategy and included, for example: "Tax incentives are to be introduced in the commercial sector for companies that replace a number of their vehicle fleet with electric vehicles. 125% of the cost price for the purchase of electric vehicles may be claimed as costs in the profit and loss balance, and thus will be deducted from taxable income" (MRRA 2012:127).

plans and policies concerning agriculture. The recommended actions approved by the Maltese Government are, inter alia, to (MRRA 2012a):

- proceed a comprehensive study leading to the design of a National Agricultural Policy (June 2013);
- 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.

F-Gases

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) as Malta had not notified the Commission of its training and certification requirements for companies and individuals working with activities related to F-Gases. At that time, the Government of Malta argued that the only bidder to an Expression of Interest (EOI 10/2010) ([9]) to set minimum qualification requirement courses was not qualified but evaluated as "non-compliant with the relevant requirements". Thus, it has not been possible to establish minimum qualification courses in the country (Camilleri, 2012). Nonetheless, it is worth highlighting that the aforementioned EIO 10/2010 is the only call related to F-Gases listed at the Malta Environment and Planning Authority website (as of 8.4.2013) MEPA, 2012a). With regards to national regulation, Legal Notice 93/2010 (MEPA, 2012b) regulates the import, export, use and disposal of equipments that use Fluorinated Gases and contains provisions for the application of EC Regulation 842/2006 and its implementing acts ([10]).

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

[9] 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

[10] 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

about 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 2012 are listed, and their progress towards their implementation is assessed.

Existing Country Specific Recommendations	Progress
Step up efforts to promote energy efficiency (to reduce Malta's dependence on imported oil)	The support scheme for thermal insulation and double glazing windows was the only scheme being active for private households in 2012. However, different incentives for the increase of energy efficiency are implemented in the transport sector, such as the motor vehicle registration tax and the scrappage scheme. Measures promoting energy efficiency in the hospitality sector are active as well. Thus, soft loans are granted for energy saving solutions in the hospitality sector.
Increase the share of energy produced from renewable sources by carefully monitoring the existing incentivising mechanisms and by prioritising the further development of infrastructure, including by completing the electricity link with Sicily (to reduce Malta's dependence on imported oil)	The Interconnector project will be implemented by the end of 2013 and is supposed to have substantial effects on the energy supply of Malta. Furthermore, the share of RES might increase by the operation of offshore wind parks. The biggest one (with a capacity of 100 MW), called Sikka l-Bajda, is already assessed but the construction has not yet started.

6 References

Camilleri, Ivan (2012): Malta feeling heat on greenhouse gas: Island is finding it difficult to reach EU standards on climate. Times of Malta. 2 May 2012. Available at: http://www.timesofmalta.com/articles/view/20120502/local/Malta-feeling-heat-on-greenhouse-gas.417924

COM (2013): Commission decision of 26 March 2013on 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

EC (2012). Climate Change: Commission asks Italy and Malta to comply with EU legislation on fluorinated gases. European Commission - Press Release. 26 April 2012. Available at: http://europa.eu/rapid/press-release_IP-12-415_en.htm#footnote-1

EEA (2012a): "Approximated EU GHG inventory: Early estimates for 2011" Technical report No 13/2012, available online at http://www.eea.europa.eu/pressroom/publications/approximated-eu-ghg-inventory-2011/

EEA (2012b): Gap between average non-ETS 2008–2011 emissions and Kyoto targets without the use of carbon sinks and flexible mechanisms. Online available: http://www.eea.europa.eu/data-and-maps/figures/gap-between-average-nonets-200820132011

EEA (2012c): Greenhouse gas emission trends and projections in Europe 2012 - Tracking progress towards Kyoto and 2020 targets. EEA Report No 6/2012. Online available: http://www.eea.europa.eu/publications/ghg-trends-and-projections-2012

EEA (2012d): Projected gaps between 2020 GHG emissions and national targets in sectors not covered by the EU ETS. Online available: http://www.eea.europa.eu/data-and-maps/figures/projected-gaps-between-2020-ghg-1

EEA (2012e): Monitoring CO_2 emissions from new passenger cars in the EU: summary of data for 2011. Online available: www.eea.europa.eu/publications/monitoring-co2-emissions-from-new/at_download/file

EEA (2013a): EEA greenhouse gas - data viewer: Change in emissions by country (%), Kyoto base year - 2011. Online available at: http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer

EEA (2013b): Summary of new Member State projections under the Reporting of Member States in accordance with Decision No 280/2004/EC about their GHG emission projections up to 2020, April 2013.

Enemalta (2012a): Clarification by Enemalta's Executive Chairman. Online available at: http://www.enemalta.com.mt/newsDetails.aspx?id=17986

Enemalta (2012b): Interconnector. Online available at: http://www.enemalta.com.mt/index.aspx?cat=20&art=177

Eurostat (2012): Source of data is Eurostat "Taxation trends in the European Union 2012". Collection: Statistical books. 2012. Brussels.

Eurostat (2013): Source of data is Eurostat using the following tables: Implicit tax rate on energy (tsdcc360). Energy intensity of the economy (tsdec360). Final energy consumption (ten00095). Share of renewable energy in gross final energy consumption (t2020_31). Electricity generated from renewable sources (tsdcc330). Average carbon dioxide emissions per km from new passenger cars (tsdtr450). Final energy consumption. by sector (tsdpc320). Greenhouse gas emissions by sector (tsdcc210)

Green Jobs (2012): Green Jobs: Employment Potential and Challenges. Available at: http://ec.europa.eu/europe2020/pdf/themes/green_jobs.pdf

Malta Economic Update 2011: Toward Smart Green Growth. Online available at: http://www.maltaeconomicupdate.com/index.php?option=com_k2&view=item&id=305:toward-smart-green-growth&Itemid=71

MEPA (2012a): Express of Interest - EOI 10/2010. Environment and Planning Authority (MEPA). Available at: http://www.mepa.org.mt/info-expressions

MEPA (2012b): Legal Notice 93/2010. Environment Protection Act (Cap 435) Certain Fluorinated Greenhouse Gases Regulations, 2010. Malta Environment and Planning Authority (MEPA). Available at: http://www.mepa.org.mt/LpDocumentDetails?syskey=1209

Malta Star (2012a): Global Wind Day – Wind Energy in Malta is still not used. Online available at: http://www.maltastar.com/dart/20120615-global-wind-day-wind-energy-in-malta-is-still-not-used

Malta Star (2012b): What happened to the Sikka l-Bajda wind farm? Online available at: http://www.maltastar.com/dart/20121008-what-happened-to-the-sikka-bajda-wind-farm

Malta Today (2012): Enemalta chairman says generating renewable energy 'almost impossible'. Online available at: http://www.maltatoday.com.mt/en/newsdetails/news/national/Enemalta-chairman-says-generating-renewable-energy-almost-impossible-20120518

MFIN (2012): Ministry of Finance, the Economy and Investment 2012. Malta's National Reform Programme under the Europe 2020 Strategy. Online available at: http://www.timesofmalta.com/articles/view/20121128/budget-2013/changes-in-vehicle-registration-tax.447289

MRA (2011): Malta Resources Authority 2011. Solar water heater scheme. Available at: http://mra.org.mt/support-schemes/2011-swh-scheme/

MRA (2012a): Malta Resources Authority 2012. Adaptation to Climate Change. Online available at: http://mra.org.mt/climate-change/adaptation-to-climate-change/

MRA (2012b): Malta Resources Authority 2012. Grant on the Purchase of Systems for Domestic Use that Reduce the Consumption of Energy. Online available at: http://mra.org.mt/wp-content/uploads/2012/09/gn-409-of-2012.pdf

MRA (2012c): Malta Resources Authority 2012. Plug-In Vehicles scheme. Online available at: http://mra.org.mt/support-schemes/2012-plug-in-vehicles-scheme/

MRA (2010): Malta Resources Authority 2010. Draft 'Biofuels in Transport'. Online available at: http://mra.org.mt/wp-content/uploads/2012/08/7.Bio-Fuel-in-Transport.pdf

MRRA (Ministry for Resources and Rural Affairs) (2012a): National Strategy for Climate Change and Adaptation. Online available at: http://www.mrra.gov.mt/page.aspx?id=124

MRRA (2012b). National Strategy for the Introduction of Electromobility in Malta and Gozo. July 2012. Available at: http://www.mrra.gov.mt/page.aspx?id=227

MRRA (2012c): The National Energy Policy for the Maltese Islands. Online available at: http://www.mrra.gov.mt/loadfile.ashx?id=6045ffe5-a430-46a2-a31f-e2eec25a1fc6

OECD (2012): The Jobs Potential of a Shift Towards a Low-carbon Economy. Final Report for the European Commission - DG Employment. 4th June 2012. Available at: http://www.oecd.org/els/employmentpoliciesanddata/50503551.pdfPre Budget Document for 2013. Government of Malta. Available at: http://finance.gov.mt/image.aspx?site=MFIN&ref=Pre-Budget%20Document%202013

Pre Budget Document for 2013. Government of Malta. Available at: http://finance.gov.mt/image.aspx?site=MFIN&ref=Pre-Budget%20Document%202013

Reporting of Member States in accordance with Decision No 280/2004/EC of the European Parliament and of the Council concerning a mechanism for monitoring Community GHG emissions and for implementing the Kyoto Protocol. Last submission: April 2011.

UNFCCC inventory (1990-2011): National greenhouse gas inventories (IPCC Common Reporting Format sector classification). Online available for the EU: http://www.eea.europa.eu/data-and-maps/data/data-viewers/greenhouse-gases-viewer (Last modified : May 29, 2013 09:30 AM)

UNFCCC (2012) Reports on in-depth reviews of the fifth national communications of Annex I Parties. Online available: http://unfccc.int/national_reports/annex_i_natcom/idr_reports/items/4056.php

Times of Malta (2012a): Delimara power station extention: €1 million saved in fuel costs. Online available at: http://www.timesofmalta.com/articles/view/20121221/local/delimara-power-station-extension-1-million-saved-in-fuel-costs.450452

Times of Malta (2012b): Changes in vehicle registration tax, car scrappage scheme. Online available at: http://www.timesofmalta.com/articles/view/20121128/budget-2013/changes-in-vehicle-registration-tax.447289