

## **Malta's Report under Directive 2009/28/EC**

*Article 22 of Directive 2009/28/EC requires Member States to submit a report to the Commission on progress in the promotion and use of energy from renewable sources by 31 December 2011, and every two years thereafter. The sixth report, to be submitted by 31 December 2021, shall be the last report required.*

*Member State reports will be important for monitoring overall renewable energy policy developments and Member State compliance with the measures set out in the Directive 2009/28/EC and the National Renewable Energy Action Plans of each Member State. The data included in these reports will also serve to measure the impacts referred to in Article 23 of Directive 2009/28/EC. Consistency in Member State data and reporting would be useful.*

*The purpose of the template is to help ensure that Member State reports are complete, cover all the requirements laid down in the Article 22 of Directive and are comparable with each other, over time and with National Renewable Energy Action Plans submitted by Member States in 2010. Much of the template draws on the template for the National Renewable Energy Action Plans<sup>1</sup>.*

*When filling in the template, Member States should comply with the definitions, calculation rules and terminology laid down in Directive 2009/28/EC and those of Regulation (EC) No. 1099/2008 of the European Parliament and the Council<sup>2</sup>.*

*Additional information can be provided either in the prescribed structure of the report or by including annexes.*

*Passages in italics aim to guide Member States in the preparation of their reports. Member States may delete these passages in the version of the report which they submit to the Commission.*

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<sup>1</sup> C(2009)5174

<sup>2</sup> OJ L 304, 14.11.2008, p. 1.

**1. Sectoral and overall shares and actual consumption of energy from renewable sources in the preceding 2 years (n-1; n-2 e.g. 2010 and 2009) (Article 22 (1) a of Directive 2009/28/EC)).**

Please fill in the actual shares and actual consumption of renewable energy for the preceding 2 years in the suggested tables.

**Table 1: The sectoral (electricity, heating and cooling, and transport) and overall shares of energy from renewable sources<sup>3</sup>**

%	2011	2012
RES-H&C	5.76%	12.47%
RES-E	0.64%	0.99%
RES-T	1.07%	3.84%
Overall RES share	1.33%	2.70%
Of which required from cooperation mechanism	0.00%	0.00%
Surplus for cooperation mechanism	0.00%	0.00%

**Table 1a: Calculation table for the renewable energy contribution of each sector to final energy consumption (ktoe)<sup>4</sup>**

ktoe	2011	2012
(A) Expected gross final consumption of RES for heating and cooling	3.73	7.37
(B) Expected gross final consumption of electricity from RES	1.19	1.94
(C) Expected final consumption of energy from RES in transport	1.32	3.03
(D) Expected total RES Consumption	6.25	12.35
(E) Expected transfer of RES to other MS	0	0
(F) Expected transfer of RES from other MS & 3rd countries	0	0
(G) Expected RES consumption adjusted for target (D) - (E) + (F)	6.25	12.35

The total renewable energy gross consumption shares in 2011 and 2012 were 1.33% and 2.7% respectively; resulting in an average RES gross consumption for 2011 and 2012 of 2.01%. This means that interim targets for 2011-2012 in accordance to the RES Directive 2009/28/EU (Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC) and the NREAP trajectory for 2012 have been achieved.

<sup>3</sup> Facilitates comparison with Table 3 and Table 4a of the NREAPs.

<sup>4</sup> Facilitates comparison with Table 4a of the NREAPs

**Table 1.b: Total actual contribution (installed capacity, gross electricity generation) from each renewable energy technology in Malta to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity<sup>5</sup> (Source Malta Resources Authority and Wasteserv Ltd.)**

Electricity	2011		2012	
	MW	GWh	MW	GWh
<b>Hydro:</b>				
< 1 MW				
1 MW - 10 MW				
> 10 MW				
of which pumping				
<b>Geothermal:</b>				
<b>Solar:</b>				
Photovoltaic	6.65	12.392	18.72	13.6
Concentrated solar power				
<b>Tide, wave, ocean :</b>				
<b>Wind: (small wind)</b>				
Onshore				
Offshore				
<b>Biomass:</b>				
Solid				
biogas		1.55		3.03
bioliquids				
<b>Total</b>		13.942		16.63
of which in CHP				

**Table 1c: Total actual contribution (final energy consumption<sup>6</sup>) from each renewable energy technology in Malta to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in heating and cooling (ktoe)<sup>7</sup> (Source: Wasteserv Ltd., National Statistics Office, Malta Resources Authority)**

heating & cooling	2011	2012
<b>ktoe</b>		
<b>Geothermal (excluding low temperature geothermal heat in heat pump applications)</b>		
<b>Solar:</b>	2.88	3.88
<b>Biomass:</b>		
solid	0.65	0.65
biogas	0.31	0.41
bioliquids		
<b>Renewables energy from heat pumps:</b>		
of which aerothermal	0.00	1.76
of which geothermal		
of which hydrothermal		
<b>Total</b>	3.84	6.70
of which DH		
of which biomass in households	0.00	0.00

Commission Decision 2013/114/EU establishing the guidelines for Member States on the calculation of renewable energy from heat pumps has highlighted heating through aero-thermal heat-pumps as an eligible potential which had previously been bypassed, due to unclear definition of the requirements and lack of local market information.

The same equipment used for cooling (AC) run in reverse mode can generally be used for heating. Hence, space heating through aero-thermal heat-pumps is now quite common in Malta during cold winter periods, especially in commercial buildings, offices and hotels. The Malta Resources Authority has conducted a survey to identify the state of play of heat pumps in the industrial and commercial sector. Results have shown that the renewable energy generation from heat pumps in this sector is 10.6GWh. Another study conducted by the Institute for Sustainable Energy has shown that heat pumps used for heating in the domestic sector contribute 9.9GWh.

<sup>5</sup> Facilitates comparison with Table 10a of the NREAPs.

<sup>6</sup> Direct use and district heat as defined in Article 5.4 of Directive 2009/28/EC.

<sup>7</sup> Facilitates comparison with Table 11 of the NREAPs.

**Table 1d: Total actual contribution from each renewable energy technology in Malta to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in the transport sector (ktoe)<sup>8,9</sup> (Source: Malta Resources Authority)**

<b>Transport</b>		
<b>ktoe</b>	<b>2011</b>	<b>2012</b>
Bioethanol/bio-ETBE	0	0
<i>of which biofuels Article 21(2)</i>		
<i>of which imported</i>	0	0
Biodiesel	1.32	3.03
<i>of which Biofuels Article 21(2)</i>	1.32	3.03
<i>of which imported</i>	0	0
Hydrogen from renewables		
Renewable electricity in transport	0	0
<i>of which road transport</i>	0	0
<i>of which non-road transport</i>		
Others (as biogas, vegetable oils etc.) - please specify		
<i>of which Biofuels Article 21(2)</i>		
Total	1.32	3.03

**2. Measures taken in the preceding 2 years and/or planned at national level to promote the growth of energy from renewable sources taking into account the indicative trajectory for achieving the national RES targets as outlined in your National Renewable Energy Action Plan. (Article 22(1)a) of Directive 2009/28/EC)**

**Table 2: Overview of all policies and measures**

<b>Name and reference of the measure</b>	<b>Type of measure</b>	<b>Expected result</b>	<b>Targeted group and or activity</b>	<b>Existing or Planned</b>	<b>Start and end dates of measure</b>
<i>General Solar</i>					
The Malta Environment and Planning Authority (MEPA) to revise solar policy documents to encourage/ facilitate solar technology (PV and SWH) uptake.	soft	Behavioural change	public	Ongoing	2014-2020
Grant schemes from Malta Enterprise for PV and solar heaters for the industrial commercial and hospitality	Financial	Increase 5800kWp	Industrial	Completed	2009 - 2013

<sup>8</sup> For biofuels take into account only those compliant with the sustainability criteria, cf. Article 5(1) last subparagraph.

<sup>9</sup> Facilitates comparison with Table 12 of the NREAPs.

sector.					
Conclude studies leading to the determination of whether the requirement that new buildings are to integrate RES sources – particularly solar based RES - is to be introduced as a mandatory planning requirement.	Regulatory	Low carbon buildings	public	Planned	2014
Project calls from Planning and Priorities Coordination Division for financing of projects on energy related sectors including RES & EE	Financial	Annual penetration of 340kWp of solar, and microwind, 2-3 schemes, 1 study	Public, Non profit organisations	Completed	2007 - 2013
EPBR implementation	Regulatory	Low carbon buildings	public	<b>Ongoing</b>	2014
MEPA to develop and identify which areas in Malta can be used for PV farms – preferably those already committed for other development – eg spent quarries, car parks etc.	Soft	Behavioural Change	Public	Ongoing	2014-2020
Grant schemes for PV installation in the domestic sector.	Financial	11.4 MWp in 2013. 16.8MWp in 2014  10MWp per annum from 2015 onwards.	residential	Existing	Ongoing
Installation of PVs on government buildings – Phase 2	Financial	4.6MWp	Government entities and private sector.	Planned	2014-2015
Communal medium scale PV projects specifically designed for small investors and for households who do not have access to a roof top.	Financial	Low carbon buildings	public	Planned	2014-2015

Feed-in tariffs guaranteed for 20 years without grant option for PV. Amount reviewed from time to time in response to changing conditions.	Regulatory	Self sustained market	public	Existing	Ongoing.
Option of net-metering to promote self consumption of energy produced by PVs.	Soft	Self sustained market	public	Existing	Ongoing
Malta Industrial Parks to draw up a strategy to facilitate use of roofs in industrial zones for the installation of PV systems.	Soft	Behavioural change	Industrial	Planned	2014-2020
Continue to support R & D of more efficient and cost effective systems eg. 'PV inclination to incentivise higher electricity generation into the summer months.	Soft	Behavioural change	Public	Planned	2014-2020
Use the full potential of Smart meters to fine-tune FIT tariff, optimize the maximum use of PV systems.	Soft	Behavioural change	Public	Planned	2014-2020
Grant scheme for SWH installation in the domestic sector	Financial	600MWh	residential	Existing	Ongoing
Education Campaign on the use of Heat pumps for space heating	Soft	Behavioural change	public	Planned	2013-2014
Monitor, through the University of Malta, the progress of all RES technologies – e.g. deep offshore floating wind technology from both technical and financial/economic and strategic prospective, for possible application at the appropriate time post 2020, if and when it becomes cost-effective in Malta's circumstances.	Soft	National wind potential in Malta	Investors and Public	Ongoing	2013

Carry out site selection studies for wind projects, as well as other environmental and upfront studies to maximise the interest of possible developers.	Soft	National wind potential in Malta	Investors and Public	Ongoing	2013
Expedite the completion of the research project that will assess the potential impact of microwind turbines on residential buildings and townscapes.	Soft	National wind potential in Malta	Investors and Public	Ongoing	2013
Set up support scheme depending on findings of study referred to in wind potential above.	Financial	Self sustained market	Investors and Public	Planned	2015-2020
Update assessment on how co-generation may be promoted.	Soft		Investors and Public	Planned	2015-2020
Promotion of Electrical Vehicles. Maintain 'Electric Vehicle' grant scheme open – 5000 Euros grant towards the original investment (capital cost) and favourable regulation tax. The scheme will be reviewed from time to time.	Financial	behavioural change and cleaner commuting	Public	Existing	Ongoing
Increase the number of public charging points for Electric Vehicles' if and as necessary.	Soft	Behavioural change	Public	Planned	2015-2020
<i>Autogas</i>					
Promotion of Auto-gas in transport	Soft	behavioural change and cleaner commuting	Public	Existing	2012
Training & certification of Autogas installers	Soft	Education / Regulation	Installers	Existing	Ongoing

<u>Biofuels.</u> <u>General</u>					
Ensure a robust regulatory regime for biofuels to, among other, – Monitor origin of imported bio fuels.  – Supervise the quality of locally produced bio fuel.	Regulatory	Cleaner Commuting	Fuel suppliers/pr oducers		
Pursue the possibility of introducing other types of bio fuels than being considered today – bioethanol, E85 and hydrogenated vegetable oil.	Regulatory	Self sustained market	Fuel suppliers/pr oducers		
<u>Biodiesel B5 to B20.</u>					
Set biofuel content level in imported fuels going up to 10% by 2020 and monitor compliance.	Regulatory	Self sustained market	Fuel suppliers/pr oducers		
Finalise consultation and endeavour to increase the share of biodiesel beyond the 7% limit for public transport vehicles by 2013.	Soft	More environmental benefits.	Public Transport		2014
Endeavour to maximise biofuel use by Gozo Channel vessels and other substantial marine enterprises.	Soft	Behavioural change	Marine sector		
Immediate introduction of BioETBE in Petrol	Regulatory	More environmental friendly fuel	Public		2014 -
Ensure (through regulatory means) that the public transport operator provides a fuel efficient service:	Regulatory	More environmental benefits.	Public Transport		Ongoing



<p>Introduce measures directed to achieve by 2030 up to a 35% improvement in fuel efficiency among private transport users by adopting measures that include but are not limited to the following:</p> <ul style="list-style-type: none"> <li>Public awareness campaigns on issues such as ecodriving.</li> </ul>	Soft	Behavioural change and cleaner commuting	Public		Ongoing
<p>Traffic congestion reduction in Malta through measures which include but are not limited to the following:</p> <ul style="list-style-type: none"> <li>Discussions with stakeholders to stagger the opening of schools in order to alleviate the moving grid lock experienced daily during the scholastic terms.</li> <li>Introduce CVA frameworks supported by park and ride facilities site in strategic areas.</li> </ul> <p>Introduce under the 2014-2020 EU Partnership agreement, a programme for road infrastructural development directed to remove network congestion bottlenecks.</p>	Soft	Behavioural change	Public		
<p>Other transport management initiatives to support the technical measures:</p> <ul style="list-style-type: none"> <li>Successful conclusion of the public transport reform.</li> <li>Organise auxiliary transport facilities and services (park and ride, intelligent transport systems).</li> <li>Introduce fiscal measures to reduce fuel consumption - scrappage scheme for polluting vehicles and replacement by Euro IV/V vehicles).</li> </ul>	Soft	Behavioural change	Public		

<ul style="list-style-type: none"> <li>• Traffic and congestion management (better accessibility to towns and more efficient roads, vehicle - sharing).</li> <li>• Information and advisory campaign (basic motoring and driving skills).</li> </ul>					
<p>Diesel vehicles of contractors working for Government will incrementally reach a bio-diesel blend of 15% (bio-petrol vehicles will be placed on same baseline should a bio-petrol that meets health and environment standard be identified).</p> <p>Assess market incentive options to encourage substitute to biodiesel (bio-petrol vehicles will be placed on same baseline should a bio-petrol that meets health and environment standard be identified).</p>	Regulatory	Cleaner commuting	Government sector		
	Soft	Behavioural change	Public		

\* Indicate if the measure is (predominantly) regulatory, financial or soft (i.e. information campaign).

\*\*Is the expected result behavioural change, installed capacity (MW; t/year), energy generated (ktoe)?

\*\*\*Who are the targeted persons: investors, end users, public administration, planners, architects, installers, etc? or what is the targeted activity / sector: biofuel production, energetic use of animal manure, etc)?

\*\*\*\* Does this measure replace or complement measures contained in Table 5 of the NREAP?

## **2.a Please describe the progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers to the development of renewable energy. (Article 22(1)e) of Directive 2009/28/EC).**

Malta will be achieving its 2020 renewable energy targets through a number of identified major solar, and waste to energy projects. However a great share of renewable energy will be generated from a relatively high number of small capacity renewable energy sources distributed across the Maltese Islands. These shall be mainly integrated in existing building infrastructures due to Malta's limited space and the conflicting use by other activities. Innovative technologies such as wave and other sea energy technologies are being actively investigated.

It is expected that the uptake of other renewable energy technologies will take place in the form of a larger number but smaller installation capacities with priority being given to those technologies which are already widely available, mainly solar photovoltaic systems, solar water heating and micro-wind.

There have been several major technology-related developments that require a revision of the RES mix.

The large offshore windfarm, which was expected to be a major contributor to the RES target cannot be considered further at this point in time because:

- The final results of the EIA on the Sikka l-Bajda site have shown that there are concerns about the environmental impact of a large wind farm at the site, especially on avifauna, with no likely sustainable mitigation measures. The studies to determine with certainty the impacts including the erection of full scale examples of the wind turbine - generators, are costly in time and money, with no guarantee of success.
- The cost of the energy from such a farm – estimated at about 25 cents/kw is not considered sustainable especially when the possibility of participating in joint project overseas or statistical transfers are considered, if needed.

Studies are currently in progress to identify the land area required to achieve a higher target of PVs. The area required has been identified to be approximately 2.6km<sup>2</sup>, which would ideally be met through rooftop space. This process will facilitate case by case site-selection exercises and unproductive Environmental Impact Assessments (EIA) and other studies. A preliminary study indicates that although the area can be achieved, in practice other services and uses compete for the same rooftop space and it is expected that once a new development framework is in place, a portion of new installations will be deployed on land. Roofs of public buildings are also being exploited, and this will be maximised.

Government is actively working with MEPA to identify land – preferably already disturbed, such as carparks, disused quarries - that can be dedicated to exploiting the indigenous PV contribution. Should part of the projected contribution of indigenous PV fail to materialise for reasons such as failure to obtain permits, the flexible mechanisms will provide the fall back position.

A major part of the uptake of the PVs on residential premises took place from 2009 onwards as a direct result of grant schemes enabling households to benefit from 50% of the initial capital investment, originally capped at €3,000.

In order to facilitate the uptake of small photovoltaic systems, the Malta Environment and Planning Authority had issued a set of guidelines in 2007 on planning permitting of solar applications installed within the curtilage of a building<sup>10</sup>. These guidelines have simplified the installation of such systems whereby subject to compliance with the guidelines, no planning permits will be required in most cases. Solar applications that fall outside the scope of these guidelines may require a planning permit from the local planning authority.

A set of planning permitting guidelines is also available for micro wind turbines with capacities up to 20kW<sup>11</sup>.

The authorisation and licensing of new generation capacity is regulated by the Electricity Market Regulations (SL 423.22). The Electricity Market Regulations exempt generators with capacity not exceeding 16Amps per phase and producing electricity from renewable energy sources from the requirement to obtain an authorisation and a license. Instead a fast track procedure was adopted whereby these generators require only the submission of a notification to the regulator prior to construction; A 'permission for grid connection' report is issued by the regulator.

In the non-residential sector, support schemes were part-funded under the ERDF program managed by Malta Enterprise. These schemes catered for the generation of electricity from renewable sources or efficiency measures in the industrial/commercial sector. Applicants could benefit from a grant of up to 50% on the initial investment, capped at €100,000. Three grant schemes of this type were active during 2009 and 2010.

Other support schemes were made available for the tourism sectors, and still another similar scheme was also launched for renewable energy-related building projects for education, NGO and religious

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<sup>12</sup> Schemes from 2009-September 2013

institutions and for local councils. As with the domestic sector, there was a significant increase in PV capacity uptake from 2009 onwards in conjunction with the launching of the grant schemes by Malta Enterprise.

Most of the uptake took place in 2010, 2011 and 2012 with an increase of 1.78 MW, 4.9 MW and 3.1MW respectively. Given the decreasing trend in the prices of PV systems technology, the point may soon be reached at which this technology can compete with other technologies on its own merits.

Following a competitive tender process designed to obtain the most advantageous purchase price of PV energy, Government awarded a concession to a private entity for the purpose of establishing, operating and maintaining photovoltaic systems on the roof tops of public buildings for a period of 25 years and selling the electricity generated to Enemalta Corporation. This entails a total useful area estimated to reach 67,000 m<sup>2</sup> being leased. The installation capacity for this project is approximately equal to 4.5 MWp and is estimated to generate about 7.5 GWh/annum. Government intends to follow up with Phase 2, generally similar to Phase 1 but guided by lessons learned from the initial initiative.

The Malta Environment and Planning Authority (MEPA) issued a set of guidelines in 2007 on planning permits for solar applications installed within the curtilage of a building. These guidelines simplified the permitting process for the installation of such systems. Subject to compliance with the guidelines, which occurs in most cases, no specific planning permits are required. Solar applications that fall outside the scope of these guidelines may require a planning permit from the local planning authority.

A system of fast track permitting was also adopted by the MRA for PVs not larger than 16 Amps per phase to facilitate the installation of these systems and their connection to the grid. Larger PV systems may still require authorisation prior to construction and, once commissioned, a 'licence to operate' before connection to the grid.

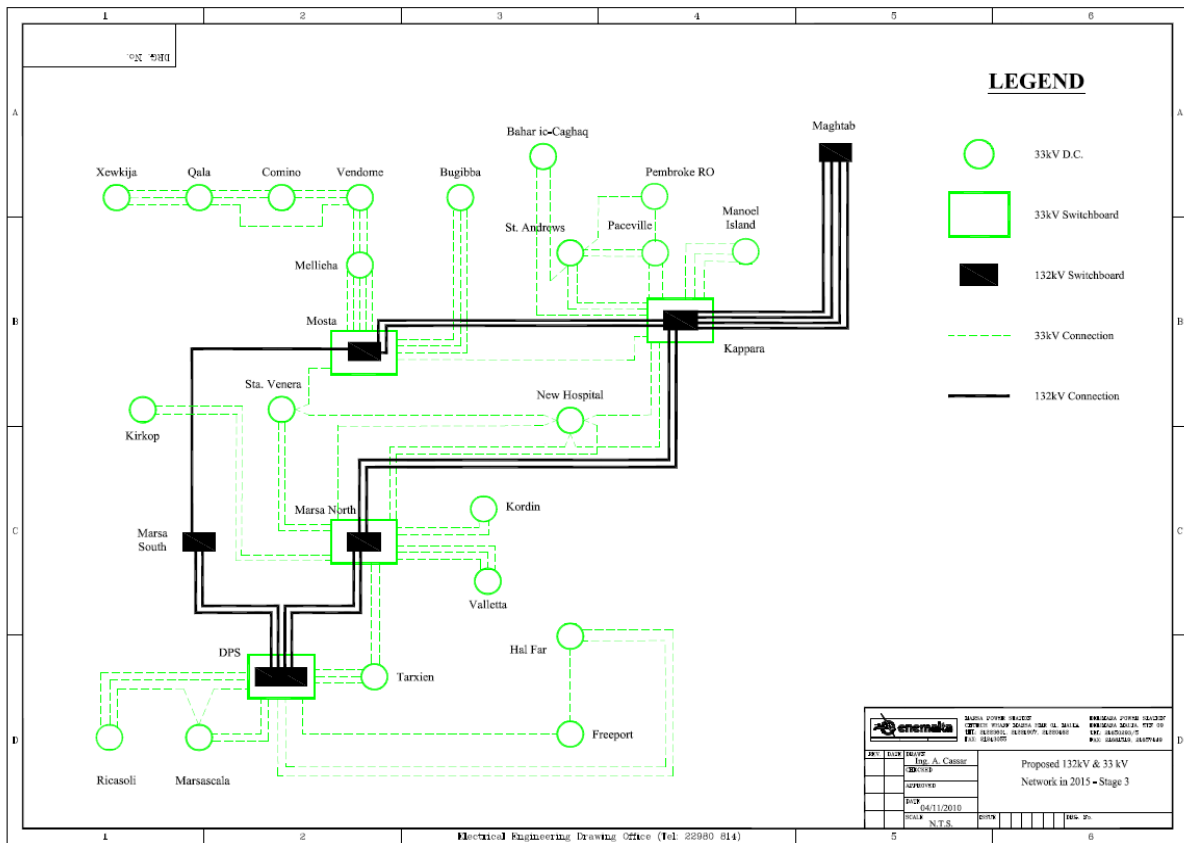
**2.b Please describe the measures in ensuring the transmission and distribution of electricity produced from renewable energy sources and in improving the framework or rules for bearing and sharing of costs related to grid connections and grid reinforcements. (Article 22(1)f) of Directive 2009/28/EC).**

The high-voltage (HV) network requires continuous development in order to meet the energy needs and expectations of the customer in a safe, secure and efficient manner which is both environmentally and economically sustainable.

The high voltage (HV) network essentially consists of 132kV, 33kV and 11kV underground cables and overhead lines connected to the two Power Stations, the Distribution Centres (DC's) and the Distribution Substations. The 132kV and 33kV circuits are the backbone of the HV network and convey power from the power stations to 18 strategically located distribution centres. 11kV circuits distribute power from the distribution centres to approximately 1300 distribution substations dispersed all over the inhabited parts of the Maltese Island to serve around 250,000 consumers. Large industrial and commercial establishments are connected directly to the distribution substations, whilst the small to medium industrial and commercial entities and the domestic consumers are serviced through a low voltage network supplied from the distribution substations.

The 132kV distribution network has been extended in order to connect to the electricity interconnector between Malta and Sicily. The extension of the network was necessary to be able to transmit and distribute the electricity imported.

Figure 1 shows the expected distribution system in Malta in 2015, following the commissioning of the sub-sea interconnector.



**Figure 1: The expected distribution system in Malta in 2015, following the commissioning of the sub-sea interconnector.**

Considerable investments are being made in upgrading the related infrastructure and in diversifying sources and supply and improving energy efficiency in primary energy, resulting in a significant reduction in energy prices and in Malta's CO<sub>2</sub> emissions., in line with the overall European policy of increasing the security of supply, in a sustainable manner, whilst increasing competitiveness by ensuring affordability of energy prices.

The electricity interconnector with Sicily is expected to become operational in 2014. This will bring about an important change to the energy system, since Malta will no longer be an isolated island, in terms of energy supply, thus increasing energy security. Moreover, electricity purchased through the interconnector should also be cheaper as it takes advantage of economies of scale not achievable in Malta. The increase in capacity, as a result of the interconnector, will mean that the inefficient Marsa power plant will stop operation , thus improving the overall generation efficiency. Moreover, the connection to the continental European Grid will also raise the capacity to integrate energy produced from renewable sources.

The plan to switch from heavy fuel to natural gas as the main energy source for the generation of electricity at the Delimara Power Station in the shortest possible time, involving investment by the private sector, should also contribute towards lowering generation costs and cutting carbon emissions. This is being complemented by efforts to promote independent investment in Malta's energy infrastructure in the form of new facilities, favouring the import, storage and processing of liquefied natural gas.

Malta's Energy Policy is currently being reviewed in consideration of the integration of RES energy with the new conventional CCGT generating infrastructure. Malta faces a number of challenges in achieving its declared targets with respect to energy from renewable sources. Whilst the isolation is

being addressed, the small size of the Maltese internal market and the location of Malta on the periphery of mainland Europe, remain intrinsic to the nature of Malta.

**3. Please describe the support schemes and other measures currently in place that are applied to promote energy from renewable sources and report on any developments in the measures used with respect to those set out in your National Renewable Energy Action Plan. (Article 22(1)b) of Directive 2009/28/EC).**

*The Commission reminds Member States that all national support schemes must respect the state aid rules as foreseen in Articles 107 and 108 of the Treaty on the Functioning of the EU. The notification of the report in accordance with Article 22 of Directive 2009/28/EC does not replace a state aid notification in accordance with Articles 107 and 108 of the Treaty on the Functioning of the EU.*

*It is suggested that **table 3** is used to provide more detailed information on the support schemes in place and the support levels applied to various renewable energy technologies. Member States are encouraged to provide information on the methodology used to determine the level and design of support schemes for renewable energy.*

**Table 3: Support schemes for renewable energy**

RES support schemes up to year 2013 <sup>12</sup>		Per unit Support <sup>13</sup> (€/kWh)	Total <sup>14</sup> (M€)
<b>RES schemes in domestic sector (MRA)</b>			
Grants	Capital grants on Solar Water heaters	0.02	2.9
Grants	Capital grants on Photovoltaic systems	0.08	38.9
<b>RES schemes in industrial / commercial sector (ME)</b>			
Grants	Capital grants on Photovoltaic and Solar Water heaters	0.10142	9.2928
<b>RES schemes for Local Councils (OPM)</b>			
Grants	Capital grants on Solar Water heaters	0.04	0.0046

<sup>12</sup> Schemes from 2009-September 2013

<sup>13</sup> Per unit cost=support funding/(energy generated over lifetime of system)

<sup>14</sup> Includes EU funds and national funds

Grants	Capital grants on Photovoltaic systems	0.09	0.2
<b>Energy schemes for University of Malta</b>			
Grants	Capital grants on Green equipment / activities	0.48	0.15
<b>RES schemes for Malta College of Arts Science and Technology</b>			
Grants	Capital grants on RES equipment	0.09	0.46
<b>Energy schemes for Housing Authority</b>			
Grants	Capital grants on Green equipment / activities	0.11	0.04
<b>RES schemes for University of Gozo</b>			
Grants	Capital grants on RES equipment	0.065	0.07
<b>Energy schemes for Diocese of Gozo</b>			
Grants	Capital grants on Green equipment / activities	0.03	0.06
<b>Energy Schemes for Private Schools Association</b>			
Grants	Grant of photovoltaic	0.03	0.37
<b>Energy Schemes for Diocese of Malta</b>			
Grants	Grant of photovoltaic	0.03	0.18
<b>Energy Schemes for Band Club</b>			
Grants	Grant of photovoltaic	0.03	0.11
<b>Energy Schemes for Sports Complexes</b>			
Grants	Grant of photovoltaic	0.023	0.4
<b>Tariff schemes for grid connected Photovoltaics</b>			
FIT	Feed -in Tariff for grid tied Photovoltaic systems	0.24	6.4
<b>Promotion schemes for electric vehicles</b>			

Grants	Capital grants on Electric Vehicles		0
<b>Bio-fuel use in transport</b>			
Obligation	Obligation of 1.5% bio-fuel mix, 0.75% in case of bio-fuel from Article 21.2	N/A	N/A

Total annual estimated support in the electricity sector		56.63
Total annual estimated support in the heating sector		2.90
Total annual estimated support in the transport sector		N/A
<b>Total estimated support</b>		<b>59.53</b>

**3.1. Please provide the information on how supported electricity is allocated to final customers for purposes of Article 3 (6) of Directive 2003/54/EC. (Article 22(1)b) of Directive 2009/28/EC).**

The local energy supplier Enemalta Corporation provides information on the fuel mix and emissions through interactive requests from the website<sup>15</sup>, annual reports also available on its website<sup>16</sup> and public annual reports. CO<sub>2</sub> emissions are also available on the electricity bills<sup>17</sup> sent to its consumers.

The Enemalta Corporation website also indicates flue gas emissions period reports selected interactively per plant, a set of energy tips, promotion to alternative energy and clean energy initiatives with on-line reports. The website of its subsidiary for the billing activities, ARMS Ltd, provides information on billing and billing methods for grid connected renewable sources, namely photovoltaic systems. Premises that are installed with a renewable energy source, such as a photovoltaic panel you are compensated for electricity supplied to the grid. In this case meter readings details, the amount to be refunded and a breakdown of workings will appear on the bill.

The ARMS website contains a link to the process flow chart for the processing of applications for grid connections of distributed renewable energy sources<sup>18</sup>

<sup>15</sup> Enemalta Emissions interactive website : <http://www.enemalta.com.mt/emissions/#>

<sup>16</sup> Energy supplier's website link <http://www.enemalta.com.mt/home.aspx> and for annual reports defining the fuel mix at : <http://www.enemalta.com.mt/index.aspx?cat=1&art=14>

Billing Agency website link:

[https://www.smartutilities.com.mt/wps/portal/Public%20Area/ARMS.PublicArea.Home/lut/p/c5/hY3PCoJAHISfpQeI37jqakcz0a1wk01TL7KEiOCfDhH09ikdOpkzx28-hkqaOuhX2-hnOw66o5xKXhk8NbNTaCCMLwGEdXT95AomhT3xgld-6EWWcwYkywAW2ypBqkwIc8W-zX\\_\\_\\_ZljIR6-fPFhhTNOcTT2Nal6oIJK57eUO-VDqEMa2IHLIB0qurrR9zc9-hyt2O4Tb7P5ACuwhYA!/dl3/d3/L3dDb0EvUU5RTGtBISEvWUZSdndBISEvNI9MOEdFU1VKNDE4RII1MEITSORDR1VQMUFGMg!!/](https://www.smartutilities.com.mt/wps/portal/Public%20Area/ARMS.PublicArea.Home/lut/p/c5/hY3PCoJAHISfpQeI37jqakcz0a1wk01TL7KEiOCfDhH09ikdOpkzx28-hkqaOuhX2-hnOw66o5xKXhk8NbNTaCCMLwGEdXT95AomhT3xgld-6EWWcwYkywAW2ypBqkwIc8W-zX___ZljIR6-fPFhhTNOcTT2Nal6oIJK57eUO-VDqEMa2IHLIB0qurrR9zc9-hyt2O4Tb7P5ACuwhYA!/dl3/d3/L3dDb0EvUU5RTGtBISEvWUZSdndBISEvNI9MOEdFU1VKNDE4RII1MEITSORDR1VQMUFGMg!!/)

<sup>17</sup> Electricity Bill booklet explained at

<https://www.smartutilities.com.mt/wps/wcm/connect/99177680460fae08b1d0f907673cd39a/4201+ARMS+NEW+BILLING+INFO+BOOKLET+FINAL+MALT.pdf?MOD=AJPERES>

Or

<http://www.enemalta.com.mt/index.aspx?cat=5&art=30>

<sup>18</sup><http://www.enemalta.com.mt/enemaltastorage/images/files/miscellaneous/process%20flow%20for%20grid%20connection%20evaluations%20v2.1.pdf>



**4. Please provide information on how, where applicable, the support schemes have been structured to take into account RES applications that give additional benefits, but may also have higher costs, including biofuels made from wastes, residues, non-food cellulosic material, and ligno-cellulosic material?) (Article 22 (1)c of Directive 2009/28/EC)).**

The generation of electricity from renewable technologies, mainly those unconventional and deriving from innovative technologies, normally derive energy at a relatively higher cost than conventional and need to be financially assisted accordingly. The Maltese Government is aware of such a situation and has been providing capital grants for solar technologies such as for solar water heating and solar photovoltaic systems. For the latter technology, the incentives have been further complimented by a feed-in tariff so as to ensure that the installations of such systems are also a competitive investment and that such monies are invested in innovative and environmental friendly technologies. The Feed-in Tariff Regulation (LN 422/10) is aimed at solar photovoltaic systems, however this is the first stepping stone to similar tariffs aimed at other grid connected renewable energy technologies, as micro-wind and co-generation especially if the latter is driven by a share of renewable energy sources. Similar to solar photovoltaic systems, capital grants are also available for micro-wind turbines.

**5. Please provide information on the functioning of the system of guarantees of origin for electricity and heating and cooling from RES, and the measures taken to ensure reliability and protection against fraud of the system. (Article 22(1)d of Directive 2009/28/EC)).**

The regulation establishing ‘guarantees of origin’ came into force by means of the *Guarantees of Origin of Electricity from High Efficiency Cogeneration and Electricity, Heating and/or Cooling from Renewable Energy Sources Regulations* (LN 92/10 as amended by LN 126/11)<sup>19</sup> and was amended to include references to ‘guarantees of origin’ from the Renewables Directive (Directive 2009/28/EC<sup>20</sup> of the European Parliament and of the Council of 23 April 2009 on the promotion of use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

The Legal Notice defines the conditions required for the issuing of a certificate and establishes the Malta Resources Authority as competent Authority to issue certificates and to keep and update an electronic register.

Within the national regulatory framework, EneMalta Corporation is under no obligation to generate from RES sources. Consequently no request has yet been received from the main electricity distributor on the Islands (Enemalta which is the sole distributor of electricity and consequently the DSO) for the issue of a ‘guarantees of origin’ certificate. Other small RES electricity generators could have requested such ‘guarantees of origin’ certificate for it to be traded however up to this date, these electricity generators have opted for other measures such as the fixed feed-in tariff and capital grants for the financing of the project. These measures were aimed to provide a financial payback to support RES and have taken precedence over the variable market of ‘guarantees of origin’ which currently does not have any local demands.

**6. Please describe the developments in the preceding 2 years in the availability and use of biomass resources for energy purposes. (Article 22(1)g of Directive 2009/28/EC)).**

*It is suggested that tables 4 and 4a are used to provide more detailed information on the biomass supply.*

**Table 4: Biomass supply for energy use**

<sup>19</sup> <http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=10701>

<sup>20</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0016:0062:en:PDF>

	Amount of domestic raw material *(tonnes)		Primary energy in domestic raw material (ktoe)		Amount of imported raw material from EU *(tonnes)		Primary energy in amount of imported raw material from EU (ktoe)		Amount of imported raw material from non EU *(tonnes)		Primary energy in amount of imported raw material from non EU (ktoe)	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
<i>Biomass supply for heating and electricity</i>												
Direct supply of wood biomass from forests and other wooded land energy generation (fellings etc.)**					105.8	407.3			0.0	0.0		
Indirect supply of wood biomass (residues and co-products from wood industry etc.)**					492.2	573.0			1,057.9	1,234.4		
Energy crops (grasses etc..) and short rotation trees (please specify)												
Agricultural by-products/processed residues and fishery by-products**	280,000.0	280,000	3.97	3.97								
Biomass from waste (municipal, industrial etc.)**	126,376.0	130,311.0	0.13 in elec	0.26 in elec								
			0.38 in heat	0.41 in heat								
Others (please specify)												
<i>Biomass supply for transport</i>												
Common arable crops for biofuels (please specify main types)												
Energy crops (grasses etc..) and short rotation trees for biofuels (please specify main types)												
Others (please specify)												

\* Amount of raw material if possible in **m3 for biomass from forestry** and in **tonnes for biomass from agriculture and fishery and biomass from waste**

\*\* The definition of this biomass category should be understood in line with table 7 of part 4.6.1 of Commission Decision C (2009) 5174 final establishing a template for National Renewable Energy Action Plans under Directive 2009/28/EC

No substantial domestic land is being used for the production of crops, rotation trees and grasses mainly aimed as a produce of energy or fuel related purposes.

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**Table 4a. Current domestic agricultural land use for production of crops dedicated to energy production (ha)**

Land use	Surface (ha)	
	2011	2012
1. Land used for common arable crops (wheat, sugar beet etc.) and oilseeds (rapeseed, sunflower etc.) (Please specify main types)	Nil	Nil
2. Land used for short rotation trees (willows, poplars).(Please specify main types)	Nil	Nil
3. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum. (Please specify main types)	Nil	Nil

**7. Please provide information on any changes in commodity prices and land use within your Member State in the preceding 2 years associated with increased use of biomass and other forms of energy from renewable sources? Please provide where available references to relevant documentation on these impacts in your country. (Article 22(1) h of Directive 2009/28/EC).**

*When assessing commodity price impacts, it is suggested to consider at least the following commodities: common food and feed crops, energy wood, pellets.*

No fuel crops are planted locally whilst biodiesel is produced using cooking oil and animal fats as feed stocks.

Grid connected renewable energy systems in 2011-2012 are mainly attributed to solar photovoltaic systems. Incentives to increase use of renewable energy include the introduction of a feed-in tariff for solar photovoltaic system in September 2010 through the Feed-in Tariffs Regulations (Legal Notice 422 of 2008) such that photovoltaic installations including those benefiting from a grant could also benefit from the payment of a feed-in tariff on the electricity exported from such systems. The introduction of a feed-in tariff replaced the previous net-metering agreements, however, owners of the photovoltaic installations could still use the system for self-production and export the surplus at the established feed-in tariff. The introduction of the feed-in tariff increased the potential for exploitation of the roofs available especially for premises with no consumption and hence with no incentive for net metering.

Based on the latest data provided by the Malta Resources Authority, up to the second quarter of 2013, the amount of PVs connected was of 18.9MWp. This has been possible due to the incentives offered by ERDF co-financed grants, attractive feed-in tariffs and the decreasing price of the technology, increasing the feasibility of photovoltaic technology.

There was a minimal influence on the price of the dispatched electricity to the end consumers as the total amount of energy generated by solar technologies was minimal in relation to the total electricity dispatched.

**8. Please describe the development and share of biofuels made from wastes, residues, non-food cellulosic material, and lingo cellulosic material. (Article 22(1) i of Directive 2009/28/EC).**

*Table 5: Production and consumption of Art.21(2) biofuels (Ktoe)*

Article 21(2) biofuels[1]	2011	2012
Production - fuel type bio-diesel	0.75	0.98
Consumption - fuel type bio-diesel	1.94	3.07
Total production Art.21.2. biofuels (same as above)	0.75	0.98
Total consumption Art.21.2. biofuels (same as above)	1.94	3.07
% share of Art. 21.2 fuels from total RES-T	100.00%	100

**9. Please provide information on the estimated impacts of the production of biofuels and bioliquids on biodiversity, water resources, water quality and soil quality within your country in the preceding 2 years.** Please provide information on how these impacts were assessed, with references to relevant documentation on these impacts within your country. (*Article 22 (1) j) of Directive 2009/28/EC*).

Local bio-fuel production derives mainly from used cooking oil waste streams. Thus there is minimal impact on biodiversity, water resources, water quality and soil quality. The local manufacturer of bio-fuels has to abide to Integrated Pollution Prevention and Control regulations. On the other hand it is considered as having a positive impact on environment as it re-uses waste which would otherwise have to be disposed of.

**10. Please estimate the net greenhouse gas emission savings due to the use of energy from renewable sources (*Article 22 (1) k) of Directive 2009/28/EC*).**

*For the calculation of net greenhouse gas emission savings from the use of renewable energy, the following methodology is suggested:*

- *For biofuels: In accordance with Article 22(2) of Directive 2009/28/EC.*
- *For electricity and heat it is suggested to use the EU wide fossil fuel comparators for electricity and heat as set out in the report on sustainability requirements for the use of solid and gaseous biomass sources in electricity, heating and cooling<sup>21</sup>, if no later estimates are available.*

*If a Member State chooses not to use the suggested methodology for estimating the net greenhouse gas emission savings, please describe what other methodology has been used to estimate these savings.*

*Table 6: Estimated GHG emission savings from the use of renewable energy (t CO<sub>2</sub>eq)*

Environmental aspects	2011	2012
Total estimated net GHG emission saving from using renewable energy[1]	45,240.3	140,391.9
Estimated net GHG saving from the use of renewable electricity	16,925.7	93,150.6
Estimated net GHG saving from the use of renewable energy in heating and cooling	24,171.6	37,692.1

<sup>21</sup> Report available on: [http://ec.europa.eu/energy/renewables/transparency\\_platform/doc/2010\\_report/com\\_2010\\_0011\\_3\\_report.pdf](http://ec.europa.eu/energy/renewables/transparency_platform/doc/2010_report/com_2010_0011_3_report.pdf).

Estimated net GHG saving from the use of renewable energy in transport	4,143.1	9,549.3
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**11. Please report on (for the preceding 2 years) and estimate (for the following years up to 2020) the excess/deficit production of energy from renewable sources compared to the indicative trajectory which could be transferred to/imported from other Member States and/or third countries, as well as estimated potential for joint projects until 2020. (Article 22 (1) l, m) of Directive 2009/28/EC).**

**Table 7: Actual and estimated excess and/or deficit (-) production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States and/or third countries in Malta (ktoe)<sup>22, 23</sup>,**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Actual/estimated deficit/surplus from target required in Res directive			2.99		3.92		6.42		10.45		- 2.00

**11.1. Please provide details of statistical transfers, joint projects and joint support scheme decision rules.**

The Renewable Energy directive 2009/28/EC requires Member States to implement National Action Plans that establish pathways for the development of renewable energy sources and to report on progress periodically. It also provides for cooperation mechanisms<sup>24</sup> aimed at helping Member States to achieve the targets in a cost-effective manner through cooperation with other Member States and third countries.

Malta's size and geographical constraints make the use of cooperative mechanisms very interesting for the achievement of the 10% RES share in gross final energy consumption in 2020. They are potentially fallback positions should any part of the current NREAP fail to materialise. It has already been pointed out that the country is fully stretched in its endeavours to meet the set RES targets.

Cooperation mechanisms would lead to a loss of the physical energy contribution from RES in the receiving member state which would have to be replaced from conventional electricity either produced locally or imported. The loss of the RES electricity would have a negative contribution to air pollution if the electricity is produced locally through conventional electricity and the significance of the impact would depend on the fuels used. This impact would not apply to imported electricity.

There would also be a negative impact on security of supply and green job creation since Malta would rely more on imported energy, either in the form of fossil fuels for electricity generation or direct electricity imports.

In view of these issues, Malta will be commissioning a study to evaluate the potential of all options offered by Flexible mechanisms and to determine the availability of the renewable energy surplus

<sup>22</sup> Please use actual figures to report on the excess production in the two years preceding submission of the report, and estimates for the following years up to 2020. In each report Member State may correct the data of the previous reports.

<sup>23</sup> When filling in the table, for deficit production please mark the shortage of production using negative numbers (e.g. -x ktoe).

<sup>24</sup> See Annex 4 for a description of the flexible Mechanisms.

potential within European Member States and outside the EU. Price allocations and direct and indirect benefits will be analysed and compared to the possibility of exploiting large scale renewable energy through appropriate cost benefit analysis. As the sustainable indigenous RES potential is exploited, cooperation mechanisms in other member states and third countries could be the way forward towards post-2020.

In terms of large scale RES initiatives, Malta has always supported such projects and particularly in the Mediterranean area, such as the Mediterranean Solar Plan and Desertec .

The Government's initiative to engage with China, a major manufacturer of PV panels and other RES hardware, to invest in RES projects in third countries through locally assembled PV panels could unlock a significant potential for Malta , not only in the creation of green jobs but also in satisfying its RES obligations and trading renewable energy.

**12. Please provide information on how the share for biodegradable waste in waste used for producing energy has been estimated, and what steps have been taken to improve and verify such estimates. (Article 22 (1) n of Directive 2009/28/EC)).**

The share of biodegradable waste in municipal waste is based on information on the composition of waste as published by the National Statistics Office (2002). The information is based on a field survey. The National Statistics Office has recently conducted a fresh survey; results have however not been published to date.