

## **Template For National Renewable Energy Action Plans (NREAPs)**

24 May 2011

*Directive 2009/28/EC requires Member States to submit a National Renewable Action Plan (NREAP) to the European Commission by 30 June 2010. This is the template for these Action Plans. In accordance with Article 4 of Directive 2009/28/EC, the use of this template is obligatory.*

*The purpose of the template is to ensure that NREAPs are complete, cover all the requirements laid down in the Directive and are comparable with each other and with future Member State biannual reports on the implementation of the Directive.*

*When filling in the template, Member States are required to comply with the definitions, calculation rules and terminology laid down in Directive 2009/28/EC. Member States are furthermore encouraged to use the definitions, calculation rules and terminology in Regulation (EC) No 1099/2008 of the European Parliament and the Council ( 1 ).*

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

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

*The Commission reminds Member States that all national support schemes must respect the State aid rules as foreseen in Articles 87 and 88 of the EC-Treaty. The notification of the NREAPs does not replace a State aid notification in accordance with Article 88(3) of the EC-Treaty.*

### **1. SUMMARY OF NATIONAL RENEWABLE ENERGY POLICY**

*Please give a short overview of the national renewable energy policy describing the objectives of the policy (such as security of supply, environmental, economic and social benefits) and the main strategic lines of action.*

In April 2009, the Ministry for Resources and Rural Affairs announced a proposal for an Energy Policy for Malta, which will be finalised by the end of September 2011 following the consultation process and a Strategic Environmental Assessment.

The objectives of the policy are security of supply, competitive pricing of high energy services and sustainability, in particularly the financial and environmental aspects. The policy addresses the above objectives in six policy areas:

- Energy efficiency
- Reducing reliance on imported fuels
- Stability in energy supply
- Reducing the emissions from the energy sector
- Delivering energy efficiently and effectively
- Ensuring that the energy sector can deliver

The proposal makes special emphasis on the reduction of dependence on fossil fuels as a primary energy source and on providing cleaner energy sources. One way of achieving this is through the inclusion of renewable energy resources. A special reference to the inclusion of renewable energy technologies, as part of the local energy portfolio, has been addressed for their beneficial impact on the environment, security of supply and market competition.

The policy builds on previous policies, strategies, studies and reports related to the energy sector.

## **2. EXPECTED FINAL ENERGY CONSUMPTION 2010-2020**

*In this section, Member States are required to set out their estimates of gross final energy consumption of all types of energy (from both renewable and conventional sources), overall and for each sector, in the period up to 2020.*

*These estimates have to also take into account the expected effects of energy efficiency and saving measures to be introduced during the period. Under the heading ‘reference scenario’ a scenario has to be presented taking into account only the energy efficiency and savings measures adopted before 2009. Under the heading ‘additional energy efficiency scenario’ a scenario has to be presented taking into account all measures to be adopted from 2009. The elaboration of the other parts of the NREAP is based on this additional energy efficiency scenario.*

*The term ‘consumption for heating and cooling’ has to be understood as the derived heat produced (heat sold), plus the final consumption of all other energy commodities except electricity in end-use sectors such as industry, households, services, agriculture, forestry and fisheries. The notion of heating and cooling covers therefore also final energy consumption for processing. Electricity may also be used for heating and cooling in final*

*consumption, but this electricity is covered in the electricity target, which is why it is excluded here.*

*According to Article 5(6) of Directive 2009/28/EC, for the purpose of measuring compliance with the 2020 target and the interim trajectory, the amount of energy consumed in aviation is to be considered to be no more than 6,18 % of the Member State's gross final energy consumption (4,12 % for Cyprus and Malta). The appropriate adjustments (if any) could be made in the table.*

**Table 1**

**Expected gross final energy consumption of Malta in heating and cooling, electricity and transport up to 2020 taking into account the effects of energy efficiency and energy saving measures (2 ) 2010-2020 (ktoe)**

ktoe	2010		2011		2012		2013		2014	
	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
1.Heating and Cooling	45.92	<b>44.76</b>	55.97	<b>54.51</b>	58.14	<b>56.39</b>	60.43	<b>58.39</b>	62.77	<b>60.43</b>
2.Electricity	225.52	<b>215.36</b>	231.05	<b>219.97</b>	238.25	<b>226.31</b>	244.87	<b>232.06</b>	251.47	<b>237.76</b>
3. Transport as in Art 3(4)a	152.21	<b>152.21</b>	153.57	<b>153.54</b>	154.93	<b>154.86</b>	156.29	<b>156.19</b>	157.65	<b>157.51</b>
4.Gross Final energy consumption	517.35	<b>506.36</b>	534.29	<b>522.38</b>	545.02	<b>532.22</b>	555.30	<b>541.56</b>	565.59	<b>550.87</b>
	<i>The following calculation is needed since final energy consumption for aviation is expected to be higher than 4,12%</i>									
Final Consumption in Aviation		93.70		93.70		93.70		93.70		93.70
Reduced for aviation limit Art 5(6)		20.86		21.52		21.93		22.31		22.70
<b>Total Consumption after reduction for aviation limit</b>		433.52		450.20		460.45		470.17		479.87

ktoe	2015		2016		2017		2018		2019		2020	
	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency	reference scenario	additional energy efficiency
1.Heating and Cooling	65.64	<b>63.01</b>	67.84	<b>64.92</b>	70.27	<b>67.35</b>	72.23	<b>69.31</b>	74.18	<b>71.26</b>	75.65	<b>72.73</b>
2.Electricity	258.16	<b>243.57</b>	264.56	<b>249.08</b>	270.51	<b>253.78</b>	276.92	<b>258.95</b>	283.83	<b>264.65</b>	290.54	<b>270.12</b>
3. Transport as in Art 3(4)a	159.01	<b>158.83</b>	160.37	<b>160.15</b>	161.66	<b>161.41</b>	162.95	<b>162.66</b>	164.24	<b>163.92</b>	165.27	<b>164.91</b>
4.Gross Final energy consumption	576.51	<b>560.73</b>	586.47	<b>569.63</b>	596.14	<b>578.08</b>	605.80	<b>586.53</b>	615.96	<b>595.42</b>	625.17	<b>603.34</b>
	<i>The following calculation is needed since final energy consumption for aviation is expected to be higher than 4,12%</i>											
Final Consumption in Aviation		93.70		93.70		93.70		93.70		93.70		93.70
Reduced for aviation limit Art 5(6)		23.10		23.47		22.70		24.17		24.53		24.86
<b>Total Consumption after reduction for aviation limit</b>		490.13		499.40		507.08		517.00		526.25		534.49

### 3. RENEWABLE ENERGY TARGETS AND TRAJECTORIES

#### 3.1. National overall target

*Table 2*

**National overall target for the share of energy from renewable sources in gross final consumption of energy in 2005 and 2020 (figures to be transcribed from Annex I, Part A to Directive 2009/28/EC)**

A. Share of energy from renewable sources in gross final consumption of energy in 2005 (S_2005) (%)	0.00%
<b>B. Target of energy from renewable sources in gross final consumption of energy in 2020 (S_2020) (%)</b>	10.00%
C. Expected total adjusted energy consumption in 2020 (from Table 1, last cell) (ktoe)	534.49
D. Expected amount of energy from renewable sources corresponding to the 2020 target (calculated as B x C) (ktoe)	53.45

*Member States may choose to look to the flexibility measures in Articles 6, 7, 8 and 11 of Directive 2009/28/EC with a view to making some of their own renewable energy consumption available to count towards the targets of other Member State(s) — or with a view to counting energy from renewable sources consumed in other Member State(s) towards their own targets. In addition they may use physical imports from third countries of electricity from renewable energy sources in accordance with the provisions of Articles 9 and 10 of Directive 2009/28/EC.*

*Any assessments of the renewable energy potential of your country can be attached in annex.*

*Any renewable energy targets at regional level or in major cities or in major energy consuming industries supporting the national renewable energy target fulfilment can also be attached in annex.*

### 3.2. Sectoral targets and trajectories

According to Article 4(1) of Directive 2009/28/EC, Member States are required to set their targets for the share of energy from renewable sources in 2020 in the following sectors:

— heating and cooling,

— electricity,

— transport.

The total of the three sectoral targets, translated into expected volumes (ktoe) including the planned use of flexibility measures, has to be at least as high as the expected amount of energy from renewable sources that corresponds to the Member State's 2020 target (as reported in the last cell of Table 2).

The transport target, in addition, has to be compatible with the requirements of Article 3(4) of Directive 2009/28/EC for a 10 % share of renewable energy in transport. It should, however, be noted that the calculation of compliance with the target in Article 3(4) differs from the calculation of transport's contribution to the Member State's overall national target for renewable energy.

For the transport target, and not for the overall target:

— Among petroleum products, only petrol and diesel count towards the **denominator**. This means that the kerosene/jet fuel used in aviation and the fuel oil used in shipping do not count (though the diesel used by some trains and some inland waterway vessels does),

— Biofuels from wastes, residues, non-food cellulosic material and ligno-cellulosic material count double towards the **numerator**,

— Electricity from renewable sources used in road vehicles counts 2,5 times towards the **numerator and the denominator**.

According to Article 3(4)(c) of Directive 2009/28/EC to calculate the contribution of electricity produced from renewable sources and consumed in electric vehicles, Member States may choose to use either the average share of electricity from renewable energy sources in the Community, or the share of electricity from renewable energy sources in

*their own country, as measured two years before the year in question. For the estimation of the average share of electricity from renewable energy sources in the Community, Member States may use the future scenarios prepared by/for the European Commission.*

*As well as setting sectoral targets for 2020, Member States must also describe the trajectory that they expect the growth of renewable energy use in each sector to follow between 2010 and 2020. The sectoral renewable targets in electricity and heating and cooling and the sectoral trajectories are estimations.*

*Table 3 requires Member States to furnish the information referred to above.*

*When filling in the table, Member States will wish to draw on the more detailed breakdown of expected renewable energy use required by Table 9. Calculation Tables 4a and 4b provide guidance in preparing Table 3.*

*The Directive requires Member States to publish and notify to the Commission their forecast for the use of the flexibility measures by 31 December 2009. Member States will wish to draw on this forecast in filling in the relevant parts of Table 4a. Member States are not, however, required to use the same figures in their Action Plans as they gave in their forecast documents. In particular, they may wish to adjust the figures in the light of the information contained in other Member States' forecast documents.*

Table 3

**National 2020 target and estimated trajectory of energy from renewable sources in heating and cooling, electricity and transport**

(Calculation Tables 4a and 4b are expected to guide the preparation of Table 3)

%	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>RES-H&amp;C</b>	7.9%	8.4%	8.8%	8.5%	8.2%	7.9%	7.6%	7.4%	6.8%	6.6%	6.2%
<b>RES-E</b>	0.6%	1.1%	1.5%	3.7%	6.9%	7.0%	9.5%	14.8%	14.4%	14.1%	13.8%
<b>RES-T</b>	2.8%	3.0%	3.3%	3.6%	3.9%	4.2%	4.6%	5.8%	7.1%	8.2%	10.7%
<b>Overall RES share</b>	1.8%	2.3%	2.6%	3.8%	5.4%	5.5%	6.8%	9.7%	9.6%	9.7%	10.2%
<b>Of which required from cooperation mechanism</b>											
<b>Surplus for cooperation mechanism</b>			0.45%		1.60%		1.69%		3.14%		0.20%

As Part B of Annex I to the Directive			2011-2012	2013-2014	2015-2016	2017-2018		2020
RES minimum trajectory			2.00%	3.00%	4.50%	6.50%		10.00%
RES minimum trajectory (ktoe)			9.11	14.25	22.26	33.28		53.45

Table 4a

**Calculation table for the renewable energy contribution of each sector to final energy consumption**

ktoe	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(A) Expected gross final consumption of RES for heating and cooling	3.5	4.6	4.9	4.9	4.9	4.9	5.0	5.0	4.7	4.7	4.5
(B) Expected gross final consumption of electricity from RES	1.3	2.3	3.3	8.6	16.4	17.1	23.8	37.5	37.4	37.4	37.2
(C) Expected final consumption of energy from RES in transport	3.0	3.4	3.8	4.2	4.6	5.1	5.5	6.6	7.7	8.9	12.8
(D) Expected total RES Consumption	7.8	10.3	12.0	17.8	26.0	27.1	34.2	49.1	49.8	51.0	54.5
(E) Expected transfer of RES to other MS											
(F) Expected transfer of RES from other MS & 3rd countries											
(G) Expected RES consumption adjusted for target (D) - (E) + (F)	7.8	10.3	12.0	17.8	26.0	27.1	34.2	49.1	49.8	51.0	54.5

Table 4b

Calculation table for the renewable energy in transport share

ktoe	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
(C) Expected final consumption of energy from RES in transport	3.0	3.4	3.8	4.3	4.7	5.2	5.7	6.9	8.1	9.4	13.5
(H) Expected additional part RES Electricity in road transport	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.6	0.7
(I) Expected additional part consumption of bio-fuels from waste, residues, non-food cellulosic and lingo-cellulosic material in transport	1.2	1.3	1.3	1.3	1.3	1.3	1.3	2.0	2.7	3.2	3.2
(J) Expected RES contribution to transport for the RES-T target $(C) + (2,5-1) \times (H) + (2-1) \times (I)$	4.2	4.6	5.1	5.6	6.1	6.7	7.3	9.4	11.5	13.4	17.7

## 4. MEASURES FOR ACHIEVING THE TARGETS

### 4.1. Overview of all policies and measures to promote the use of energy from renewable resources

Table 5

#### Overview of all policies and measures

Name and reference of the measure	Type of measure	Expected result	Targeted group and or activity	Existing or planned	Start and end dates of measure
Grant schemes from Malta Resources Authority on SWH & PV	Financial	4.3GWh annual on 3 years	Residential	Existing	2010 - 2013
Grant schemes from Malta Enterprise on RES & EE	Financial		Industrial	Existing	2009 - 2013
Project calls from Planning and Priorities Coordination Division 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	Existing	2007 - 2013
Wind data measuring campaign to determine wind resources potential.	Soft	National Wind potential	Investors & Public	Existing	2009-2011
AA & EIA related to potential wind farm sites	Soft	109MW in wind energy	Investors & Public	Existing	2009-2012
Eol, Tender on Public roofs allocation to PV developers	Financial	> 10MW	Investors & Public	Planned	2010-2013
Financial incentive mechanisms , e.g. FIT, Net-metering	Regulatory	Self sustained market	Auto-producers and investors	Planned	2010
Bio-fuel substitution obligation.	Regulatory	4.9ktoe in 2020	suppliers, end-users	Planned	2010
Waste segregation for RRR (Reduce, Recycle, Reuse)	Soft	behavioural change	end-users	Existing	Ongoing
EPBR implementation	Regulatory	Low carbon buildings	architects, end-users	Planned	2010
EE schemes - Free CFL's per household	Soft	behaviour change	end-users	Existing	Done in 2009
CHP promotion	Soft	behavioural change	investors & end-user	Planned	2010
Bio-fuels use in heating and generation	Soft	behavioural change	generators, end users	Planned	2011

Guidelines for micro-wind turbine installations	Soft	reducing administrative barriers	investors, architects	In consultation	2010
Promotion by the use of micro-wind turbines at Public sites	Soft	behavioural change	public	Existing	Ongoing
Promotion by the use of photo-voltaic systems at public sites and buildings	Soft	behavioural change	public	Existing	Ongoing
Setting specifications for approved technologies.	Regulatory	Ensuring quality and positive perception of RES technologies	end users	Existing	Ongoing
Public awareness campaigns on EE and RES	Soft	behavioural change	end users, students	Existing	Ongoing
Smart metering on electricity consumption	Soft	behavioural change	end users	Existing	2009 -2012
Promotion of Electrical Vehicles	Soft	behavioural change and cleaner commuting	public	Planned	2011
Promotion of Auto-gas in transport	Soft	behavioural change and cleaner commuting	public	Planned	2011
Public transport reform and promotion.	Soft	behavioural change and more efficient commuting	public	Planned	2010
Promotion of more efficient vehicles and use of bicycles	Soft	behavioural change and more efficient commuting	public	Existing	Ongoing
Training & certification of installers	Soft	behavioural change	Installers	Planned	2010-2012

#### 4.2. Specific measures to fulfil the requirements under Articles 13, 14, 16 and Articles 17 to 21 of Directive 2009/28/EC

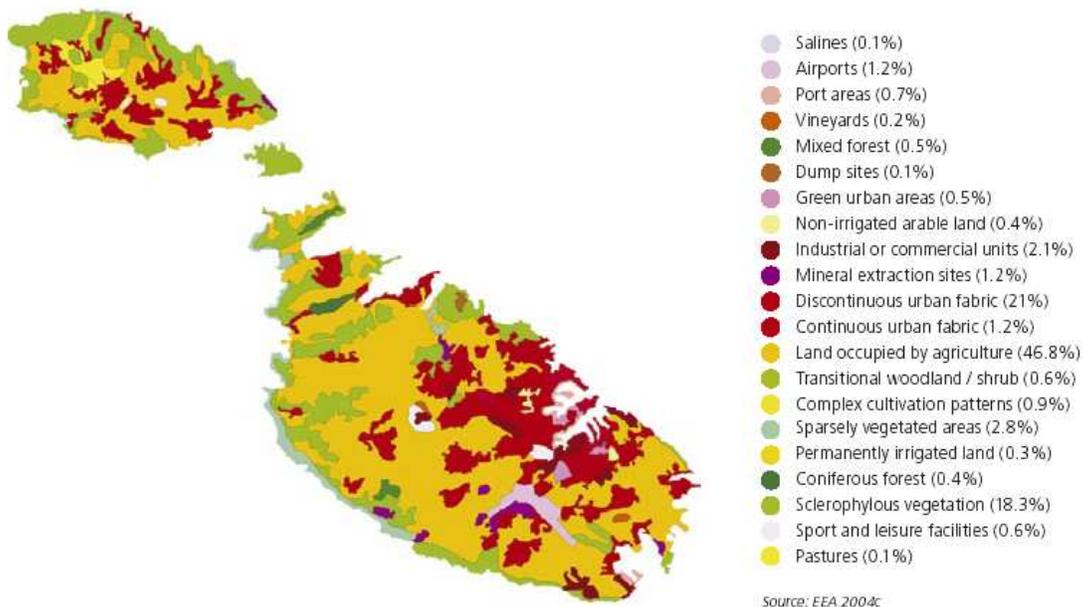
##### 4.2.1. Administrative procedures and spatial planning (Article 13(1) of Directive 2009/28/EC)

*When answering the following questions, Member States are requested to explain the current national, regional and local rules concerning the authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from*

renewable sources, and to the process of transformation of biomass into biofuels or other energy products. Where further steps are needed to ensure that procedures are proportionate and necessary, Member States are requested also to describe planned revisions, expected results and the authority responsible to carry out such revisions. When information is technology specific, please indicate it. When regional/local authorities have a substantial role, please also explain it.

(a) List of existing national and, if applicable, regional legislation concerning authorisation, certification, licensing procedures and spatial planning applied to plants and associated transmission and distribution network infrastructure:

As the Maltese islands only cover a territory of approximately 316 square kilometres, there is only one entity responsible for the planning and environment and spatial planning, the Malta Environment and Planning Authority (MEPA). Thus issues of spatial planning and environment permitting are not divided at regional levels.



The Malta Environment and Planning Authority has defined policies for development in specific zones. Special caution and requirements exist for areas defined as Outside Development Zones (ODZ). These requirements also apply to infrastructure requirements for the transmission of energy, these either being electricity, fuel or otherwise (Malta does not have a district heating infrastructure).

Developments must abide by the Development Notification Order of 2007 (LN115/07). However, to provide a simplified and less burdensome authorisation procedure, the Malta Environment and Planning Authority has issued a set of guidelines, the Development Control Policy and Design Guidance 2007, where some cases are exempted from applying for development permits. Subject to Article 4 of the Order, for alterations to existing buildings and development within the cartilage of buildings, the developer is not required to apply for a permit. The Malta Environment and Planning Authority has also recently issued a set of guidelines in relation to the installation of micro wind turbines for the generation of renewable electricity<sup>1</sup>.

Guidelines mainly address relatively small scale renewable energy installations, and provide less burdensome planning permits to the majority of the installations present and planned. The larger projects would need to follow an Environmental Impact Assessment procedure. Some of these procedures have already started and presently do not indicate any significant barriers.

Reference to the policies and guidelines may be found at the links indicated in the below table:

<b>Documentation</b>	<b>Web link</b>
Development Control and Design Guidance 2007 - Part 13 pg 100 - 102	<a href="http://www.mepa.org.mt/LpDocumentDetails?syskey= 655">http://www.mepa.org.mt/LpDocumentDetails?syskey= 655</a>
Central Malta Local Plan Policy CG 31 - Energy Conservation	<a href="http://www.mepa.org.mt/cmpl?doctypeid=1&amp;groupid=72&amp;plan=Central">http://www.mepa.org.mt/cmpl?doctypeid=1&amp;groupid=72&amp;plan=Central</a>
Gozo and Comino Local Plan Policy GZ -UTIL 4 - Renewable Energy	<a href="http://www.mepa.org.mt/gclp?doctypeid=1&amp;groupid=73&amp;plan=Gozo">http://www.mepa.org.mt/gclp?doctypeid=1&amp;groupid=73&amp;plan=Gozo</a>
North Harbours Local Plan NHTU 4 - Energy Conservation	<a href="http://www.mepa.org.mt/nhlp?doctypeid=1&amp;groupid=76&amp;plan=North">http://www.mepa.org.mt/nhlp?doctypeid=1&amp;groupid=76&amp;plan=North</a>
Harbour North West Local Plan NWPU 1 - Development of Renewable Energy	<a href="http://www.mepa.org.mt/nwlp?doctypeid=1&amp;groupid=77&amp;plan=North West">http://www.mepa.org.mt/nwlp?doctypeid=1&amp;groupid=77&amp;plan=North West</a>
South Malta Local Plan SMTO 01 - New Tourism Accommodation developments	<a href="http://www.mepa.org.mt/smlp?doctypeid=1&amp;groupid=78&amp;plan=South Malta">http://www.mepa.org.mt/smlp?doctypeid=1&amp;groupid=78&amp;plan=South Malta</a>
Qawra/Dwejra Action Plan	<a href="http://www.mepa.org.mt/LpDocumentDetails?syskey= 541">http://www.mepa.org.mt/LpDocumentDetails?syskey= 541</a>

<sup>1</sup> <http://www.mepa.org.mt/LpDocumentDetails?syskey= 1242>

For other technologies not defined in any guidelines the following planning permissions / procedures should be followed in line with the Order:

- The developer submits a proposal via a Project Description Statement (PDS) to the Malta Environment and Planning Authority.
- The proposal undergoes a screening process after which Malta Environment and Planning Authority decides whether the project requires an Environmental Impact Assessment (EIA).
- The scoping exercise follows.
- If the EIA is required, the Malta Environment and Planning Authority then sends the information to its consultees which are usually authorities (like the Malta Resources Authority) and NGOs. They are requested to draw up the Terms of Reference (TOR) that are required to be included in the Environmental Planning Statement (EPS). The EPS document is prepared by an entity which should have no conflict of interest with the project. These entities are registered consultants that prepare a voluminous document which should include all the comments made by the consultees. All the possible designs and alternatives to the project are discussed and assessed and finally the best option is selected as the recommended solution. The EPS is then sent to the consultees and is further analysed. If parts of the design do not conform to the consultees requirements a request is made for a revision which takes the form of an 'addendum' EPS. This process is repeated several times as necessary until the EPS conforms to all requirements.

After obtaining the necessary permits from the Malta Environment and Planning Authority (where applicable and necessary as explained above), the developer would then need to apply through the energy regulator, the Malta Resources Authority, for a licence to generate and supply energy.. The Electricity Regulations (LN511/04) defines that in case of a renewable source generation plant not exceeding a capacity of 16 amperes per phase, only a notification endorsed by a competent warranted electrical engineer is required and the system can be installed. This provides a fast track authorisation and grid connection procedure for relatively small grid connected renewable electricity systems.

However, for an installation with capacity exceeding 16 amperes on either of the phases, an authorisation to construct a generation plant must be applied for, through the Malta Resources Authority. This will also include the following criteria:

- the verification of the economic standing of the developer,
- the definition of the system and its controls,
- the planned construction and commissioning program,
- location,
- ancillaries,
- reporting obligations,
- system stability studies showing that the generation plant will not affect the security and
- stability of the grid network, connection offer from the D.S.O. and a power purchase undertaking.

Such requirements are requested prior to the purchase and construction of the system, in order to ensure that all issues are addressed and clarified by the developer at design and feasibility study phase. Once the system is authorised, constructed and commissioned, a license to generate electricity will be issued by the energy regulator, and the developer could then connect to the grid.

*(b) Responsible Ministry(/ies)/authority(/ies) and their competences in the field:*

- The Malta Environment and Planning Authority for planning permissions for development covering all Maltese territory.
- The Ministry for Resources and Rural Affairs in providing policy and promoting / proposing developments on public sites.
- The Land Registry in providing permissions for any development on public land.
- The Malta Resources Authority in authorising and licensing energy generation following consultation from the Distribution System Operator.

*(c) Revision foreseen with the view to take appropriate steps as described by Article 13(1) of Directive 2009/28/EC by: [date]*

- The inclusion of guidelines related to the installation of micro-wind turbines issued by the Malta Environment and Planning Authority issued on 31 May 2010.
- The issue of the Development Planning (Fees) Regulations (LN356/10) defining the charges related to development permits.
- The review of the administrative procedures by the Malta Environment and Planning Authority to provide less burdensome authorisation procedures through the ongoing Malta Environment and Planning Authority reform.
- Addressing the quality of fuels in respect to the production of local bio-diesel from waste vegetable oils. The Malta Standards Authority introduced a National Annex to EN 14214. Whilst the Annex was being drafted all potential market players were invited to voice their opinion. The Annex to MSA EN 14214 will be enforced in all upcoming legislation on biofuels related to the transposition of Directives 28 and 30 of 2009.

*(d) Summary of the existing and planned measures at regional/local levels (where relevant):*

As described in (a) there are no regions defined, but all the territory is administered by Malta Environment and Planning Authority. The island of Gozo has been identified as an eco-island. The Ministry for Gozo, in collaboration with Local Councils, is adopting

measures in energy efficiency and renewable energy resources installations. Other measures related to the improvement of the environment are also being carried out. Most of the Local Councils are participating in the Covenant of Mayors, and it is expected that the island of Gozo will be a benchmark for renewable and energy efficiency applications.

*(e) Are there unnecessary obstacles or non-proportionate requirements detected related to authorisation, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling from renewable sources, and to the process of transformation of biomass into biofuels or other energy products? If so, what are they?*

For small renewable energy technologies mainly integrated in urban areas, the guidelines and licensing procedures defined are quite sufficient.

Land use in Malta is a concern since due to the relatively high population density developments tend to influence directly a large percentage of the population. Complications may surface throughout the consultation process, including the EIA of the Planning Authority, mainly due to conflict on the use of the selected site resources and due to environmental impact concerns affecting the activities and ecology of the neighbourhood.

It is not envisaged that land use is assigned for the production of biomass and its derivative biofuels or other energy products, as the available agricultural land hardly provides the necessary production for the local food demand.

*(f) What level of administration (local, regional and national) is responsible for authorising, certifying and licensing renewable energy installations and for spatial planning? (If it depends on the type of installation, please specify.) If more than one level is involved, how is coordination between the different levels managed? How will coordination between different responsible authorities be improved in the future?*

- The Malta Environment and Planning Authority is responsible for planning permissions for development.
- The Malta Resources Authority in authorising and licensing energy generation.

The authorities and entities mentioned collaborate between each other. In cases of developments requiring a permit, the process defined in (a) needs to be implemented through the Malta Environment and Planning Authority. Energy related developments will involve both the Malta Resources Authority and Enemalta Corporation in the consultation process. During this process, the developer is required to apply for an authorisation to construct a generation plant as indicated in (a) which will lead to the authorisation and the licensing of the plant. The authorisation process within the Malta Resources Authority, provides a consultation process with the Distribution System Operator through the provision of standard requests.

*(g) How is it ensured that comprehensive information on the processing of authorisation, certification and licensing applications and on assistance to applicants made available? What information and assistance is available to potential applicants for new renewable energy installations on their applications?*

Information and guidance notes are available online on the Authorities' websites and guidance is given by technical personnel through phone queries and meetings. In the case of grant schemes for the promotion of renewable energy sources and energy efficiency, instructions and related information are further defined through Government Notices published on the Government Gazette, and/or advertised on the local newspapers.

e.g. <http://www.mra.org.mt/Support%20Schemes.shtml>

*(h) How is horizontal coordination facilitated between different administrative bodies, responsible for the different parts of the permit? How many procedural steps are needed to receive the final authorisation/licence/permit? Is there a one-stop shop for coordinating all steps? Are timetables for processing applications communicated in advance? What is the average time for obtaining a decision for the application?*

The steps required for the issue of a development permit may be viewed at: <http://www.mepa.org.mt/permitting-ea-eiaprocess>

The following are the timelines of the main steps of an EIA process in accordance with the EIA Regulations:

- Screening: 4 weeks from the submission of the Project Description Statement;
- Scoping: 21 days consultation with Government agencies, NGOs, public and Local Councils. After which the EIA terms of reference are issued by Malta Environment and Planning Authority;
- Review of ES documentation: 30 days (this also includes consultation with Government agencies, NGOs and Local Councils);
- The ES documentation is made public after it is certified that the ES documentation is in line with the terms of reference. A 21 day consultation period with the public follows. In case of Category I projects, a public hearing/meeting is held in the locality in which the development is being proposed. The public is invited to submit any additional comments until 7 days from the date of the public hearing/meeting.

For grid connected systems, in the case of small systems requiring only a notification to the energy Regulator, (as per LN511/04), the producer needs to submit a notification form to the energy regulator previously endorsed by a warranted engineer. Once the notification is vetted and approved by the Regulator, the auto-producer has to apply with the Distribution System Operator for the connection of the renewable energy sources generator to the grid which step also includes the provision of the necessary metering by the Distribution System Operator.

In the case of renewable energy sources generators requiring an authorization and a license, an authorisation to construct the generator has to be submitted to the energy regulator. The Regulator consults with the Distribution System Operator regarding issues related to grid stability, connection and power purchase agreements. Following the consultation with the Distribution System Operator, the Regulator grants the authorization to the developer to construct the generator. When the generator is installed and commissioned the developer needs to inform the Regulator, who proceeds to issue a license for the developer to operate the generator. The developer then applies with the Distribution System Operator for the physical connection to the electric grid.

*(i) Do authorisation procedures take into account the specificities of the different renewable energy technologies? If so, please describe how. If they do not, do you envisage taking them into account in the future?*

The authorisation procedures for different technologies are quite similar, differentiated by capacity of generation. However, the requirements for the processing of authorisations of different renewable energy technologies vary as each technology requires different technical requirements which need to be evaluated.

*(j) Are there specific procedures, for example simple notification, for small-scale, decentralised installations (such as solar panels on buildings or biomass boilers in buildings)? If so, what are the procedural steps? Are the rules publicly available to citizens? Where are they published? Is the introduction of simplified notification procedures planned in the future? If so, for which types of installation/system? (Is net metering possible?)*

There is a simplified procedure for small grid connected renewable energy sources as described in section 4.2.1 (a) delimited by the capacity of 16 amperes per phase.

*(k) Where are the fees associated with applications for authorisation/licences/permits for new installations published? Are they related to the administrative costs of granting such permits? Is there any plan to revise these fees?*

So far there are no fees charged with regard to notifying and requesting authorisation and licenses from the energy regulator. However, when applying with the Distribution System Operator there are fees related to the administrative services and the provision of connection and power metering. These are published on the application form: <http://www.enemalta.com.mt/filebank/documents/App%20PV-.pdf>

*(l) Is official guidance available to local and regional administrative bodies on planning, designing, building and refurbishing industrial and residential areas to install equipments and systems using renewable energy sources in electricity and heating and cooling, including in district heating and cooling? If such official guidance is not available or insufficient, how and when will these need be addressed?*

The official guidelines are governed by the Energy Performance of Buildings Regulations (LN261/08) with special reference to Technical Guidance F:  
[http://www.mra.org.mt/Downloads/Publications/TechGuid\\_F.pdf](http://www.mra.org.mt/Downloads/Publications/TechGuid_F.pdf)

Such guidance may need to be reviewed in line with the recent EU Decision on the reduced carbon footprint of buildings.

*(m) Are there specific trainings for case handlers of authorisation, certification and licensing procedures of renewable energy installations?*

The Malta Resources Authority, the regulator issuing authorisations, certificates and licenses is a member of MEDREG (Mediterranean Regulators). The Florence School of Regulation, which is a subcontractor of MEDREG, provides frequent training in this sector. The Malta Resources Authority has participated on several occasions.

In the coming months, courses will be organised with certifying bodies to have certified installers of Renewable Energy systems. Priority is being given to Photovoltaic and Solar thermal systems as these are mostly diffused. A list of certified installers will then be put online on the website of the Malta Resources Authority

#### **4.2.2. Technical specifications (Article 13(2) of Directive 2009/28/EC)**

*(a) To benefit from support schemes do renewable energy technologies need to meet certain quality standards? If so, which installations and what quality standards? Are there national, regional standards that go beyond European standards?*

Since 2010, renewable energy technologies which formed part of support schemes for the domestic sector, namely solar water heaters, solar collectors, and photovoltaic systems, had to be registered with the Malta Resources Authority. The equipment has to conform to the standards set out in the Government Notice 52 of 2010. Solar water heaters must conform to EN-12976 or the Solar Keymark certification, solar collectors to EN-12975 or the Solar Keymark certification and photo-voltaic panels to the standards EN-61215 or EN-61646.

The Malta Resources Authority encourages other entities issuing support schemes to request that products conform to standards set out in GN 52 of 2010 to ensure that high quality products are promoted through the support schemes.

#### **4.2.3. Buildings (Article 13(3) of Directive 2009/28/EC)**

*Please note that when referring to increasing the use of renewable energy sources in buildings, the supply of renewable electricity from the national grid should not be considered. The focus here is on increasing local supply of heat and/or electricity to individual buildings. The direct supply of heat or cooling through district heating and cooling in buildings could also be taken into account.*

*(a) Reference to existing national and regional legislation (if any) and summary of local legislation concerning the increase of the share of energy from renewable sources in the building sector:*

New buildings and buildings that undergo major renovation or change of use have to comply with the Energy Performance of Buildings Regulations (LN261/08) which transposes EU Directive 2002/91/CE on the Energy Performance of Buildings. This legislation addresses the minimum requirements in buildings found in Technical Guidance Document F, Conservation of Fuel, Energy and Natural Resources (Minimum Requirements on the Energy performance of Buildings Regulations, 2006). Technical Guidance Document F does not indicate a minimum requirement of energy deriving from renewable energy sources, though there are plans that such minimum requirements are reviewed to include such technologies.

*(b) Responsible Ministry(/ies)/authority(/ies):*

The Ministry responsible for the requirements and the strategy in the improvement of end use efficiency and renewable sources in buildings is the Ministry for Resources and Rural Affairs.

*(c) Revision of rules, if any, planned by: [date]*

No revision is as yet being planned for the Energy Performance of Buildings Regulations (LN261/08).

*(d) Summary of the existing and planned measures at regional/local levels:*

The Government has taken the initiative to assign green leaders in respective departments. Their main aim is to address energy efficiency measures in public buildings and to provide awareness and practical solutions to the personnel in the public service to reduce energy consumption.

The Ministry for Resources and Rural Affairs has also initiated training courses for qualified personnel as engineers and architects to become energy auditors. These auditors are performing walk-through audits in public buildings assisted by the residential green leader. They will formulate the actual consumption of the public buildings and recommend improvements in energy efficiency.

Within the requirements of EU Directive 2002/91/CE, the same Ministry, through the Buildings Regulation Office, have also initiated the training of qualified professionals as engineers and architects, to certify new and renovated residential buildings. So far 12 courses which will eventually certify 162 assessors have been completed. A similar course for certification will be set up shortly to address non-residential buildings.

*(e) Are there minimum levels for the use of renewable energy in building regulations and codes? In which geographical areas and what are these requirements? (Please summarise.) In particular, what measures have been built into these codes to ensure the share of renewable energy used in the building sector will increase?*

*What are the future plans related to these requirements/measures?*

As yet the code does not address directly the inclusion of a share of renewable resources in the energy scheme of the buildings. However, uptake through promotional schemes so far introduced has addressed the inclusion of renewable energy sources directly in buildings, either through domestic water heating using solar technologies or electricity generation from roof installed photo-voltaic systems or micro-wind generators.

Some further studies and pilot projects are ongoing in the evaluation of ground water as low grade geothermal heat pumps. Since in Malta the geothermal gradient is quite low, such systems will mostly provide a more efficient heat pump than an aero thermal substitute. Given that cooling loads prevail in our Mediterranean climatic environment, the contribution of such technologies will provide only minimal contribution to the renewable energy sources target. More efficiency during cooling would still induce less energy requirements. Presently heat pumps through air-conditioning systems only contribute towards the efficient generation of heat.

A study entitled “Analysis of the potential for co-generation in Malta”<sup>2</sup> for the feasibility of co-generation has also been done and submitted to EU commission. This indicated that in some applications co-generation provides benefits. However, again in this case co-generation is more an energy efficiency measure rather than a renewable energy source except for the share of renewable primary energy fuel which might be utilised. A mechanism to promote the use of co-generation equipment is being planned.

*(f) What is the projected increase of renewable energy use in buildings until 2020? (If possible differentiating between residential — ‘single-unit’ and ‘multiple unit’, commercial, public and industrial.) (To answer this question you may use a table as Table 6 below. Data could be given yearly, or for selected years. Both heating and cooling and electricity consumption from renewable energy sources should be included.)*

*Table 6*

**Estimated share of renewable energy in the building sector (%)**

	2010	2015	2020
Thermal RES	0.65	0.73	0.85
Grid Connected RES	0.15	0.77	0.85
Total	0.8	1.5	1.7

<sup>2</sup> [http://www.mra.org.mt/library\\_publications.shtml](http://www.mra.org.mt/library_publications.shtml)

*(g) Have obligations for minimum levels of renewable energy in new and newly refurbished buildings been considered in national policy? If so, what are these levels? If not, how will the appropriateness of this policy option be explored by 2015?*

Existing physical and/or technological barriers and/or constraints limit the possibility of introducing obligatory requirements for renewable energy technologies in the new and newly refurbished buildings. Such introduction of RES in building stock is voluntary, though strongly encouraged by the Government and positive measures to encourage it are applied.

Barriers do exist in the integration of renewable energy sources in buildings. Traditionally roofs of buildings in the Maltese Islands are of the flat type construction and people are accustomed to use them for various applications. In a Domestic Solar Water Heating survey for Maltese households conducted in 2010 by the Ministry for Resources and Rural Affairs and the Institute for Sustainable Energy<sup>3</sup>, the majority of the people who participated in the survey stated that their roof space is mostly used for leisure activities and for hanging clothes (81%). On the other hand, very few of the survey participants (28.5%) find the using of the roof space for the installation of PVs and SWHs in competition with its use for leisure and clothes hanging applications. Roof areas are also exploiting the natural potential of wind and solar energy by serving as an energy efficient method for drying washed laundry otherwise requiring a high amount of energy for electric dryers. The above does not however preclude the introduction of minimum levels of renewable energy for standalone/detached buildings that through planning regulations their roofs cannot be utilised for the purposes indicated above. The same requirements can be extended for all other buildings by the imposition of a percentage area of roof space to be dedicated for renewable energy sources. Studies on these issues are being contemplated.

The majority of the survey participants (78.8%) stated that they are aware of the benefits that the installation of SWHs in their households can bring, however a number of misconceptions exist among the local population that is reflected in this survey. When asked about the cost of a SWH, only 34.7% selected the realistic cost range for a SWH thereby implying that the majority of the population think that a SWH is much more expensive than it really is. This incorrect knowledge, results in a general perception that the payback period is longer than it actually is hence the general public is discouraged in investing in such an appliance.

The dense population and building cluster is a concern for wind generation in urban areas, due to any noise level nuisance of the equipment and to the fact that the generation yield is very sensitive to the available wind resources, which are quite difficult to estimate due to the various environment and surrounding terrain. A case by case analysis is required prior to the development in order to ensure feasibility and a wind measuring campaign is costly and requires time.

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<sup>3</sup> This Study has been presented to the European Commission when Malta applied for the Structural Funds for Solar Water Heaters in 2010.

Historically, the allocation of building areas was determined by the area of the plot of the land purchased. In Malta, such plots of land tend to be quite small and irregular in shape due to multiple subdivisions arising from local inheritance patterns which require the subdivision of land between all off-springs. Implicitly, plots do not necessarily have the ideal geometric shape and orientation for an optimal energy and comfort design of the building. Building site allocation has been determined by access roads, normally adjusted but superimposed over a narrower passage way which previously provided access from one property to the other, passing amidst the irregular boundaries of land properties, again the result of a hundreds of years of irregular sub-divisions of land and commensurate access rights. Geometry and orientation were not a priority. Narrow, winding alleys/streets typical of Maltese towns and villages, although serving as an efficient cooling measure in hot summer periods limits the efficiency of solar capturing equipment.

In more modern urban areas, due to the ever increasing scarcity of land which may be developed, the tendency is to go to high-rise apartments. Standard two floor residences are demolished and reconstructed into multi-storey apartments depending on the height limit defined for the zone in question by the Planning Authority. This tendency creates several barriers to the integration of renewable energy sources technology, both solar energy or wind capturing.

Wind energy harvesting applications may be easily jeopardised following a nearby reconstruction activity of a building up to an influencing height, being it windward or leeward of the most common prevailing winds.

Solar applications have various issues of concern. The installation of SWHs and PVs have long payback periods, thus the general public does not feel confident to invest in such technologies when faced with uncertainties on changes that may result in building heights of adjacent properties. Changes in building height limitations made in recent years have created a degree of uncertainty about of the possibility of similar changes in the near future (especially in view of forthcoming reviews of development plans); changes which could allow higher adjacent buildings which would cast a shade on solar collection appliances. In view of the long timeframes required for the recovery of the initial capital cost, these uncertainties are making investments in solar-collection appliances unattractive. Some contractual arrangements do not permit tenants of the same apartment block to have access to the roof space, as this may be owned by third parties. In most cases the top apartment is a penthouse which will have most of its roof utilised as dwelling space as a terrace. Hence solar applications can only be exploited by the owner of the air space whenever possible. Solar thermal applications also induce other technical barriers. As the piping distance from the hot water reserve tank for thermo siphon systems on the roof to the demanding point, for instance 4 floors below, is considerably long, there would be a considerable waste of valuable potable water until the heated water purges the pipe system. A more elaborated and more expensive controlled pumped solar water system would need to be adopted in such cases. Solar thermal water heating also requires the adaptation of hot water consumption patterns and habits, as ideally such resource is to be exploited in the evening rather than early in the morning. This would

require a cultural change, which may be difficult to achieve among older generations used to a particular life-style. Notwithstanding the above mentioned problems Government will be studying the possibility of introducing planning regulations to enable the introduction of renewable energy measures in all new buildings and in certain cases of refurbishment of buildings.

The Energy Performance Building Directive Recast will in place by 2012. This will include new regulations and transpositions for more energy efficient systems to reduce energy demands of the existing stock of buildings and the new buildings to be developed.

In addition, the Government itself is leading by example. The Foundation for Tomorrow's Schools is carrying out projects in the refurbishing of schools and the development of new colleges for pupils with the aim of utilizing renewable energy sources for a quasi-autonomous energy requirement, as is the case of a college in Pembroke, Qormi, Cospicua and Kirkop. A PV installation capacity of 21KWp has been installed in Pembroke and that of 6.8KWp have been installed at each of the schools in Qormi, Cospicua and Kirkop which in total are estimated to produce 70.4MWh annually from photovoltaic system installations. This will further provide awareness and promote the advantages and use of renewable energy sources to the new generations. WasteServ provides another example where the solid waste treatment plant implemented has incorporated the facility of producing energy for circa 1400 homes from the waste being treated.

In addition the Government is constantly looking into means how to incentivise agricultural and industrial holdings where the potential for renewable energy is more promising. This is due to the larger areas available in this sort of establishments.

Currently data is being compiled to quantify what share of energy is coming from renewable energy sources in the domestic sector. Based on this result, it can also be identified how the grants given in the relevant schemes have contributed to such values. Once this is analysed, a way forward needs to be defined to create a higher demand for renewable energy sources in the domestic sector, including, possibly and without prejudice to future decisions, the obligation for minimum levels of renewable energy.

*(i) How are energy efficient renewable energy technologies in buildings promoted? (Such measures may concern biomass boilers, heat pumps and solar thermal equipment fulfilling eco-label requirements or other standards developed at national or Community level (cf. text of Article 13(6))).*

In 2006, the Government provided a rebate on energy efficient domestic appliances. The scheme was carried out till 2008 by which time the public was aware of the benefits of purchasing an energy efficient appliance as compared to a normal cheaper less efficient appliance. The market requirements for energy efficient appliances continued to grow in the light of the increase in the cost of energy. This has led to the removal of less efficient appliances from the local market.

With regard to renewable energy sources, residential grant schemes which contribute to most present installations in residential buildings require that the technologies eligible for

the schemes must comply with specific standards and certification. Such requirement will ensure that suppliers will only provide material which is up to EU standards. This reduces the risk of getting bad promotion on a particular technology in case of premature failures or disappointed performance. There is also the requirement that the installation of such systems is properly implemented. This latter will be reinforced by the obliged training for certification of installers as required by the Renewable Energy Sources Directive. Such measure will ensure that the maximum benefit of the technology is achieved through an appropriate, sound and reliable installation.

#### **4.2.4. Information provisions (Articles 14(1), 14(2) and 14(4) of Directive 2009/28/EC)**

*Current and future information and awareness raising campaigns and programmes, as well as planned revisions, and expected results have to be described. Member States should also indicate which responsible authority will monitor and review the effects of the programmes. When regional/local authorities have a substantial role, please also indicate and summarise it.*

*(a) Reference to existing national and or regional legislation (if any) concerning information requirements according to Article 14 of Directive 2009/28/EC:*

Various Government bodies and NGO's are drafting plans to carry out information and awareness raising campaigns regarding energy saving, energy efficiency and information about renewable energy technologies. In the last few years, the Malta Resources Authority administered various educational campaigns on behalf of the Government of Malta to promote energy efficiency and renewable energy. These included grants on the purchase of energy efficient domestic appliances, on the purchase of solar water heaters, photovoltaic systems, roof insulation, double glazing, domestic wind turbines and electric cars. Another scheme included the distribution of free compact fluorescent lamps to all households in Malta and Gozo. An educational campaign on measures to save energy and water was carried out by the Office of the Prime Minister. The Malta Enterprise has also conducted campaigns and promotion complimented with energy auditing in the industrial sector.

One legislation addressing energy matters in buildings is the Energy Performance of Buildings Regulations (LN261/08)

*(b) Responsible body/(ies) for dissemination of information at national/regional/local levels:*

Various Government authorities conduct educational campaigns on energy efficiency and renewable sources of energy, co-generation and energy-management. A campaign already launched nation wide is the "Switch" campaign. (refer to link: <http://www.mrra.gov.mt/news.aspx?nid=1753> and <http://www.mrra.gov.mt/news.aspx?nid=916>)

The Building Regulation Office (BRO) of the Ministry For Resources and Rural Affairs have issued a Technical Guidance Document enforcing the Energy Performance of Buildings Regulations (LN261/08) that gives planners, architects and engineers guidance on how new buildings can reach minimum requirements in energy performance set for buildings in Malta. Officials from the BRO participate regularly on TV and radio programs on matters dealing with this subject and the BRO has a regular slot of 1hr every fortnight on a local radio station to inform and reply to questions by the general public on such issues. Apart from this the BRO in collaboration with the Building Industry Consultative Council has organised a number of talks for planners, architects and engineers on this subject. Similar talks and seminars are also organised by the Chamber of Engineers and the Kamra tal-Periti (Chamber of Architects).

Other main entities involved are the Malta Resources Authority, the Malta Enterprise, the Foundation for Tomorrow's Schools, the Institute for Sustainable Energy, the Malta Council of Science and the Malta Intelligent Energy Management Agency.

*(c) Summary of the existing and planned measures at regional/local levels (where relevant):*

The information/educational campaign carried out by the Malta Resources Authority will contribute to mitigation and the adaptation to climate change, enhance knowledge, explore the potential for RES and promote electricity produced from RES.

To promote the use of biofuels and energy resulting from renewable energy in the transportation sector, the Malta Resources Authority will work together with Transport Malta to introduce a substitution obligation for biofuels and to further promote the uptake of electric cars.

*(d) Please indicate how information is made available on supporting measures for using renewable energy sources in electricity, heating and cooling and in transport to all relevant actors (consumers, builders, installers, architects, suppliers of relevant equipment and vehicles). Who is responsible for the adequacy and the publishing of this information? Are there specific information resources for the different target groups, such as end consumers, builders, property managers, property agents, installers, architects, farmers, suppliers of equipment using renewable energy sources, public administration? Are there information campaigns or permanent information centres in the present, or planned in the future?*

Announcements related to supporting measures are normally made public during state budget speeches. Information is published through Legal Notices and made also available on the Malta Resources Authority's website in case of campaigns addressed to the residential sector or on the Malta Enterprise website in case of campaigns addressing industry. Other schemes may also be made available through other entities and would not exclude Government itself. These will also be communicated to the different sectors through their relevant associations. Communication of this information can also be made

through articles printed in the media, by features on television and by meetings/conferences/workshops with different target groups.

Certified bodies, approved by the Malta Resources Authority, are planning to organize courses leading to certification of installers of equipment using renewable energy sources.

The Malta Resources Authority is also planning to organize a nation wide campaign to promote energy efficiency and renewable energy amongst members of the public. This campaign will be carried out through adverts and articles published in the media, the distribution of an information booklet to all households in Malta and Gozo and through the participation in fairs. The Malta Resources Authority will be carrying out a survey to see the perception of the Maltese public about renewables and energy efficiency. The survey will be carried at the beginning of the education campaign and at the end, in order to monitor the success of the same campaign.

*(e) Who is responsible for publishing information on the net benefits, costs and energy efficiency of equipment and systems using renewable energy sources for heating, cooling and electricity? (Supplier of the equipment or system, public body or someone else?)*

It is the responsibility of the supplier of the equipment or system to publish such information. However, as a further guidance, papers are published by members of the Institute for Sustainable Energy and University researchers regarding benefits of energy efficient equipment and renewable technologies.

To ensure the quality and benefits of such equipment, the Malta Resources Authority has been registering solar water heaters, PV systems, roof insulation and double glazing, that meet EU standards. Only this equipment is being made eligible for any financial grants.

*(f) How is guidance for planners and architects provided to help them to properly consider the optimal combination of renewable energy sources, high efficiency technologies and district heating and cooling when planning, designing, building and renovating industrial or residential areas? Who is responsible for that?*

Currently the investigations and studies of benefits from renewable energy and energy efficiency equipment are being carried out and queried to various technical institutions as for example, the University of Malta, the Institute for Sustainable Energy, members of the Malta Energy Efficiency and Renewable Energies Association, the Malta Resources Authority, Malta Council for Science and Technology for research and innovation, the Buildings Regulations Office with regards to building energy requirements and the local energy agency the Malta Intelligent Energy Management Agency (MIEMA).

The Malta Intelligent Energy Management Agency (MIEMA) is Malta's first energy agency, set up in June 2007, with the support of the IEE Programme and a wide array of public institutions including the Ministry for Tourism, the Ministry for Resources and

Rural Affairs , The Ministry of Finance, Economy and Investment and Local Councils,. Its aims are in line with those of other IEE supported Energy Agencies and as such it aims to be a protagonist of the European effort towards a more intelligent use of energy resources; promoting awareness initiatives and contributing to define incisive and targeted proposals and policies of intervention, in order to optimise the use of conventional energy resources and to develop renewable sources

The Agency's activities are initially focused on local needs, such as the energy practices of the tourism industry, while building on local success stories like that of the use of bio fuels. MIEMA is also planning to co-ordinate and provide training to installers of photo-voltaic and similar intelligent energy systems and to organize seminars and information days. It intends to foster and conduct research in the field, through collaboration with the University of Malta, and to disseminate information and raise awareness on the importance of managing energy. This sort of synergistic networking will ensure the success of the Agency and will be another step in ensuring that Malta reaches its target commitments for the use of greener energy sources.

Activities programmed for the next three years include:

- Energy planning
- Green certificates
- Energy certification of buildings
- Energy saving on public lighting
- Studies to address the energy needs of industrial parks and micro-enterprises
- Studies to address the energy needs of tourism establishments
- Promotion of the use of bio-fuels and related projects (e.g., marine algae project)
- Dissemination of information about renewable sources at local and national levels

*(g) Please describe the existing and planned information, awareness raising and training programmes for citizens on the benefits and practicalities of developing and using energy from renewable sources. What is the role of regional and local actors in the designing and managing these programmes?*

Presently it is the Building Regulations Office that organises courses for engineers to qualify as energy auditors. Certified bodies, approved by the Malta Resources Authority, are planning to organise courses to have competent certified installers of equipment making use of renewable energy. A list of the competent certified installers will be put online on the website of the Malta Resources Authority. Several Local Councils have signed the Covenant of Mayors where they are bound to lead their community to reach and if possible surpass the Renewable Energy targets set for 2020. Each council is working separately to achieve their goals.

#### **4.2.5. Certification of installers (Article 14(3) of Directive 2009/28/EC)**

*(a) Reference to existing national and/or regional legislation (if any) concerning certification or equivalent qualification schemes for installers according to Article 14(3) of the Directive 2009/28/EC:*

Installation of grid connected electricity generation coming from renewable sources requires the endorsement of a warranted electrical engineer taking responsibility for the electrical installation works.

*(b) Responsible body/(ies) for setting up and authorising certification/qualification schemes by 2012 for installers of small-scale biomass boilers and stoves, solar photovoltaic and solar thermal systems, shallow geothermal systems and heat pumps:*

The responsibility of setting up and providing certification for renewable sources installation shall be in the remit of the energy regulator, the Malta Resources Authority. However, since the authority is not an accredited body for training, the training and examinations will be done through training accredited bodies, such as the University of Malta and other local colleges.

*(c) Are such certification schemes/qualifications already in place? If so, please, describe.*

At the moment, the certification schemes are being set up and discussed with faculties within the University of Malta and the Malta College of Arts Science and Technology. Courses will start addressing installers of Solar Water Heating equipment and Solar Photo-voltaic systems as these are the most wide spread technologies requiring a quick address to ensure that such installations will provide the benefits expected.

*(d) Is information on these schemes publicly available? Are lists of certified or qualified installers published? If so, where? Are other schemes accepted as equivalent to the national/regional scheme?*

Since the courses are still at the setup phase such lists information is not yet available to the public. However, once certified, installers will be issued with a certificate, and their records recorded at the competent authority.

*(e) Summary of existing and planned measures at regional/local levels (where relevant).*

Courses will be held to train and certify installers in solar water heating equipment as well as in solar photo-voltaic system. Further courses will follow for small-scale biomass boilers or stoves, low grade geothermal and heat pump technologies, as these applications will become more common.

#### **4.2.6. Electricity infrastructure development (Article 16(1) and Article 16(3) to (6) of Directive 2009/28/EC)**

*Besides the current situation and already existing legislation future actions, planned revisions, responsible bodies for it and expected results have to be described.*

*(a) Reference to existing national legislation concerning requirements related to the energy grids (Article 16):*

The current regulations relating to the energy grids are:

- The Electricity Regulations (LN 511/04)
- Electricity Supply Regulations (GN223 of 1940);
- The Network Code.

*(b) How is it ensured that transmission and distribution grids will be developed with a view to integrating the targeted amount of renewable electricity while maintaining the secure operation of the electricity system? How is this requirement included in the transmission and distribution operators' periodical network planning?*

The distribution system operator is obliged to take into consideration, among other factors, distributed generation that might supplant the need to upgrade or replace electricity capacity when planning the development of the distribution network. The distribution operator submits grid investment plans to Parliament for approval of the budget on a yearly basis.

The major renewable electricity generators have already been taken in account in the grid development investment plans. The electricity interconnection with Europe through a connection with the electricity grid in Sicily is expected to provide the necessary reliability and balancing facility in the electricity grid to enable the efficient and secure operation of the planned wind farm capacity.

Other decentralised relatively smaller renewable electricity sources which are expected to be quite higher in numbers and distributed over the whole territory closer to the electricity load are not expected to present any particular issues for connection given that the grid covers most of the Maltese territory.

*(c) What will be the role of intelligent networks, information technology tools and storage facilities? How will their development be ensured?*

The distribution system operator has already embarked on a Nation wide project to install smart meters on every connection with the network which will provide distributed intelligence and easier monitor at individual level of the consumption patterns and demand. A National SCADA system covering the network above 11kV is also being implemented. These projects are expected to be completed by 2012. Currently there are no plans for storage systems.

*(d) Is the reinforcement of the interconnection capacity with neighbouring countries planned? If so, which interconnectors, for which capacity and by when?*

As indicated earlier the implementation of a HVAC 225MW sub-sea interconnector to Sicily has commenced and the expected completion date is 2013.

*(e) How is the acceleration of grid infrastructure authorisation procedures addressed? What is the current state and average time for getting approval? How will it be improved? (Please refer to current status and legislation, bottlenecks detected and plans to streamline procedure with timeframe of implementation and expected results.)*

In Malta network development mostly takes place through underground cables mainly through roads. The procedures for permitting of the works vary in time depending on the nature, location and voltage. The distribution operator may require a development permit from the planning Authority and a permit from the competent authority for transport. The increasing use of underground tunnels as opposed to direct trenching in public roads is leading to increased lead times which currently average from 1.5 to 2 years over the average of 10 months required for getting works approval for trenching.

*(f) How is coordination between grid infrastructure approval and other administrative planning procedures ensured?*

The development or upgrading of the grid infrastructure follows the same planning procedures of other developments discussed earlier. With regards to the grid infrastructure approval for the connection of a renewable generation station, during the project development stage permit application the Malta Environment and Planning authority (MEPA) consults with the energy regulator, the Malta Resources Authority and the grid operator Enemalta Corporation on all medium and large scale developments. Once the application of the authorisation to construct the generating plant is submitted to the Malta Resources Authority with the specific technical details, this Authority in turn consults with the Distribution System Operator, Enemalta Corporation, with regards to the detail of the connection requirements, and eventually issues the authorisation approval.

*(g) Are priority connection rights or reserved connection capacities provided for new installations producing electricity from renewable energy sources?*

Legal Notice 186/2004 on The Promotion of Electricity Produced from Renewable sources Regulations (LN186/04) and which relevant part is being superseded by the Electricity Market Regulation, still under consultation, provides priority access to the grid-system of electricity produced from renewable energy sources and priority of dispatch in so far as the secure operation of the national grid permits.

*(h) Are any renewable installations ready to come online but not connected due to capacity limitations of the grid? If so, what steps are taken to resolve this and by when is it expected to be solved?*

At present there are no issues related to installations pending connection due to the requirement of a grid connection upgrade.

*(i) Are the rules on cost sharing and bearing of network technical adaptations set up and published by transmission and distribution system operators? If so, where? How is it ensured that these rules are based on objective, transparent and non-discriminatory criteria? Are there special rules for producers located in peripheral regions and regions with low population density? (Cost bearing rules define which part of the costs is covered by the generator wishing to be connected and which part by the transmission or distribution system operator. Cost sharing rules define how the necessary cost should be distributed between subsequently connected producers that all benefit from the same reinforcements or new lines.)*

To date, the applications received by the distribution system operator for connection of renewable energy generators to the grid concerned cases where an adequate connection to the grid was already available. As a norm in cases where the connection of a generator requires a new connection or an upgrade of an existing connection the developer will be required to finance the connection in whole. The same methodology and fees established in the Electricity Supply Regulations to connect a consumer to the grid would be applicable to determine the cost of the connection. The cost sharing rules for the sharing of costs when reinforcement of the grid is necessary to integrate the renewable energy sources generator are under discussion.

*(j) Please describe how the costs of connection and technical adaptation are attributed to producers and/or transmission and/or distribution system operators? How are transmission and distribution system operators able to recover these investment costs? Is any modification of these cost bearing rules planned in the future? What changes do you envisage and what results are expected? (There are several options for distributing grid connection costs. Member States are likely to choose one or a combination of these. According to the 'deep' connection cost charging the developer of the installation generating electricity from renewable energy sources bears several grid infrastructure related costs (grid connection, grid reinforcement, and extension). Another approach is the 'shallow' connection cost charging, meaning that the developer bears only the grid connection cost, but not the costs of reinforcement and extension (this is built into the grid tariffs and paid by the customers). A further variant is when all connection costs are socialised and covered by the grid tariffs.)*

As explained in (i) applications for connection of renewable energy generators received by the DSO so far concerned cases where an adequate service connection was already available on site.

*(k) Are there rules for sharing the costs between initially and subsequently connected producers? If not, how are the benefits for subsequently connected producers taken into account?*

These rules are being addressed in the Electricity Supply Regulations being currently reviewed and consulted with the Distribution System Operator, by the energy Regulator the Malta Resources Authority. These Regulations are planned to be finalised by the end of 2011

*(l) How will it be ensured that transmission and distribution system operators provide new producers wishing to be connected with the necessary information on costs, a precise timetable for processing their requests and an indicative timetable for their grid connection?*

The majority of such connection requests will derive from a high number of relatively small grid connected renewable electricity suppliers. In such cases, there are standard procedures and fees as currently defined in the Electricity Supply Regulations (SL 423.01).

For the minor number (having larger capacities), such requests are to be done to the sole electricity distributor in Malta, Enemalta Corporation, which in turn will investigate the connection requirements and provide a quotation of costs and an indicative connection time plan. The developer has also the possibility of entrusting the laying of the cable and protection requirements to a subcontractor of own choice subject to the specification requirements set by Enemalta Corporation. These requests are subject to the Electricity Supply Regulations and the Network Code where applicable.

#### **4.2.7. Electricity network operation (Article 16(2) and Article 16(7) and (8) of Directive 2009/28/EC)**

*(a) How is the transmission and distribution of electricity from renewable energy sources guaranteed by transmission and distribution system operators? Is priority or guaranteed access ensured?*

The Promotion of Electricity Produced from Renewable sources Regulations (LN186/04) and which relevant part is being superseded by the recently published Electricity Market Regulations provides a priority of dispatch for renewable sources of electricity.

*(b) How is it ensured that transmission system operators, when dispatching electricity generating installations give priority to those using renewable energy sources?*

Malta does not have a Transmission System Operator. However, most of the local renewable electricity generators are decentralised grid connected through metering arrangements and synchronise with the grid through technical equipment means. Once these are generating, such systems automatically take priority of dispatch. For larger systems these were being ruled through the previous legislation obligation, the Promotion of Electricity Produced from Renewable Sources Regulations (LN186/04). However this has been mostly superseded by the transposition of the Directive 2009/28/EC in national legislation through the Promotion of Energy from Renewable Energy Sources Regulations LN538/10. These requirements are included in the new Electricity Market

Regulations which ensure that priority dispatch is given to these major renewable electricity generators.

*(c) How are grid- and market-related operational measures taken in order to minimise the curtailment of electricity from renewable energy sources? What kinds of measures are planned and when is implementation expected? (Market and grid design that enable the integration of variable resources could cover measures such as trading closer to real time (changing from day-ahead to intra-day forecasting and rescheduling of generators), aggregation of market areas, ensuring sufficient cross border interconnection capacity and trade, improved cooperation of adjacent system operators, the use of improved communication and control tools, demand-side management and active demand-side participation in markets (through two-way communication systems — smart metering), increased distributed production and domestic storage (e.g. electric cars) with active management of distribution networks (smart grids).)*

Electricity generated on the local grid must be sold to the Distribution System Operator. Currently, the best options are being evaluated with regards to the dispatch of renewable energy sources generation when capacity exceeds demand. In this regard the interconnection with mainland Europe has to be utilised to provide the necessary balancing so as not to restore to curtailment of the excess renewable energy sources capacity.

*(d) Is the energy regulatory authority informed about these measures? Does it have the competence to monitor and enforce implementation of these measures?*

The local Regulator, the Malta Resources Authority is already addressing these measures.

*(e) Are plants generating electricity from renewable energy sources integrated in the electricity market? Could you please describe how? What are their obligations regarding participation in the electricity market?*

Currently there is no electricity market, as the electricity generated and dispatched to the grid is sold to Enemalta Corporation through either defined legislation, the Feed-in Tariff (Electricity Generated from Solar Photovoltaic Installations) Regulations (LN422/10), or through a power purchase agreement between Enemalta Corporation and the renewable electricity generator. The latter's obligations are defined in the licence issued by the regulator and the power purchase agreement with Enemalta Corporation.

*(f) What are the rules for charging transmission and distribution tariffs to generators of electricity from renewable energy sources?*

Currently the renewable electricity generated is being sold to Enemalta Corporation, the owner of the grid system. The renewable electricity generators currently pay the services for connection and use of grid similar to those of consumers. Tariffs and service charges are approved by the Malta Resources Authority and are published on the Authority's website.

**4.2.8. Biogas integration into the natural gas network (Article 16(7) and Article 16(9) and (10) of Directive 2009/28/EC)**

*(a) How is it ensured that the charging of transmission and distribution tariffs does not discriminate against gas from renewable energy sources?*

N/A. No gas network infrastructure as yet exists in the Maltese islands.

*(b) Has any assessment been carried out on the need to extend the gas network infrastructure to facilitate the integration of gas from renewable sources? What is the result? If not, will there be such an assessment?*

N/A

*(c) Are technical rules on network connection and connection tariffs for biogas published? Where are these rules published?*

N/A

**4.2.9. District heating and cooling infrastructure development (Article 16(11) of Directive 2009/28/EC)**

*(a) Please provide an assessment of the need for new district heating and cooling infrastructure using renewable energy sources and contributing to the 2020 target. Based on this assessment, are there plans to promote such infrastructures in the future? What are the expected contributions of large biomass, solar and geothermal facilities in the district heating and cooling systems?*

No district heating or cooling infrastructure exists in the Maltese islands. The planned renewable energy sources projects that will generate thermal energy, mainly those from waste to energy projects, will mostly be utilising the released thermal energy in the same plant for other processes. Thus, as there is no excessive thermal energy requirements in the vicinity of such projects the creation of district heating infrastructure is not justified. In a particular case there are plans that thermal energy from the waste to energy plant at Sant Antnin will be utilised in a neighbouring application for heating a public pool. In this case heating will be conveyed to this location.

Thermal sources are either decentralised and located at sites where thermal requirements are on the same site, thus not requiring infrastructure for district heating or cooling, or otherwise at the main power plant sites where other thermal energy requirements in the area may have not provided practical solutions for such infrastructure. In order to re-assess such possibility with the current technology and the potential future thermal sources and locations, an assessment will be carried out and planned to be finalised by end of 2011 on the feasibility of a district heating or cooling infrastructure.

#### **4.2.10. Biofuels and other bioliquids — sustainability criteria and verification of compliance (Articles 17 to 21 of Directive 2009/28/EC)**

*The following part of the national action plan should explain Member States' future strategy regarding fulfilment of the sustainability criteria for biofuels and bioliquids and verification of compliance with the scheme.*

*(a) How will the sustainability criteria for biofuels and bioliquids be implemented at national level? (Is there legislation planned for implementation? What will be the institutional setup?)*

Given the scarce arable land available in Malta and the limited amount of fresh water resources, cultivation of crops for biofuel production is not a feasible or sustainable option. Hence, the biodiesel produced is either from locally sourced recycled waste cooking oil or imported vegetable oil.

The Malta Resources Authority has addressed Articles 17 and 18 of Directive 2009/28/EC in the Biofuels (Sustainable Criteria) Regulations (LN553/10), and will be addressing Article 21 in a new drafted regulation.

A role for Malta Environment and Planning Authority (MEPA) in this process could be envisaged if the production of raw material for biofuels production in the Maltese islands becomes feasible. In that case the environmental components of the sustainability criteria can be incorporated in the Malta Environment and Planning Authority permits or other processes governing land use and environment protection. To this effect, and with respect to local production of biofuel, the transposing legislation can make reference to economic operators needing the necessary development and environmental permits from the Malta Environment and Planning Authority. An additional national requirement is to ensure that operators abide with environmental protection regulations.

*(b) How will it be ensured that biofuels and bioliquids that are counted towards the national renewable target, towards national renewable energy obligations and/or are eligible for financial support comply with the sustainability criteria set down in Article 17(2) to (5) of Directive 2009/28/EC? (Will there be a national institution/body responsible for monitoring/verifying compliance with the criteria?)*

Through verification of importation documents or Malta Environment and Planning Authority documents of locally cultivated crops.

*(c) If a national authority/body will monitor the fulfilment of the criteria, does such a national authority/body already exist? If so, please specify. If not, when is it envisaged to be established?*

It is expected that either the Malta Resources Authority or the Customs Department together with Malta Environment and Planning Authority, will review importation documents.

*(d) Please provide information on the existence of national law on land zoning and national land register for verifying compliance with Article 17(3) to (5) of Directive 2009/28/EC. How economic operators can access to this information? (Please provide information on the existence of rules and distinction between different land statuses, like biodiversity area, protected area etc; and on the competent national authority who will monitor this land register and changes in land status.)*

In terms of planning documents and legislation, areas of this nature are well identified in the relevant local plans, the process of which is described in the Development Planning Act. All local plans and any subsequent revisions, be they major or minor, are subject to public consultation and ministerial approval.

Access to Local Plans, both at draft stage and finalised versions, is through Malta Environment and Planning Authority 's website and hard copy publications. Extracts from related legislation are reproduced below for ease of reference.

The Environment and Development Planning Act stipulates the following:

Article 81 (2): “The list of conservation orders, and any additions or amendments thereto, shall be published in the Gazette and in a local newspaper. The Authority shall also notify any one of the owners of any property subject of a conservation order of the fact of its inclusion in the list and of any conservation order made with respect to it. Notice of such conservation order shall also be affixed on site. If none of such owners is known, or if it is not reasonably possible to effect service on such owners, the said notice shall only be affixed on site and no service on such owners as aforesaid need be made. Notice of such conservation order shall be registered in an index held for that purpose which identifies the property subject to that order. The said index shall be held in an electronic form in such a way that researches to determine whether a property is subject to such an order may be carried out. The Authority shall keep a copy of the said index in the office of the Land Registry and shall issue a certificate which indicates whether a particular property is subject to the said order on the payment of such fee as may be prescribed. ”

A similar provision is included in the Flora, Fauna and Natural Habitats Protection Regulations, 2006 (SL 504.73), as issued through the Environment Protection Act and the Development Planning Act:

Regulation 12: “ The Competent Authority [Malta Environment and Planning Authority] shall also notify any one of the owners of any site designated as a SAC or SPA of its inclusion in the list, and shall also affix such a notice on site. If none of such owners is known, or if it is not reasonably possible to effect service on such owners, the said notice shall only be affixed on site and no service on such owners as aforesaid need be made...

The protected site list shall be registered in an index held for the purpose... The said index shall be held in an electronic form in such a way that research to determine the status of a site may be carried out. The Authority shall keep a copy of the said index in

the office of the Land Registry and shall issue a certificate, which indicates the status of a particular site on the payment of such fee as may be prescribed... For the purpose of this regulation, “site” shall also include a single property of more than one property, irrespective of who is the owner of that property, which forms part of the site, which is, designated a SAC or SPA. ”

With respect to Article 17(5) of Directive 2009/28/EC - We do not have peatlands in Malta. They are typically acidic.

*(e) As far as protected areas are concerned, please provide information under which national, European or international protection regime they are classified.*

Protected areas for nature conservation fall under the following categories:

**Natura 2000 sites: -**

**(Sites of Community Importance/Special Protection Areas)**

European protection: Council Directive 92/43/EEC (identifies which habitats and species require protection)

European protection: Council Directive 79/409/EU (identifies bird species requiring protection including associated habitats).

**Special Areas of Conservation (SACs) of International Importance: -**

European protection: Council Directive 92/43/EEC (identifies which habitats and species require protection)

Maltese legislation: Legal Notice 311/06 (transposes Council Directive 92/43/EEC)

**Special Protection Areas (SPAs) : -**

European protection: Council Directive 79/409/EU (identifies bird species requiring protection including associated habitats).

Maltese legislation: Legal Notice 311/06 (transposes Council Directive 79/409/EEC).

**Special Areas of Conservation (SACs) of National Importance: -**

Maltese legislation: Legal Notice 311/06 (transposes Council Directive 92/43/EEC)

**Ramsar Sites: -**

Wetlands of International Importance: Convention on Wetlands of International Importance (or UN Ramsar Convention)

**Specially Protected Areas (SPAs)**

Protocol for Specially Protected Areas in the Mediterranean of the Barcelona Convention.

**Specially Protected Areas of Mediterranean Interest (SPAMIs): -**  
Protocol for Specially Protected Areas and biological Diversity in the Mediterranean of the Barcelona Convention.

**Emerald Network: -**  
Areas of Special Conservation Interest under the Council of Europe Bern Convention.

**Special Areas of Conservation (National): -**  
Development Planning Act / Environment Protection Act

**Nature Reserve (National): -**  
Filfla Nature Reserve Act

**Nature Reserve, Islets (National): -**  
Environment Protection Act

**Nature Reserve, Trees (National): -**  
Environment Protection Act

**Bird Sanctuary**  
Environment Protection Act

**Protected Beaches: -**  
Code of Police Law / Environment Protection Act

**Areas of Ecological Importance: -**  
Development Planning Act

**Sites of Scientific Importance :-**  
Development Planning Act

**Areas of Ecological Importance & Sites of Scientific Importance : -**  
Development Planning Act

**Areas of High Landscape Value : -**  
Development Planning Act

A number of sites also house important habitats and species. These habitats and species are covered through the the EC Habitats Directive, the Flora, Fauna and Natural Habitats Protection Regulations, 2006 (LN311/06 as amended), as well as other related Environment Protection Act legislation.

Any change to the status of protected areas within a local plan, would necessarily have to follow a change in status agreed to by the Environment Protection Directorate (EPD).

*(f) What is the procedure for changing the status of land? Who monitors and reports at national level on land status changes? How often are the land zoning register updated (monthly, annually, bi-annually, etc.)?*

In relation to the change from non-protected status to protected status under the Environment Protection Act, a Government Notice or Legal Notice is published. In both instances, a public consultation procedure is carried out. Management measures of statutory, administrative or contractual nature may follow, which may include a management plan for the site is then to be compiled which may identify different levels (zones) of management that is required. MEPA is the competent authority that monitors and reports at a national and EU level on land status changes of protected areas.

Any change to the status of protected areas within a local plan, would necessarily have to follow a change in status agreed to by the Environment Protection Department.

Frequency of change is statutorily less than bi-annually.

*(g) How is compliance with good agro-environmental practices and other cross-compliance requirements (required by Article 17(6) of Directive 2009/28/EC) ensured and verified at national level?*

Refer to statement of a) above i.e given the scarce arable land available in Malta and the limited amount of fresh water resources, cultivation of crops for biofuel production is not a feasible or sustainable option.”

*(h) Do you intend to help develop voluntary ‘certification’ scheme(s) for biofuel and bioliquid sustainability as described in the second subparagraph of Article 18(4) of Directive 2009/28/EC? If so,how?*

Which system is to be used is still to be decided.

#### **4.3. Support schemes to promote the use of energy from renewable resources in electricity applied by the Member State or a group of Member States**

*Support schemes can be regulatory, providing for targets and/or obligations. They may provide financial support either for investment or during the operation of a plant. There are also soft measures like information, education, or awareness-raising campaigns. As soft measures are described above, this assessment should focus on regulatory and financial measures.*

*Please describe existing schemes with legal reference, details of the scheme, duration (indicating start and end dates), past impact and explain whether any reform or future schemes are planned and by when. What are the expected results?*

Different sectors are being addressed through different schemes and project calls.

The Planning and Priorities Coordination Department (PPCD) aims to ensure the efficient management of European Union and bilateral funding programmes by providing effective coordination across all stakeholders. PPCD is also the Managing Authority for EU Structural Funds and the Cohesion Fund, among other programmes.

The goals and strategic priorities for Cohesion Policy 2007-2013 in Malta are identified by Malta's National Strategic Reference Framework (NSRF), which was approved by the European Commission in December 2006.

The strategy set out in the NSRF forms the basis of two Operational Programmes which will be spent over the coming years. Malta's two Operational Programmes are:

- Operational Programme I – Investing in Competitiveness for a Better Quality of Life - This OP focuses on the European Regional Development Fund and the Cohesion Fund; and
- Operational Programme II – Empowering People for More Jobs and a Better Quality of Life - This OP focuses on the European Social Fund.

#### Malta's Strategy for Cohesion Policy 2007-2013

A total of €855 million worth of EU funds has been allocated for Cohesion Policy 2007-2013 in Malta. This consists of:

ERDF	€ 444 million
Cohesion Fund	€ 284 million
ESF	€ 112 million
European Territorial Cooperation Programmes (ERDF)	€ 15 million

Member States and regions which are classified under the convergence objective, can obtain a maximum EU co-financing rate of 85% of the total eligible cost of projects. This is complemented by national co-financing.

#### Funding Related To Energy

OPI - Priority Axis 4 – Mitigation and Adaptation to Climate Change (ERDF). The financial allocation for this Priority Axis amounts to €121m of which €102.85m are Community Funding (European Regional Development Fund).

One of the two Focus Areas of Intervention: ENERGY

The specific development objective of Priority Axis 4 is to mitigate the effects of climate change for increased competitiveness and an enhanced quality of life. The operational objectives of this Priority Axis include:

- To reduce airborne emissions resulting from electricity generation;
- To study the viability of interconnection with mainland Europe and other means to secure supply (through, for example, large offshore RES farms), including, the expansion of the current distribution system to cater, inter alia, for increased electricity generation;
- To promote measures resulting in energy efficiency and reduction in the use of non-renewable energy sources; and
- To promote the use of RES and energy efficiency measures at the domestic and enterprise levels.

The following are the ‘output’ and ‘result’ indicators related to Energy:

<i>Type of Indicator</i>	<i>Indicator</i>	<i>Target</i>
<b>Output</b>	Annual penetration rate of installed PV, microwind and solar (in kWpeak/annum or equivalent in energy saving) generating systems starting in 2008 (kWp/annum)	340
	No of energy efficiency schemes	2-3
	No of studies	1
<b>Result</b>	Total annual electricity generated from small scale PV and micro-wind installations (MWh/annum)	3,000
	Total energy savings per year (MWh/annum)	24,300

PPCD opened one public call under this Axis in 2008 and another two public calls in 2009. Application forms and guidance notes were prepared by the Managing Authority (MA). The calls were published via a press release with advertisements published in a number of leading newspapers. Furthermore, information sessions were organised vis-à-vis the afore-mentioned calls by the MA for potential Applicants. These sessions were announced in newspapers and stakeholders were encouraged to participate. Following

the information sessions a list of frequently asked questions (FAQs) were posted on the website of the PPCD to give additional guidance to Applicants (even those unable to attend the information session) in filling in the ERDF Application Form. The calls for proposals remained open for 6 weeks. Following submission of project proposals, the Project Selection Committee (PSC) evaluated and ranked all proposals.

### Approved Projects

- ERDF 088 – Promotion of Renewable Energy Sources in the Domestic Sector (€9,013,500). Beneficiary organization – Malta Resources Authority

The RES support scheme provides financial support to cover part of the investment costs of domestic RES equipment (solar water heater and photovoltaic panels). Available funds will be allocated according to the type of equipment purchased. Households will be eligible for photovoltaics in line with *‘Guidance note on eligibility of energy efficiency and renewable energies interventions under the ERDF and the Cohesion Fund (2007-2013)* in the building sector including housing. Solar water heaters are considered energy efficiency projects. These are subject to criteria in line with Article 7 of Regulation EC/1080/2006 amended by EC 397/2009. An education campaign focusing on reducing energy usage will operate in line with these schemes. Studies will be conducted to monitor the progress of the education campaign and response to the aid scheme. RES equipment will be installed to demonstrate their performance and noise impact.

- ERDF 090 – Implementing Green Activities at the University of Malta (€4,402,249).  
Beneficiary organization – University of Malta

The project aims at increasing energy efficiency at the University of Malta through the installation of power factor correction equipment for five on-site substations, reducing the demand for grid energy through the use of energy saving T5 fluorescent tubes, the use of presence sensors in laboratories, offices, lecture rooms and corridors, and through generating electrical energy by installing photovoltaic systems.

- ERDF 101 – Installation of Renewable Energy Sources at Malta College of Art Science and Technology (MCAST) (€994,056).  
Beneficiary organization – Malta College of Arts, Science and Technology

The project involves the installation of electrical power generating systems complete with all the necessary associated hardware and monitoring systems on MCAST buildings’ roofs at the College main campus in Paola. These installations will be complimented with a wind turbine. This equipment is expected to generate a peak of 130kW and 4kW respectively.

- ERDF 102 – Energy – Smart Authority (€66,300).  
Beneficiary organization – Housing Authority

Energy Smart Authority includes the conversion of the offices of Housing Authority in Floriana into eco-friendly, energy smart building. The project consists of RES installation through a 3.48 kWp Photovoltaic system to generate 5,232 kWh p/a and the installation of Energy Efficient lighting system through lighting optimisers aiming to save 10,212 kWh p/a on energy consumption.

In addition, to the above approved projects, PPCD as the Managing Authority has also nominated a number of Intermediate Bodies (IBs) to manage Aid Schemes (operations falling under Article 87 of the Treaty). Malta Enterprise has been appointed to manage the scheme under Priority Axis 4 entitled ERDF Energy Grant Scheme. The scheme was originally approved with a budget of €10 million. However, following the successful take-up from the industry sector, the MA approved an additional €5 million to be injected in this sector. Eligible actions include investments in renewable sources of energy and energy efficient equipment. The co-financing rate for enterprises is of 50% (Public Funds: 85% EU; 15% MT) of the eligible costs.

In addition to the above energy-specific projects, there are a number of projects across Operational Programme I (OPI) which have a RES or EE component.

PPCD serves also as the Managing Authority for ESF Operational Programme (OPII). It addresses 5 key priority areas which offer the possibility to strengthen economic and social cohesion by improving employment and job opportunities, encouraging a high level of employment and generating more and better jobs.

- ESF 1.36 'Professional Development Programmes for MCAST staff & Student's Top Up degrees'. Beneficiary organization – MCAST

Among its activities, the project also includes scholarships to persons occupying key areas in Environmental Engineering and Alternative Sources of Energy, with an emphasis on Wind and Solar Energy.

OPII supports and encourages those initiatives aiming to train technical people and acquire expertise, including higher qualifications, in RES technologies.

### Territorial Cooperation Programmes (2007-2013)

PPCD is also the national contact point of five Territorial Cooperation Programmes<sup>4</sup> and of the ENPI CBC Med programme. Such programmes aim at encouraging cooperation and exchanging knowledge and best practices amongst the respective Member States and Partner Countries. The relevance of these programmes with regard to energy is outlined hereunder:

#### a) Italy Malta 2007-2013

The objective of the Italy-Malta 2007-2013 programme<sup>5</sup>, which has a total allocation of €35,000,000 is to strengthen the attractiveness and competitiveness of the cross-border

<sup>4</sup> Malta participates in the Italia-Malta Cross Border Programme 2007-2013, the Med Programme, the Interreg IVC Programme, the Interact II Programme and the Espon 2013 Programme.

<sup>5</sup> Under this programme, Maltese entities are eligible to participate in joint projects together with entities from the following Provinces: Agrigento, Caltanissetta, Ragusa, Siracusa and Trapani. The regional Provinces of Catania and Palermo are also eligible for financing in terms of Article 21(1) of Reg. EC/1080/2006.

area, whilst taking into consideration environmental sustainability. Objective 2.2 of this programme entitled Contributing to the development of renewable energy and energy efficiency aims at incorporating innovative technologies in the field of energy efficiency and supply. Likewise, it also aims at testing the transferability and applicability of innovative solutions adopted in other European territories, hence seeking to capitalize on experiences obtained in other contexts.

A call for the submission of ordinary project proposals was launched on the 31st December 2009 and closed on 31st March 2010. The total budget allocated to Objective 2.2 under this call amounted to € 3,510,638.

#### b) Med Programme

The Med Operational Programme focuses on developing the MED area<sup>6</sup> in order to ensure growth and employment for the next generations. This programme supports territorial cohesion and actively intervenes in favour of environmental protection within the framework of sustainable development. It addresses the following four Axes in connection with the main priorities of the ERDF regulation: Innovation, Environment, Accessibility and Sustainable Urban Development. Objective 2.2 of the Programme specifically addresses the promotion of renewable energy and the improvement of energy efficiency. Two calls for standard project proposals have been launched under the programme in caption; a number of projects concerning renewable energy and energy efficiency are currently undergoing the evaluation and selection process. Furthermore, the 1<sup>st</sup> call for strategic project proposals has been launched and has identified “The Improvement of Energy Efficiency and the Promotion of Renewable Energies” as one of the main target areas for this call.

#### c) ENPI CBC MED Programme

Malta is also participating in the ENPI CBC MED Programme<sup>7</sup>, which provides the framework for the implementation of cross border and cooperation activities in the context of the European Neighbourhood Policy. Measure 2.2 of the ENPI CBC MED Operational Programme focuses exclusively on the promotion of renewable energy and the improvement of energy efficiency. The first call for standard projects under this programme was launched in the second quarter of 2009 and closed in October 2009. 30% of the €32,811,784 allocated to the first call for standard projects was allocated to Priority 2 of the programme.

The first call for strategic projects under the programme in caption, which is envisaged to be launched in the second half of 2010, is also of relevance to Energy: one of the themes on which it will focus is the definition of policies and promotion of pilot initiatives to

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<sup>6</sup> Apart from Malta, the following MS / regions within the MS may participate in the Med programme: Portugal, Spain, Italy, France, Greece, Cyprus, Slovenia, UK (Gibraltar). Croatia, Albania, Macedonia, Montenegro and Bosnia and Herzegovina may also participate in this programme.

<sup>7</sup> The Managing Authority of the Programme is the region of Sardegna. Specific regions from the following countries are eligible to participate in this Programme: Algeria, Cyprus, Egypt, France, Greece, Israel, Italy, Jordan, Lebanon, Libya, Malta, Morocco, Palestinian Authority, Portugal, Spain, Syria, Tunisia, Turkey and the United Kingdom.

support R&D, innovation and technology transfer (with particular attention to SMEs) in the field of solar energy.

d) The INTERREG IVC programme

The INTERREG IVC programme aims<sup>8</sup> to improve the effectiveness of regional development policies in the areas of innovation, the knowledge economy, the environment and risk prevention so as to contribute towards economic modernisation and the increased competitiveness of Europe. Priority 2 of the programme, which focuses on environment and risk prevention, addresses the stimulation of energy efficiency and the development of renewable energies. Three calls for project proposals have been launched under this programme since 2007. Malta is participating in eight projects selected under the first and second call for project proposals. One of the projects selected for funding deals directly with energy efficiency and climate change as it contributes towards stimulating low carbon initiatives across regional economic sectors. More details on this project may be accessed from the following links [http://www.mepa.org.mt/interreg4c\\_rsc](http://www.mepa.org.mt/interreg4c_rsc); <http://www.rscproject.org/>.

The above-mentioned calls were published via notices on the PPCD web site, several mail shots to all Ministries and also by means of various information sessions in Malta and Gozo.

## Regulation

*Regulation can set target(s) and obligations. In case there is such an obligation please detail it:*

There is no obligation for the use of renewable electricity generation yet.

(a) *What is the legal basis for this obligation/target?*

N/A

(b) *Are there any technology-specific targets?*

N/A

(c) *What are the concrete obligations/targets per year (per technology)?*

N/A

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<sup>8</sup> The INTERREG IVC programme, which is managed by Lille, covers the entire territory of the European Union with its 27 Member States, as well as Norway and Switzerland.

*(d) Who has to fulfil the obligation?*

N/A

*(e) What is the consequence of non-fulfilment?*

N/A

*(f) Is there any mechanism to supervise fulfilment?*

N/A

*(g) Is there any mechanism to modify obligations/targets?*

N/A

### **Financial support**

*Financial support can be classified in various ways. Examples are financial support for investment, capital grants, low interest loans, tax exemptions or reductions, tax refunds, tender schemes, renewable energy obligations with or without green certificates (tradable green certificates), feed-in tariffs, feed-in premiums, voluntary schemes.*

*For any scheme you use, please give a detailed description answering the following questions?*

*(a) What is the name and a short description of the scheme?*

#### **Domestic:**

In the past years the Malta Resources Authority administered several giving grants on the use of solar water heaters, photo-voltaic systems, micro-wind turbines, roof insulation, double glazing and electric vehicles by the domestic sector. The schemes for roof insulation and double glazing closed in February 2010. Schemes for micro-wind turbines up to a capacity of 3.7kW of G.N. 136/2006 and electric cars as per GN203/05 are still ongoing. A grant of 25% to a maximum of €232.94 is given for micro-wind turbines and a grant of 15.25% to a maximum €1,164.69 is given for electric vehicles.

Between 2006 and 2009 there were three schemes for solar water heaters through which more than 20,000m<sup>2</sup> of solar collectors were installed (an additional 17,000m<sup>2</sup> were installed without the use of grants between 2005 and 2009). Currently a fourth grant scheme for solar water heaters (GN161/10) is ongoing, through which of 40% to a maximum of €560 on eligible costs is given on approved systems and installations. Only households that meet the eligibility criteria can benefit from this scheme, these being households receiving Energy Benefit Vouchers, or Children's Allowance, all Gozitan

households, households with an income or joint income not exceeding €16,070, first time buyers of premises purchased costing less than €120,000 or households in receipt of social assistances.

Concurrently a scheme on photo-voltaic systems (GN162/10) was launched where a grant of 50% up to a maximum of €3,000 was given on approved systems and installations. Both schemes were launched on 16 February 2010 and form part of a 3 year budget allocation plan partly funded by the European Regional Development Fund (ERDF). These schemes remain open for a year or until the allocated quantities have been exhausted if the year has not elapsed, as was the case of the photo-voltaic scheme which was over subscribed on the first day. Applicants will only receive a grant if they choose equipment from the list of registered products on the Authority's website. The terms for registration of equipment to be included in the product list eligible for the grant scheme are defined in GN52/10.

#### Commercial and Industrial sector:

#### **ERDF Energy Grants Scheme**

The Malta Enterprise, the Government entity dealing with industrial promotion, launched a scheme in 2009, under the European Regional Development Fund 2007-2013 programme. The ERDF Energy Grant Scheme is an opportunity for proactive businesses that are willing to invest in solutions that will help reduce the impact of energy costs on their business. The funds available amount to €10 million and participants in this scheme can benefit from a 50% grant up to a maximum of €100,000. Projects benefiting from this incentive should be completed within 24 months of the issue of the Grant Agreement from Malta Enterprise. For an application to be considered for co-funding, the minimum project value (based on eligible expenses) must be at least €25,000 and must not exceed €200,000. The resultant minimum grant value per project is € 2,500.

This incentive will remain effective until 31 December 2013 or until funds are exhausted. The incentive is administered through a series of competitive calls. Malta Enterprise issues public calls for interested enterprises to submit applications under the incentive. Applications are reviewed and eligible applications are evaluated and ranked. Grants are awarded to the top ranking applicants in accordance to the available budgets. Three calls for proposals of projects have already been issued. The third call closed in March 2010 and will shortly be adjudicated. It was estimated that a total of 3 MWp (4.5GWh/annum) PV capacity will be installed by 2010 as a result of the first two calls.

#### **EARDF (Measure 121) – Modernization of Agricultural Holdings**

The MRRA Paying Agency launched a project call for the agricultural sector under the European Agricultural funds for Rural Development (EARDF) – Measure 121 – Modernization of Agricultural Holdings. One of the sub-measures eligible for funding within this call was environmental investments. This measure had the highest weighting

attached to it, and required 20% of the project costs to be allocated to environmental investment in order for the project to get full points awarded.

The funds allocated under this call amounted to €148 million. Farmers and farming businesses were eligible to apply for the funds allocated. The project grant was 50% of eligible costs and a total of 180 projects were eligible for grants under this call. The contracts for grant offers under this call were signed in December 2009. There is no concrete information yet but the MRRA Paying Agency is considering issuing a second call.

#### Project calls for Governmental and Non-Profit Organizations.

#### **Energy Saving Scheme for Local Councils**

The Office of the Prime Minister launched a voluntary scheme with a one time allocated budget of €150,000. The aim of the scheme was to provide an incentive to local councils to implement energy saving projects. The call for proposals was issued in January 2009. All applications for assistance submitted under this Scheme were assessed by an Evaluation Board and fifteen eligible projects were chosen. The financial assistance for each project was up to a maximum of €10,000. During project evaluation precedence was given to the most cost effective energy saving or renewable energy technology proposed.

The selected projects were announced in April 2009.

In summary the table below includes all the strictly energy projects approved so far under Priority Axis 4 of Operational Programme I. There are other projects approved under the other Axes of the OP which include a small renewable energy sources /energy efficiency component as part of the overall project.

Project Ref No. and Project Title	Beneficiary	Start date	End date	Expected Results
ERDF 088 – Promotion of renewable energy sources in the domestic sector	Malta Resources Authority	2008	2013	1222MWh/annum (electricity generated) 1622MWh/annum (energy savings)
ERDF 090 - Implementing Green Activities at the University of Malta	University of Malta	2009	2012	835MWh/annum (electricity generated) 1100MWh/annum (energy savings)
ERDF 101 -	MCAST	2008	2011	235MWh/annum

Installation of Renewable Energy Sources at MCAST					(electricity generated)
ERDF 102 - Energy-Smart Authority	Housing Authority	2008	2010	5.232MWh/annum (electricity generated) 10.212 MWh/annum (energy savings)	
ERDF 133 - ERDF Energy Grant Scheme	Malta Enterprise is the Intermediate Body implementing this scheme (Beneficiaries of such schemes are private entities)	2008	2013	5000MWh/annum (electricity generated) 22000 MWh/annum (energy savings)	
ERDF 192 - Photovoltaic System at the University of Gozo Centre	University of Malta	2010	2011	35MWh/annum (electricity generated) 35MWh/annum (energy savings)	
ERDF 193 - Gozo Diocese's contribution to turn Gozo into an Eco-island	Diocese of Gozo	2010	2011	75.11MWh/annum (electricity generated) 75.11MWh/annum (energy savings)	

*(b) Is it a voluntary or obligatory scheme?*

All mentioned schemes are on a voluntary basis.

*(c) Who manages the scheme? (Implementing body, monitoring authority)*

Please refer to beneficiary enlisted in the table above.

*(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?*

Schemes are planned through the national budget prior to the year in question, clearly defining a capping on the uptake and allocated on a first come first served basis once the applicant is fully eligible to the criteria previously defined. Some other schemes are co-funded by the EU through various supports offered, and the additional funding is also planned in the national budget.

*(e) How is long-term security and reliability addressed by the scheme?*

Schemes are set to offset the initial risks in investing in an innovative measure. The continuous implementation of schemes, besides offering confidence for further uptake, even promotes the technology through the increased market interest and competitive pricing. Schemes offer a first step to a sustainable market of the respective technology. Experiences through these schemes have indicated a price reduction in technology and better services due to increased interest, demand, technical innovation and competition.

However it is even of great importance that new technologies being introduced through such schemes do not convey negative perception of the technology through reduced quality standards and disappointments. Thus, technologies eligible to schemes are being accepted only if they are up to defined quality standards. This also ensures that only products of high quality are available for consumers.

*(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?*

Schemes implemented have either a defined closing date or a capping on uptake. Hence schemes are normally re-launched periodically. Lessons learnt in past schemes are implemented in new ones. The revisions also reflect the market trend and requirements, and refined to address even particular sectors having different barriers.

*(g) Does support differ according to technology?*

The support in most cases does discriminate between one type of renewable source and another, such as photo-voltaic against solar water heaters. However, within the same application for instance, as regards to photo-voltaic systems, it does not discriminate between type of modules whether silicon or amorphous. Same for solar water heating there is no discrimination between flat panels and evacuated tubes.

*(h) What are the expected impacts in terms of energy production?*

Statistic measurements indicate that the average power generation of a 1kWp photo-voltaic system would generate 1530kWh. As technology efficiency will improve this is expected to go higher by 2020. As regards to solar water heating, the average insulation energy and conversion to the heated medium on a 2.5m<sup>2</sup> area is estimated to be around 1650kWh annually.

*(i) Is support conditional on meeting energy efficiency criteria?*

The support is conditional on the performance of the measure being proposed.

*(j) Is it an existing measure? Could you please indicate national legislation regulating it?*

Yes there is a requirement of guaranteed performance of the equipment upon which a grant is being offered. Please refer to GN 52 of 2010.

*(k) Is this a planned scheme? When would it be operational?*

Schemes are anticipated and announced through the national budget speeches.

*(l) What start and end dates (duration) are set for the whole scheme?*

Every scheme will have a pre-defined time schedule for applications and eventual installation of the system.

*(m) Are there maximum or minimum sizes of system which are eligible?*

The limits for the allocation of the grant are defined through the defined limits of the grant scheme. Extra capacity may however be installed if applicable, however without the benefit of the grants.

*(n) Is it possible for the same project to be supported by more than one support measure? Which measures can be cumulated?*

No funding covering total project cost can be provided from different schemes.

*(o) Are there regional/local schemes? If so, please detail using the same criteria.*

Some particular criteria are intended to enhance particular uptake in certain regions, in our case Gozo as an eco-island.

*Specific questions for financial support for investment:*

*(a) What is granted by the scheme? (subsidies, capital grants, low interest loans, tax exemption or reduction, tax refunds)*

The schemes provide a percentage capital grant over the investment of the renewable equipment. A tax credit effectively of 243% is also available for industry.

*(b) Who can benefit from this scheme? Is it specified for certain technology(/ies)?*

Schemes address both energy efficiency measures and electricity generation, and each scheme addresses a particular technology and is addressed to particular sectors #.

*(c) Are applications continuously received and granted or are there periodical calls? If periodical, could you please describe the frequency and conditions?*

Schemes are set and applications received periodically. The budget set for the scheme is defined over several years, and commonly, a call is issued annually with optimized criteria.

*Specific questions for tradable certificates:*

**Malta does not have a tradable certificate market.**

*(a) Is there an obliged share of electricity produced from renewable sources in the total supply?*

**There is no such obligation.**

*(b) Who has the obligation?*

**N/A**

*(c) Are there technology-specific bands?*

**N/A**

*(d) Which technologies are covered by the scheme?*

**N/A**

*(e) Is international trade in certificates allowed? What are the conditions?*

**N/A**

*(f) Is there a floor bottom price?*

**N/A**

*(g) Is there a penalty for non-fulfilment?*

**N/A**

*(h) What is the average price for certificates? Is it made public? Where?*

**N/A**

*(i) What is the trading scheme for certificates?*

N/A

*(j) How long can a plant participate in the scheme?*

N/A

*Specific questions for feed-in fixed tariffs:*

Malta has in the past adapted a net-metering mechanism on grid connected renewable energy generation. Net-metering exchanges the exported units from the imported consumed units. However this mechanism, though it was a good start for the introduction and familiarisation of renewable energy technologies, had some boundaries, especially in the Maltese market.

Malta introduced the Feed-in Tariff (Electricity generated from Solar Photovoltaic Installations) Regulations (LN422/10) on 10 September 2010. These Regulations address the photovoltaic grid connection systems and guarantee a tariff for the exported units over a defined period. The tariff will be reviewed annually to reflect the technology market developments.

Malta intends to develop further similar type of legislation to other renewable energy technologies and applications, not necessarily benefiting from financial grants, and addressing large scale projects.

Large scale projects called by the Government on public property are to be allocated through tendering procedures. The tariff will be one of the selection criteria.

As regards to private development interests, the developer is guided to provide a plan of the project. Verification of any planning permits with the Malta Environment and Planning Authority is required as a first step, and followed up with a business plan as to justify a tariff which may be claimed.

*(a) What are the conditions to get the fixed tariff?*

The fixed feed in tariff is currently only available to Solar Photovoltaic systems which may benefit from zero up to 50% grant on its capital costs. A recent review of this regulation also introduces a mechanism whereby systems benefiting from financial grants in excess of 50% will have a recalculated tariff. There are also plans to introduce a tariff for those systems which would not benefit from financial grant schemes.

*(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the tariff?*

In order to manage the financing of the feed-in tariff, as this will eventually be transferred to the overall consumers, and to provide the opportunity equally to all those interested in the installation of photovoltaic systems, the Government has defined some capping mechanisms.

There is a capping on the amount of units which can be exported annually from a system, this being 1600 kWh per kilowatt of installed capacity up to 4800kWh for domestic premises and up to 160,000kWh for commercial premises.

Besides, the Government has set a limit on the annual overall generation uptake, and in the first year this was set at 12GWh and accumulated to 30GWh for the second year.

*(c) Is it a technology specific scheme? What are the tariff levels for each?*

Presently, the Feed-in Tariff scheme is only available for Solar Photovoltaic installations. Similar schemes are also being set for other grid connected renewable energy sources.

*(d) Are there other criteria differentiating tariffs?*

With the current tariff scheme for Solar Photovoltaic, there are different tariffs for domestic installations. Installations in Malta benefit from 0.25€/kWh and those in Gozo benefit from 0.28€/kWh, both guaranteed for 8 years whereas installations in commercial premises benefit from 0.20€/kWh and are guaranteed for 7 years.

New regulations are planned to define tariffs which will be differentiated between sources such as wind, solar, biomass etc; method of installation such as roof-top, ground, building integrated etc; and system size considerations.

*(e) For how long is the fixed tariff guaranteed?*

The Solar Photovoltaic Regulation, defines the tariff fixed for 8 years for domestic premises and 7 years for commercial premises.

*(f) Is there any tariff adjustment foreseen in the scheme?*

Tariffs are adjusted and defined annually and a photovoltaic system is eligible to the tariff stipulated on the date of its application with the Regulator.

*Specific questions for feed-in premiums:*

*(a) What are the conditions to get the premium?*

N/A

*(b) Is there a cap on the total volume of electricity produced per year or of installed capacity that is entitled to the premium?*

N/A

*(c) Is it an alternative to fixed tariff?*

N/A

*(d) Is it a technology-specific scheme? What are the premium levels for each?*

N/A

*(e) Is there a floor and/or a cap for the premium? Please specify.*

N/A

*(f) For how long is the premium price guaranteed?*

N/A

*(g) Is any tariff adjustment foreseen in the scheme?*

N/A

*Specific questions for tendering:*

*(a) What is the frequency and size of the tenders?*

The major renewable energy projects, that is on-shore and off-shore wind and waste to energy projects, which will contribute to approximately 70% of the national target, will be commissioned through tendering procedures made by the Maltese Government.

As a requirement through the procurement procedures, the Government will be issuing an Expression of Interest followed by a call for tenders for the projects mentioned. Criteria for the best option in adjudication will be defined in the tender.

Presently the Government of Malta is conducting the necessary studies to evaluate the technical, financial and environmental viability of such projects with the help of data measuring campaigns and environmental impact assessments. Following the completion and positive outcome of these studies, there an expression of interest and tender will be issued.

The major projects start up and peak potential contributions are indicated in the table below:

Major RES Projects Start-up and indicated peak* potential contribution in Electricity and Thermal RES share	2010	2011	2012	2013	2014	2015	2016
Electrical		Energy from Waste Water Ta' Barkat (7.8GWh)[WSC]	Digester from cattle farm (1.7MWh) [WSM]			RDF (84GWh) [WSM]	
	Sant Antnin - MBT (7.6GWh) [WSM]	Landfill gasses (5.4GWh*) [WSM]		Wind Farm Hal-Far (10GWh) [GoM]	Gozo & North MBT (33GWh) [WSM]	Wind Farm Wied Rini (27GWh) [GoM]	Wind Farm Sikka I-Bajda (216GWh) [GoM]
			PV on Public roofs Phase 1 (7.5GWh) [GoM]	PV on Public roofs Phase 2 (7.5GWh) [GoM]			
Thermal							
	Sant Antnin MBT (10GWh) [WSM]	energy from Waste Water Ta' Barkat (8.2GWh) [WSC]					

\* potential will vary from year to year, estimating reaching peak after 3years and degrading after 9 years

WSM - Wasteserv Malta Ltd

WSC - Water Services Corporation

GoM - Government of Malta (Tender)

*(b) Which technologies are specified?*

Technologies being targeted are photo-voltaic systems on public areas, co-generation in waste to energy projects, offshore wind and onshore wind.

*(c) Is it integrated with grid development?*

The development plans of the grid infrastructure also include the eventual connection of such systems.

#### **4.4. Support schemes to promote the use of energy from renewable resources in heating and cooling applied by the Member State or a group of Member States**

*Please follow the structure of point 4.3 and apply the questions to the support measures provided for renewable energy use in the heating and cooling sector. Please address the following additional points:*

The information defined in section 4.3 applies for this section as well since the same information regarding support schemes are similar to both grid connected equipment and solar thermal and heat from waste to energy. The latter is generated from the same electricity plant through co-generation. Thus the schemes and tendering points for this technology are already addressed in 4.3.

Malta is also investigating the potential of the use of heat-pumps as a means for space and domestic water heating. The recent involvement on the Concerted Action on this directive has highlighted a particular potential which may exist previously neglected due unclear definition of the requirements and lack of local market information. Heating through aero-thermal heat-pumps is quite common in Malta during cold winter periods, especially in commercial buildings, offices and hotels. However, studies in this sector are being carried out prior which no estimation can be done on its impact towards the 2020 targets, though such equipment is already being utilised in this manner being today seen only as consumption of electricity.

*(a) How are the support schemes for electricity from renewable energy sources adapted to encourage the use of CHP from renewable energy sources?*

A report on the feasibility of CHP<sup>9</sup> has indicated that such technology is viable within certain parameters. Besides, a Government owned company responsible for the waste management will be adopting several CHP initiatives being run from gases emitted from engineered landfills, mechanical treatment plants and RDF. A similar project is being implemented with regard to gases from a sewage treatment plant. Government is also

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<sup>9</sup> Analysis of the potential for co-generation in Malta [http://www.mra.org.mt/library\\_publications.shtml](http://www.mra.org.mt/library_publications.shtml)

planning to build a cattle farming complex, from which manure emissions will drive a CHP.

*(b) What support schemes are in place to encourage the use of district heating and cooling using renewable energy sources?*

No infrastructure for district heating and cooling exists in Malta.

*(c) What support schemes are in place to encourage the use of small-scale heating and cooling from renewable energy sources?*

Schemes promoting energy efficient heat pumps for air-conditioning had been implemented way back in 2008. Such equipment can contribute to the heat generation as a renewable resource, however the Directive identifies only heating mode as relevant resource as a contribution to the targets. The major load in Malta as a Mediterranean country is in cooling.

*(d) What support schemes are in place to encourage the use of heating and cooling from renewable energy sources in industrial applications?*

Current technology in applying heating and cooling from renewable energy is either through co-generation making use of biofuels or biomass from waste as addressed in item a) or through solar thermal collectors. Support schemes are currently in place to encourage the latter through grant schemes being managed by the Malta Enterprise for energy efficiency and integration of renewable energy sources in the industrial sector, as indicated in section 4.3 under Financial Support for Commercial and Industrial sectors.

#### **4.5. Support schemes to promote the use of energy from renewable resources in transport applied by the Member State or a group of Member States**

*Please follow the structure of point 4.3 and apply the questions the support measures provided for renewable energy use in the transport sector. Please make distinctions according to transport modes (such as road transport, non-road land transport).*

On 9 July 2010, the Ministry for Resources and Rural Affairs set up a Committee to draft a national strategy for the implementation of an Electric Transportation system. The Committee prepared a list of actions and incentives to address electro-mobility and electric vehicles. The Government of Malta is showing commitment to embrace electric mobility and to exploit such market potential deriving from such sector. The plan will include the start up of a charging infrastructure complimented with schemes to encourage the purchase of electric vehicles. It is targeted that by 2020, 5,000 electric vehicles will be included in the local vehicle fleet, which complimented by a mix of renewable electricity on the grid for their charging requirements will be contributing to an estimate of 1% in the renewable transport target.

## Regulation

*Regulation can set target(s) and obligations. In case there is such an obligation please detail it:*

*(a) What is the legal basis for this obligation/target?*

The Malta Resources Authority is proposing that the system of tax exception upon biofuels is partly replaced by a regulation on mandatory substitution obligation. The entry into force of the Regulation will oblige importers to put a fixed pre-determined percentage of biofuels into their market share.

Substitution obligation legislation for the inclusion of biofuels is undergoing public consultation. An obligation is imposed on the importer and supplier of fuels to import and distribute a percentage of the fuels deriving from biofuels.

*(b) Are there any technology-specific targets?*

The legislation addresses a percentage share of biofuels.

*(c) What are the concrete obligations/targets per year (per technology)?*

The obligation is incremental and would start from 1.5% in 2011 and will eventually reach 10% by 2020.

Year	Total Biofuel as a percentage of the total energy content petroleum fuel placed on the market (%)
2011	1.5 %
2012	2.5 %
2013	3.5 %
2014	4.5 %
2015	5.5 %
2016	6.5 %
2017	7.5 %
2018	8.5 %
2019	9.5 %
2020	10.0 %

*(d) Who has to fulfil the obligation?*

This substitution obligation would require importers and/or wholesalers of petroleum to include an amount of biofuel content in any petroleum product that is wholesaled in the inland fuel market. The minimum percentage of biofuel can be ensured either by blending the biofuel with the petrol or diesel or by placing pure biofuel on the market, such that over a period of one calendar year the entire amount of fuel placed on the market has the minimum percentage of biofuel (in terms of energy content) corresponding to the trajectory target for that year. The EU Directive provides the methodology and the parameters required to carry out the appropriate technical calculations.

The biofuel placed into the market, as part of the mandatory substitution obligation, will have to meet the ‘Sustainability Criteria’ set out in the Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources.

*(e) What is the consequence of non-fulfilment?*

Non-compliance with the requirements of the substitution obligation would constitute a breach in the Regulations (LN278/07), as amended, leading to a pro-rata penalty imposed on the importer/wholesaler. Such a penalty would be calculated based on the energy content biofuel shortfall and imposed by the Authority as defined the regulation 35 of the Legal Notice. The administrative fine will be a specific fixed penalty per litre shortfall, and be defined by the Malta Resources Authority, at a percentage level in excess of the difference in international prices between fossil and bio fuels.

*(f) Is there any mechanism to supervise fulfilment?*

MRA is proposing that a legal framework encompassing duties of various governmental entities be put into place with the aim of laying down the obligations remits and modus operandi of all players in the biofuel market. Such a framework, which will consist of a licensing regime, will differentiate between the different scale of manufacturers based on the rights and obligations of such operators.

The frameworks’ primary aims will therefore be:

- to guarantee that the biofuel is sourced from sustainable sources;
- to guarantee a fair playing field amongst all operators;
- to ensure that only good quality biofuel is placed on the market; and
- to ensure biofuel is produced and stored according to the most up to date technical standards.

*(g) Is there any mechanism to modify obligations/targets?*

MRA is envisaging that during the first three years, the proposed trajectory will be reached through an increased use of biodiesel, with the remaining years seeing the introduction and gradual increased use of bioETBE. The MRA is currently in the process of developing a further strategy for the years 2013-2020. The aim of this strategy is to prepare a framework of how the country could and should react to advancement in the biofuel sector, including more stringent sourcing of biofuels, fluctuations in price and higher feasibility of second-generation biofuels.

In terms of promoting local production of biofuel local lobbies and biodiesel producers have often stated that locally produced biofuel also creates a number of secondary benefits, such as requiring the collection of waste stream products, job creation and local investment. In view of these facts, they state that indigenous production of biofuel should be positively discriminated against that of imported biofuel. MRA acknowledges the importance of such a resource and will give due consideration in promoting locally produced biofuel.

The MRA is in the process of studying possible ways and means of how local production may be promoted in parallel with the general promotion of biofuel.

## **Financial support**

*Financial support can be classified in various ways. Examples are financial support for investment, capital grants, low interest loans, tax exemptions or reductions, tax refunds, tender schemes, renewable energy obligations with or without green certificates (tradable green certificates), feed-in tariffs, feed-in premiums, voluntary schemes.*

*For any scheme you use, please give a detailed description answering the following questions?*

*(a) What is the name and a short description of the scheme?*

A scheme introduced in 2005 and still active to day gives a grant of 15.25% on the purchase price of Electric-powered cars subject to a maximum grant of €1,164.69. (GN 203 of 2005 refers.)

Such scheme will be reviewed in line with Transport Malta measures to promote electrical vehicles. Other legislation is being set by the Malta Resources Authority in regard to measures on the use of auto-gas.

Biofuels tend to be more expensive than conventional fuels (at today's prices), and in order to reduce this discrepancy, countries within the EU can opt to choose different financing mechanisms. In general, however, the following are the favoured mechanisms:

- Fiscal Incentives, where a Country decides to exempt biofuels partially or fully

from the payment of excise duty normally paid for transport fuels.

- National Grants, where a Country decides to give grants for the cultivation of energy crops.
- Substitution obligation, where a Country may decide that all petroleum market operators who place petrol and diesel on the market for the first time or import these fuels into the country are obliged to market a percentage of biofuels determined by legislation.

Malta has so far opted for the first mode of promotion and currently the biomass content (i.e. the percentage element) in biodiesel is exempted from the payment of excise duty. Currently this makes biodiesel cheaper than petroleum diesel retailed in filling stations and therefore a fiscal incentive provides one of the driving forces for the biodiesel sales.

The third option of ‘substitution obligation’ is now being considered.

*(b) Is it a voluntary or obligatory scheme?*

The scheme is voluntary.

*(c) Who manages the scheme? (Implementing body, monitoring authority)*

The Malta Resources Authority manages the scheme.

*(d) What are the measures taken to ensure availability of necessary budget/funding to achieve the national target?*

MRA is proposing a system whereby full or partial excise duty is paid on the biofuel needed to reach the targets set by the mandatory substitution obligation, whereas any additional biofuel which is placed on the market is given some other form of incentive, always provided that the ‘Sustainability Criteria’ set by the EU directives are met.

In other EU countries, the introduction of a mandatory substitution obligation implied that the fiscal tax incentive granted to biofuel was removed in favour of the former promoting mechanism. Some countries have done this with immediate effect; others have staggered the introduction of the full excise duty over a number of years. In both cases however, the biofuel portion which is not part of the mandatory substitution obligation and which is added on a voluntary basis is still being promoted through other financial incentives.

Although a final decision on any incentive related to biofuel will be taken upon due consideration of feedback resulting from this consultation, the MRA is studying a number of scenarios of how the pricing scenario of biodiesel within the threshold of the mandatory substitution obligation would develop based on different financing schemes.

*(e) How is long-term security and reliability addressed by the scheme?*

Unfortunately, notwithstanding this fiscal incentive, which in 2007 is estimated to have accounted to around €672,000 of foregone revenue from excise duty, there is currently little or no significant price difference for the end consumers between the retail price of diesel and that of biodiesel. This marginal difference in price is not enough of an incentive for consumers to blend biodiesel in their consumption.

MRA is proposing that such a system of tax exemption is replaced partly by a mandatory substitution obligation<sup>10</sup>, with the tax exemption being limited only to biofuels used beyond the legal requirement of the mandatory substitution obligation.

*(f) Is the scheme periodically revised? What kind of feed-back or adjustment mechanism exists? How has the scheme been optimised so far?*

The scheme related to the use of EV is now in line to be reviewed taking into account the rapid development of technology in this market.

*(g) Does support differ according to technology?*

Best available technology and efficient technologies would prevail in electric vehicles. As regards to bio-fuels, bio-fuels deriving from waste, residues, non-food cellulosic material, and lingo-cellulosic material and second generation bio-diesels which contribution will count twice towards the transport target, hence will be better incentivised.

*(h) What are the expected impacts in terms of energy production?*

The introduction of electric vehicles is expected to substitute an equivalent of 1.75ktoe by 2020, and the auto-gas uptake 3.62ktoe by 2020 from conventional diesel and petrol consumption.

*(i) Is support conditional on meeting energy efficiency criteria?*

To be defined

*(j) Is it an existing measure? Could you please indicate national legislation regulating it?*

N/A

*(k) Is this a planned scheme? When would it be operational?*

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<sup>10</sup> A mandatory substitution obligation refers to a market situation imposed by regulation where all oil operators/importers operating in a set market are obliged to blend a specific amount of biofuel into their product before placing it on the market.

N/A

*(l) What start and end dates (duration) are set for the whole scheme?*

N/A

*(m) Are there maximum or minimum sizes of system which are eligible?*

N/A

*(n) Is it possible for the same project to be supported by more than one support measure?  
Which measures can be cumulated?*

To be defined

*(o) Are there regional/local schemes? If so, please detail using the same criteria.*

N/A

*Please address the following additional points:*

*(a) What are the concrete obligations/targets per year (per fuel or technology)?*

Referring to the proposed legislation these are :

<b>Year</b>	<b>Total Biofuel as a percentage of the total energy content petroleum fuel placed on the market (%)</b>
2011	1.5 %
2012	2.5 %
2013	3.5 %
2014	4.5 %
2015	5.5 %
2016	6.5 %
2017	7.5 %
2018	8.5 %
2019	9.5 %
2020	10.0 %

*(b) Is there differentiation of the support according to fuel types or technologies? Is there any specific support to biofuels which meet the criteria of Article 21(2) of the Directive?*

Bio-fuels deriving from waste, residues, non-food cellulosic material, and lingo-cellulosic material and second generation bio-diesels which contribution will count twice towards the transport target, hence will be better incentivised.

#### **4.6. Specific measures for the promotion of the use of energy from biomass**

*Biomass has an important role as primary energy in all the three sectors: heating and cooling, electricity and transport. National biomass strategy is crucial to plan the role and the interaction of uses between the energy end uses and interaction with other non-energy sectors. Therefore Member States are required to assess their domestic potential and increased mobilisation of domestic and imported biomass resources. The impact on and the interaction with other non-energy sectors (as the food and feed industry, pulp and paper industry, construction industry, furniture industry etc.) should be analysed.*

In January 2009, the Ministry for Resources and Rural Affairs published ‘A solid Waste management Strategy for the Maltese Islands’.

##### **4.6.1. Biomass supply: both domestic and trade**

*Under this point Member States should assess the supply of domestically available biomass and the need for imports.*

*There should be a distinction between biomass (A) from forestry — (1) direct and (2) indirect supply; (B) from agriculture and fisheries — (1) directly provided and (2) by-products/processed crops; and (C) from waste — (1) biodegradable fraction of municipal solid waste, (2) biodegradable fraction of industrial solid waste and (3) sewage sludge. Data is required for the above-mentioned first subcategories, while more detailed information is optional. However the aggregated figures shall reflect the following categorisation and give information in the units of Table 7. The role of imports (EU and non-EU) and exports (if possible, EU and non-EU) must be reflected.*

*Please note that wood chips, briquettes and pellets can be either from direct supply or from indirect supply from forestry. If information on pellets is included in the table, it should specify whether the raw material comes from direct or indirect supply.*

*In the case of biogas and biofuels the amount of raw feedstock should be detailed in Table 7, not the amount of processed feedstock. It is understood that for imports and exports the amount of biomass feedstocks for biofuels is more difficult to ascertain, and estimations may be necessary. Alternatively, if the information on imports is given on the basis of biofuel imports, it must be specified in the table.*

Table 7

**Biomass supply in 2006**

Sector of origin		Amount of domestic resource #	Imported		Exported	Net amount	Primary energy production (ktoe)
			EU	non-EU	EU/non-EU		
(A) Biomass from Forestry ~	Of which:	0	0	0	0		0
	(1) direct supply of wood biomass from forests and other wooded land for energy generation	0	0	0	0		0
	(2) indirect supply of wood biomass for energy generation	0	0	0	0		0
(B) Biomass from Agriculture and Fisheries	Of which:		0	0	0		0
	(1) agricultural crops and fishery products directly provided for energy generation				0		0
	(2) Agricultural by-products/processed residues and fishery by-products for energy generation	280,000	0	0	0	280,000	0
(C) Biomass from waste	Of which:	175,000			1,980	173,020	0
	(1) biodegradable fraction of municipal solid waste including biowaste (biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises, and comparable waste from food processing plants) and landfill gas	167,000			1,980	165,020	0
	(2) Biodegradable fraction of industrial waste (including paper, cardboard, pallets)	8,260				8,260	0
	(3) Sewage sludge	0	0	0	0	0	0

# Amount of resources in cubic metres ( if possible, otherwise in appropriate alternative units) for category A and its subcategories and in tonnes for categories B and C.

~ Biomass from forestry should also include biomass from forest-based industries. Under the category of biomass from forestry processed solid fuels, such as chips, pellets and briquettes should be included in the corresponding subcategories of origin.

Sources: Wasteserv Ltd.,

*Please explain the conversion factor/calculation methodology used above for the conversion of the amount of available resources to primary energy.*

The calculation methodology is based on an extrapolation from the design criteria for the Sant Antnin Plant Mechanical Biological Treatment.

*Please specify on what basis the biodegradable fraction of municipal solid waste and of industrial waste was calculated.*

The biodegradable waste fraction was indicated as being 66%. This is a published figure based on waste composition analyses (National Statistics Office, 2002). Recent analyses indicate that the biodegradable waste fraction presently stands at approximately 58%.

*Please use Table 7a to give an estimated contribution of biomass energy use in 2015 and 2020. (Following the categorisation used in Table 7.)*

**Table 7a**

**Estimated biomass domestic supply in 2015 and 2020**

Source of origin		2015		2020	
		Expected amount of domestic resource (tonnes)	Primary energy production (ktoe)	Expected amount of domestic resource (tonnes)	Primary energy production (ktoe)
(A) Biomass from forestry	(1) direct supply of wood biomass from forests and other wooded land for generation				
	(2) indirect supply of wood biomass for energy generation				
(B) Biomass from agriculture and fisheries	(1) agricultural crops and fishery products directly provided for energy generation				
	(2) Agricultural by-products/processed residues and fishery by-products for energy generation	280,000	3.97	280,000	3.97

(C) Biomass from waste	(1) Biodegradable fraction of municipal solid waste including biowaste ( biodegradable grade and park waste, food and kitchen waste from household, restaurants, caterers and retail premises, and comparable waste from food processing plants) and landfill gas	160,000	25.5	164,000	25.08
	(2) Biodegradable fraction of industrial waste ( including paper, cardboard, pallets)	9,000	Included with figure above	9,500	Included with figure above
	(3) Sewage sludge	5.7 M (Nm <sup>3</sup> )	1.46	5.7 M (Nm <sup>3</sup> )	1.46

Sources: WasteservMalta Ltd, Water Services Corporation.

*What is the estimated role of imported biomass up to 2020? Please specify the quantities expected (ktoe) and indicate possible import countries.*

It is not within the plans to import considerable amounts of solid biomass in Malta. The solid biomass being utilised derives mainly as a by-product of locally generated waste. However with respect to the requirements to achieve the required quantity of bio-fuel for the transport section, processed biomass in the finalised products of bio-diesel and bioETBE is required and the local production cannot sustain such production. Hence most of the bio-fuels would need to be imported. Table 12 will provide the estimated figures required for importation.

*In addition to the information provided above, could you please describe the current situation of agricultural land used for dedicated energy production as follows:*

It is our understanding that this request is referring to crops used as biomass for energy production. If this is the case, then this is not applicable for Malta. No agricultural land is currently dedicated to such production; there are no immediate plans for such an activity.

Table 8

**Current agricultural land use for production of crops dedicated to energy in 2006**

**(ha)**

Agricultural land use for production of dedicated energy crops	Surface
1. Land used for short rotation trees (willows, poplars)	Nil
2. Land used for other energy crops such as grasses (reed canary grass, switch grass, Miscanthus), sorghum	Nil

**4.6.2. Measures to increase biomass availability, taking into account other biomass users (agriculture and forest based sectors)**

## **Mobilisation of new biomass sources**

Given the scarce arable land available in Malta and the limited amount of fresh water resources, cultivation of crops for biofuel production is not considered as a feasible or sustainable option. Hence no study was ever considered on the probable greenhouse gas emissions from agricultural products cultivated on Maltese arable land.

Actually the cultivation of biofuels crops is not seen in a favourable light by the Agricultural Department as this will compromise land that is currently being utilised for forage production. Forage production in Malta is important because it supports the dairy industry. Normally Malta is not self-sufficient and imports additional forage to supplement local production. Hence further importation would be an added cost.

*(a) Please specify how much land is degraded.*

N/A

*(b) Please specify how much unused arable land there is.*

N/A

*(c) Are any measures planned to encourage unused arable land, degraded land, etc. to be used for energy purposes?*

N/A

*(d) Is energy use of certain already available primary material (such as animal manure) planned?*

There are plans to develop a complex for cattle farming. It is being anticipated that 1.73MWh of electricity from the manure will be generated annually.

*(e) Is there any specific policy promoting the production and use of biogas? What type of uses are promoted (local, district heating, biogas grid, natural gas grid integration)?*

Biogas production and availability is a by-product of waste treatment and engineered landfills. Such biogas generation will be used in the generation of electricity and heat through either a combined heat and power plant or as heat for treatment of waste through a regenerative thermal oxidiser technology or similar and are part of the waste to energy projects defined. The biogas will be consumed at the same site of generation hence no distribution infrastructure is planned.

However an assessment on the necessity to construct an infrastructure for district heating and cooling in the proximity of such plants is being carried out.

*(f) What measures are planned to improve forest management techniques in order to maximise the extraction of biomass from the forest in a sustainable way? ( 4 ): How will*

*forest management be improved in order to increase future growth? What measures are planned to maximise the extraction of existing biomass that can already be put into practice?*

N/A

### **Impact on other sectors**

*(a) How will the impact of energy use of biomass on other sectors based on agriculture and forestry be monitored? What are these impacts? (If possible, please provide information also on quantitative effects.) Is the monitoring of these impacts planned in the future?*

N/A

*(b) What kind of development is expected in other sectors based on agriculture and forest that could have an impact on the energy use? (E.g. could improved efficiency/productivity increase or decrease the amount of by-products available for energy use?)*

### **4.7. Planned use of statistical transfers between Member States and planned participation in joint projects with other Member States and third countries**

Under this subchapter the expected use of cooperation mechanisms between Member States and Member States and third countries has to be described. This information should draw on that provided in the forecast document referred to in Article 4(3) of the Directive 2009/28/EC.

#### **4.7.1. Procedural aspects**

*(a) Describe the national procedures (step by step) established or to be established, for arranging a statistical transfer or joint project (including responsible bodies and contact points).*

Malta is participating in the Concerted Action on RES directive in Work Group 1 where co-operative mechanisms are being addressed by most participating Member States.

*(b) Describe the means by which private entities can propose and take part in joint projects either with Member States or third countries.*

To be defined.

*(c) Give the criteria for determining when statistical transfers or joint projects shall be used.*

To be defined

*(d) What is going to be the mechanism to involve other interested Member States in a joint project?*

To be defined

*(e) Are you willing to participate in joint projects in other Member States? How much installed capacity/electricity or heat produced per year are you planning to support? How do you plan to provide support schemes for such projects?*

To be defined

#### **4.7.2. Estimated excess production of renewable energy compared to the indicative trajectory which could be transferred to other Member States**

*Please use Table 9 filling in the required information.*

#### **4.7.3. Estimated potential for joint projects**

The estimation and current projections will just provide the requirements of Malta's obligations to reach the 2020 targets, based on the fact that Malta's potential is limited due to its limited space of 314km<sup>2</sup> and surrounded by relatively deep waters. As new technologies are being investigated, any break through may increase Malta's potential and such joint projects in the local territory may be investigated.

*(a) In which sectors can you offer renewable energy use development in your territory for the purpose of joint projects?*

To be defined.

*(b) Has the technology to be developed been specified? How much installed capacity/electricity or heat produced per year?*

To be defined.

*(c) How will sites for joint projects be identified? (For example, can local and regional authorities or promoters recommend sites? Or can any project participate regardless its location?)*

To be defined.

*(d) Are you aware of the potential for joint projects in other Member States or in third countries? (In which sector? How much capacity? What is the planned support? For which technologies?)*

To be defined.

(e) Do you have any preference to support certain technologies? If so, which?

To be defined.

#### 4.7.4. Estimated demand for renewable energy to be satisfied by means other than domestic production

Please use Table 9 filling in the required information.

Table 9

**Estimated excess and/or deficit production of renewable energy compared to the indicative trajectory which could be transferred to/from other Member States in Malta**

(ktoe)

ktoe	2012	2014	2016	2018	2020
Estimated excess in forecast document	0.28	6.20	7.11	14.01	
Estimated excess in NREAP	2.06	7.64	8.37	16.13	1.07
Estimated deficit in forecast document					4.35
Estimated deficit in NREAP	0.00	0.00	0.00	0.00	0.00

## 5. ASSESSMENTS

### 5.1. Total contribution expected of each renewable energy technology to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport

*The contribution of each renewable energy technology to the trajectory and 2020 targets in the electricity, heating and cooling and transport sectors should be estimated giving a possible future scenario without necessarily establishing any technology target or obligation.*

*For the electricity sector, both the expected (accumulated) installed capacity (in MW) and yearly production (GWh) should be indicated by technology. For hydro, a distinction should be made between plants of less than 1 MW, between 1 and 10 MW, and over 10 MW installed capacity. For solar power, details should be given separately for contributions from photovoltaic solar and concentrated solar power. Wind energy data should be indicated for onshore and offshore separately. For biomass, a distinction should be made between solid, gaseous and liquid biomass for electricity.*

*When assessing the heating and cooling sector, estimates of both installed capacity and production should be given for geothermal, solar, heat pumps and biomass technologies, with a breakdown for the latter category for solid, gaseous and liquid biomass. The contribution from district heating plants using renewable energy sources should be estimated.*

*The contribution from different technologies to the renewable energy target in the transport sector should be indicated for ordinary biofuels (both bioethanol and biodiesel), biofuels from wastes and residues, biofuels from non-food cellulosic material or from ligno-cellulosic material, biogas, electricity from renewable energy sources and hydrogen from renewable energy origin.*

*In case you have estimations on developing the use of certain technologies by regions, could you please indicate that after the table?*

Table 10.a

**Estimation of total contribution (installed capacity, gross electricity generation) expected 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 2010-2014**

Electricity	2010		2011		2012		2013		2014	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:										
< 1 MW										
1 MW - 10 MW										
> 10 MW										
of which pumping										
Geothermal:										
Solar:										
Photovoltaic	4.05	6.19	4.59	7.02	10.68	16.34	26.39	40.38	26.61	40.71
Concentrated solar power										
Tide, wave, ocean :										
Wind: (small wind)	0.01	0.01	0.04	0.06	0.05	0.08	0.06	0.09	0.07	0.11
Onshore	0.00	0.00	0.00	0.00	0.00	0.00	1.70	4.17	4.25	10.42
Offshore	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Biomass:										
Solid	0.00	0.00	0.18	1.26	0.18	1.26	0.18	1.26	15.18	85.50
biogas	2.84	8.68	3.14	18.64	3.44	20.80	7.94	54.30	7.94	54.30
bioliquids										
Total	6.90	14.89	7.94	26.98	14.34	38.48	36.26	100.20	54.04	191.04
of which in CHP										

Table 10.b

Estimation of total contribution (installed capacity, gross electricity generation) expected 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 2015-2020

	2015		2016		2017		2018		2019		2020	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro:												
< 1 MW												
1 MW - 10 MW												
> 10 MW												
of which pumping												
Geothermal:												
Solar:												
Photovoltaic	26.82	41.03	27.03	41.36	27.24	41.68	27.46	42.01	27.67	42.34	27.88	42.66
Concentrated solar power												
Tide, wave, ocean :												
Wind: (small wind)	0.08	0.12	0.09	0.14	0.10	0.16	0.11	0.17	0.12	0.19	0.13	0.20
Onshore	6.80	17.35	14.45	38.12	14.45	38.12	14.45	38.12	14.45	38.12	14.45	38.12
Offshore	0.00	0.00	25.00	56.94	95.00	216.37	95.00	216.37	95.00	216.37	95.00	216.37
Biomass:												
Solid	15.18	85.50	15.18	85.50	15.18	85.50	15.18	85.50	15.18	85.50	15.18	85.50
biogas	7.94	54.30	7.94	54.30	7.94	54.30	7.64	52.14	7.64	52.14	7.34	49.98
bioliquids												
Total	56.81	198.31	89.68	276.36	159.91	436.14	159.83	434.32	160.05	434.66	159.98	432.84
of which in CHP												

Table 11

Estimation of total contribution (final energy consumption (5 )) expected 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 2010-2020

ktoe	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Geothermal ( excluding low temperature geothermal heat in heat pump applications)											
Solar:	2.52	2.62	2.72	2.73	2.73	2.74	2.74	2.75	2.75	2.75	2.76
Biomass:											
solid	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
biogas	1.01	1.96	2.21	2.21	2.21	2.21	2.21	2.21	1.96	1.96	1.72
bioliquids											
Renewables energy from heat pumps:											
of which aerothermal											
of which geothermal											
of which hydrothermal											
Total	3.53	4.58	4.94	4.94	4.94	4.95	4.95	4.96	4.71	4.72	4.47
of which DH											
of which biomass in households											

Table 12

**Estimation of total contribution expected 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 2010-2020**

ktoe	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Bioethanol/bio-ETBE	1.75	2.14	2.53	2.93	3.34	3.74	4.15	4.56	4.97	5.38	5.79
of which biofuels Article 21(2)											
of which imported	1.75	2.14	2.53	2.93	3.34	3.74	4.15	4.56	4.97	5.38	5.79
Biodiesel	1.23	1.25	1.27	1.29	1.30	1.32	1.34	2.03	2.74	3.47	7.03
of which Biofuels Article 21(2)	1.23	1.25	1.27	1.29	1.30	1.32	1.34	2.03	2.74	3.15	3.15
of which imported	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	3.88
Hydrogen from renewables											
Renewable electricity in transport	0.00	0.00	0.01	0.03	0.07	0.14	0.21	0.31	0.42	0.56	0.70
of which road transport	0.00	0.00	0.01	0.03	0.07	0.14	0.21	0.31	0.42	0.56	0.70
of which non-road transport											
Others (as biogas, vegetable oils tec.) - please specify											
of which Biofuels Article 21(2)											
Total	2.98	3.39	3.81	4.25	4.71	5.20	5.70	6.90	8.13	9.41	13.52

**5.2. Total contribution expected from energy efficiency and energy saving measures to meet the binding 2020 targets and the indicative interim trajectory for the shares of energy from renewable resources in electricity, heating and cooling and transport.**

*The answer to this requirement should be included in Table 1 under chapter 2.*

#### **5.4. Preparation of the National Renewable Energy Action Plan and the follow-up of its implementation**

*(a) How were regional and/or local authorities and/or cities involved in the preparation of this Action Plan? Were other stakeholders involved?*

The plan has been based on major projects already announced and planned by Maltese Government, upon which preliminary studies had already been initiated. Various organisations have been involved prior to the setting up of this current NREAP. Actions had been initiated when the original target of the share of renewable sources of energy was being determined, being again reviewed prior the forecast document in December 2009. A further focused review on the sectors that needed further address has been done prior defining this final NREAP document.

*(b) Are there plans to develop regional/local renewable energy strategies? If so, could you please explain? In case relevant competences are delegated to regional/local levels, what mechanism will ensure national target compliance?*

Studies are ongoing for the Gozitan region for the evaluation of a self sustained eco-island.

*(c) Please explain the public consultation carried out for the preparation of this Action Plan.*

A public consultation has taken place in the second week of June in order to retrieve feedback from NGO's and all stakeholders in relation to the proposed plans. Various inputs and feedback had been also considered as well as proposed reports as for example the one prepared by the REPAP2020.

*(d) Please indicate your national contact point/the national authority or body responsible for the follow-up of the Renewable Energy Action Plan?*

The Ministry of Resources and Rural Affairs is the entity responsible to follow-up the Renewable Energy Action Plan.

*(e) Do you have a monitoring system, including indicators for individual measures and instruments, to follow-up the implementation of the Renewable Energy Action Plan? If so, could you please give more details on it?*

Most of the proposed projects provide a measure-able method of energy content. Malta will also have an electricity smart-metering system which can provide data on electricity consumption and generation. In cases where the energy is not easily measurable, such data would be provided by statistical sampling and other proven mechanisms.