EXPERT EVALUATION NETWORK
DELIVERING POLICY ANALYSIS ON THE PERFORMANCE OF COHESION POLICY 2007-2013
YEAR 1 - 2011

TASK 1: POLICY PAPER ON RENEWABLE ENERGY AND ENERGY EFFICIENCY OF RESIDENTIAL HOUSING

MALTA

VERSION: FINAL

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A report to the European Commission
Directorate-General Regional Policy

CONTENTS

LIST OF ABBREVIATIONS

- EEN – Expert Evaluation Network
- ERDF – European Regional Development Fund
- ESF – European Social Fund
- OP – Operational Programme
- MRA – Malta Resource Authority
- MEPA – Malta Environment and Planning Authority
- PV – Photovoltaic

1. EXECUTIVE SUMMARY

Malta introduced the first renewable energy scheme in 2006, which promoted the use of Photovoltaic technology on a small scale. Most of the funding available was directed at improving the energy efficiency of appliances and housing. In 2010, the focus has moved on towards larger support for the preferred choice in renewable energy technology, namely photovoltaics, as Malta struggles to work towards achieving its 2020 renewable energy targets. There has been a relatively strong reliance on solar energy, with a very small attempt to introduce wind turbines, the use of biofuels in industry and no use of geothermal energy. While the expectation was that wind energy would play a major part in the national landscape of renewables, technological and regulatory hurdles faced resulted in this technology not featuring on any substantial scale in the residential sector the industrial sector in Malta.

The policy in Malta is reflective of EU policy, and justification for intervention in the provision of renewable energy is strong. The implementation of such policy, however, is still in its infancy.

Malta obtains ERDF and Cohesion funds under the Convergence Objective, under which it can obtain a maximum EU co-financing rate of 85% of the total eligible cost of projects. This is complemented by national co-financing. Regional differences in such support exist between the two larger islands, Malta (Main Island) and Gozo. However, this is not specific to renewable energy projects but pertains to interventions in general, as the country had at one point committed 10% of EU funding to the island of Gozo. Moreover, Gozo is designated to become an Eco-Island over the next years, with a specific budget line out of national resources devoted specifically to this purpose, which may impact upon rates of support applicable to renewable energy projects in the Island Region.

Real estate market differentiation for energy efficient housing is almost non-existent, with very few signs of any references to this in the property market.

2. NATIONAL POLICY

Overview

Maltese national policies that promote renewable energy sources and energy efficiency of residential housing are those envisaged in the OP1 titled Mitigation and Adaptation to Climate Change. The financial allocation for this Priority Axis amounts to EUR 121 million of which EUR 102.8 million is ERDF-funded.

The Malta Resource Authority (MRA) benefitted from EUR 9 million from this fund to promote **renewable energy** specifically in the residential sector.

Apart from projects targeted directly at increasing the volume of renewable energy produced in Malta, a criterion of environmental sustainability was introduced in the application for projects under all the projects financed by Cohesion policy. Through the inclusion of adequate environmental sustainability measures, applicants may benefit up to a maximum of 15% of the marks during the project selection process.

The residential schemes launched cover solar and wind energy. Biofuels are not considered to be a viable source of renewable energy due to the scarcity of arable land and the limited fresh water resources in Malta. The majority of the projects have focused on PV panels to generate energy as permitting problems have created difficulty for the installation of wind turbines. Table A summarises the amounts of grants issued by the MRA which are relevant to this study.

Table A - Grants Issued by Type (EUR thousand)

	2006	2009	2010
Solar Water Heaters	214.7	1,600.0	224.0
Photovoltaic	2.6	500.0	6,200.0
Wind turbins	0.0	0.0	0.0
Energy Efficient Appliances	1,202.0	0.0	0.0
Roof Insulation	9.9	68.0	0.0
Double Gazing	0.0	50.1	0.0
Energy Saving Light	0.0	4,000.0	0.0

Source: MRA

The funds allocated in 2006 and 2009 were funded by national funds, while the 2010 initiatives were ERDF funded. Initiatives administered by the MRA have been in the form of grants. There has been an increase in grants directed at PV energy as the burden of funding such initiatives started to be shared together with ERDF sources. ERDF sources where directed at PV schemes while national funding is being directed at solar water heaters.

In respect to schemes targeting the commercial sector, Malta Enterprise launched a soft-loans scheme in 2011 to encourage the tourism sector who have not benefitted from any ERDF scheme to invest in renewable energy and measures that promote energy efficiency. Soft loans of up to EUR 400,000, making up 80% of the investment for a period of up to 5 years. This was funded by national funds.

Fiscal incentives are also present to promote the use of biofuels by industry. This is in the form of exemption from excise duty of biofuels in order to increase their use in the transport sector.

Feed-in tariffs are another way of encouraging investment in renewable energy._Enemalta Corporation (the only energy provider in Malta) operates a 'net metering' policy for solar-generated electricity that is fed into the grid, provided that production does not exceed consumption within a stipulated period of time at the following rates.

Table B - Feed-in Tariff Rates 2010

	Feed-in tariff		Max Installation
Malta Residential	0.25	0.161	3kw
Gozo Residential	0.28	0.161	3kw
Commercial	0.20	0.162	100kw

The **energy efficiency** of buildings is promoted through regulation. The National Action Plan outlines that a minimum level of energy efficiency of buildings is required by new or renovated buildings following the Energy Performance of Buildings Regulation (LN216/08) which transposes Directive 2002/91/EC which includes measures to improve energy performance for roofs, walls, windows and other exposed areas.

Malta Enterprise also conducts 'Energy Audits' to provide enterprises with an audit of the energy efficiency of the current set up and explore/identify solutions for improvements in energy savings. This audit includes an onsite inspection by an expert.

The Effects of Changing Economic Circumstances

There has been no modification in the long-term policy on energy due to changes in economic circumstances. Malta's Strategic Report confirms that despite the unforeseen impact of the global crisis, the strategy and priorities as outlined in the NSRF and the OPs remain valid.. The recession in Malta posed no special constraints on public financing, hence no specific effect has been identified in this context.

Regional Considerations

The island of Gozo is identified as a potential eco-island and as a separate region in the Action Plan. The Ministry for Gozo is coordinating renewable energy and energy efficiency

policies on the island. There is no explicit regional policy coordinating renewable energy and energy efficiency initiatives in Gozo. There is, however, a concept document that outlines the vision for Gozo to become an eco-island. A budget of EUR 25 million was allocated for this purpose. Amongst the 80 action points outlined in the document, the following are the relevant ones to the scope of this project.

- Identify optimal sites for small onshore wind farms and develop small onshore wind farms with a limited number of turbines.
- Utilise rooftops of public buildings and other spaces such as public car parks for renewable energy projects involving solar energy.
- Install additional photovoltaic panels at the Ministry for Gozo funded from savings in electricity bills arising from replacement of the existing energy supply.
- Carry out energy audits on all public buildings including the Gozo Administration Centre.
- Provide free consultation to people on how to convert their houses to be energy
- Award companies, households, villages and streets committed to energy-saving with a 'Green Award'.

3. ERDF AND COHESION FUND SUPPORT AND CONTRIBUTION TO NATIONAL POLICY

Overview of Measures

Malta obtains ERDF and Cohesion funds under the Convergence objective, under which it can obtain a maximum EU co-financing rate of 85% of the total eligible cost of projects. This is complemented by national co-financing.

OP1 is co-financed by both the ERDF and the CF with five Priority Axes financed through the former and two Axes financed through the latter.

The Aims of priority axes include:

1. to reduce airborne emissions resulting from electricity generation;
2. 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 for increased electricity generation;
3. to promote the use of RES and energy efficiency and reduction in the use of non-renewable energy sources;
4. to promote the use of RES and energy efficiency measures at the domestic and enterprise levels;

5. to develop infrastructure to minimise the effects of storm water.

As part of the comprehensive approach to climate change, the only project approved under the Priority Axis *Mitigation and Adaptation to Climate Change* which relates to the domestic sector, namely ERDF 088 – Promotion of Renewable Energy Sources in the Domestic Sector, aims to contribute towards the mitigation of climate change through the installation of renewable energy equipment such as photovoltaic and solar water heaters on residential housing with a view to contributing towards the reduction of carbon footprint emanating from households. In the light of territorial constraints which are a limiting factor for large scale solar or wind farms, the authorities are encouraging the use of space in residential housing as one way of reaching national climate change targets through the schemes mentioned above.

Due to restrictions on the ability to use ERDF funds to fund solar water heaters in households ta division in the funding has naturally emerged, with ERDF used to support PV panel initiatives and national funds to be used (in 2011) on solar water heating initiatives.

ERDF funds have also been used for financing of a scheme operated by Malta Enterprise where EUR 15 million were allocated to enterprises as a grant of up to 50% of expenditure of up to EUR 200,000 on energy saving solutions and alternative energy technology. This scheme falls under the OP1.

Table C – ERDF Scheme Outcome

Call	N. Of Beneficiaries	Approved Grant Value (EUR million)
Call1	52	3.0
Call2	84	4.8
Call3	118	6.9
Total	254	15.0

The majority of beneficiaries (over 80%) opted for investment through PV technology. The values displayed in Table C above relate to the grant value which is capped at 50% and in any case not exceeding EUR 100,000. Therefore the actual project value is more than double the grant value (over EUR 30 million)

Scale of Support

National funding is used to support a number of initiatives aimed at increasing the use of renewable energy. National funds are **especially** used to fund the installation of solar water heaters, in view of the fact that the funding of this technology is restricted to households that are economically disadvantaged when funded by ERDF funds. As can be seen from Table A above, initiatives undertaken in 2006 and 2009 where nationally funded, while

initiatives undertaken in 2010 were ERDF funded. The ERDF scheme coordinated by Malta Enterprise was funded half by ERDF funds and half by national funds.

There is a commitment of 10% of Cohesion Funding for Gozo. Most of the calls for project proposals and schemes issued during 2009 were open for Applicants across the whole territory of Malta (including Gozo). One call for ERDF project proposals under PA 4 with Focus Area – Energy, launched on the 4th May 2009 (Call 5) was issued specifically for Gozo-based projects. This call was restricted to interventions in Gozo focusing on energy efficiency and renewable energy sources.

Over time, there was no apparent change in the scale or form of funding. The focus has shifted away from the use of wind energy following the lack of take-up of such funding. In terms of the effects of the economic downturn, the soft-loan initiatives by Malta Enterprise supporting for the production of renewable energy and energy efficiency was promoted in order to counter the effect of the recession, but this was directed at the Tourism industry and not at households.

4. RATIONALE FOR PUBLIC INTERVENTION

The rationale for the renewable energy support that is outlined in the Action Plan focuses on improving energy efficiency, reducing reliance on imported fuel, stability of energy supply, emissions reduction, efficient and effective energy delivery and empowering the local energy sector.

Justification for intervention in renewable energy industry has generally centred around the fact that energy is an essential resource that impacts on quality of life and economic growth, the necessity for energy stability in the face of oil shocks, the nature of our country's geographical isolation, the need to reduce pressure on the environment of carbon emissions, the need to meet increased demand growth and to work at reducing country's fuel bill especially in light of the high energy reliance for fresh water provision.

Returns on Investment

The Renewable Energy Action Plan makes references to financial sustainability of energy provision however no direct mention of profitability is made. There is no specific mention made of social returns, however there is only one mention with reference to environmental returns, and that is in the case of emissions reduction.

PV panels seem to be the technology of choice, or perhaps convenience, as wind energy has failed to take off in Malta and biogas and geo-thermal energy are similarly appearing to be not suitable for this country.

Solar water heaters, double glazing and energy saving light bulbs seem to be the preferred ways to improve energy efficiency of housing.

Public Debate on Renewable Energy

Maltese society has involved itself in the campaign towards increasing the proliferation of renewable energy technology in Malta. NGOs such as the Malta Energy Efficiency and Renewable Energies Association involve themselves in local debates and educational campaigns. A number of large scale renewable energy projects, such as the offshore wind farm off the western coast of Malta, drew heavy criticism from a number of areas due to the sites proximity (2km) to Malta's largest bird conservation programme, and were put aside. The presence of underwater caves that emerged in initial studies also helped shelve the plans for such wind farms.

The feed-in tariff rates for PV panels were a source of contention with local households as originally these were set at half the price of electricity consumed. Through a recent amendment of these tariffs, there does not seem to be any further public debate on the matter.

Another issue often discussed in the media is the effect of building permits on the ability of households to install renewable energy technology in their homes. The widespread practice over the past decade of using up the top floor of buildings and complexes to contain penthouses means that apartments in such buildings lose the right of access to the roof, and with that the right to install renewable energy technology on such roofs. This has drawn criticism from a number of areas.

Otherwise, little debate currently exists on matters concerning household energy generation.

5. RATE OF SUPPORT AND PROFITABILITY

There are no references made to profitability in any policy documents relating to this topic. The Renewable Energy Action Plan makes references to financial sustainability of energy provision however no direct mention of profitability is made.

There is no variation in relation to profitability considerations between technologies or regions. The supported technologies are those which, through the provision of support, have a potential for financial feasibility within the local domestic context.

The reason why wind turbines are not receiving any funding is two-fold. The first reason given by the energy regulator is that the relatively adverse financial performance of wind technology on a small scale due to the current state of wind technology results in small scale units being very expensive and giving a low output, implying that it is only feasible for

large households or the commercial sector. The second reason given is permitting issues have arisen in the cases where households attempted to apply for them. There is no national planning policy on the use of wind turbines in densely populated areas, which refers to most of the island, and therefore there is a permitting grey area which has not yet been tackled nationally.

While there is no mention in policy documents of using instruments to counter increases in the price of energy, it has been observed that as tariffs for energy and gas consumption in Malta has increased, there is the pressure to counter the negative effect of this on households, through the use of renewable energy grants.

6. COSTS, PUBLIC SUPPORT AND PRICES

The volume of grants given can be seen in Table A above. The largest volume of grants were awarded in 2010 to PV projects, with over EUR 6 million allocated to this, while the only other initiative in 2010 was geared towards solar water heaters with EUR 0.2 million going towards this. EUR 6.2 million is by far the largest amount ever dedicated to renewable energy, with the second largest volume spent on energy saving lightbulbs in 2009 with EUR 4 million spent.

Currently there were no initiatives that were solely aimed at a particular region, although in 2011 a separate scheme for solar water heaters is planned to be launched for Gozo.

The average price per kWp of photovoltaic energy was EUR 4,700 in 2010. There is no information available for the price of energy generated by wind turbines.

Effect on market prices of housing / rent

From desk research conducted, mainly through interviews with estate agents and inquiries through their websites, there seems to be no separate market for energy efficient housing. Prices do not appear to be reflective of energy efficiency characteristics of houses.

7. CONCLUSIONS

The situation for residential provision of renewable energy in Malta is that it is focussed on one technology – Photovoltaic. There has been no real attempt to introduce wind turbines in residential housing or in industry. In housing the main justification for this is the scaling of the technology does not allow it to be viable on small scale projects. The support for Photovoltaic energy generation has been increasing; however this remains at low levels, considering the cost associated with such technology. The revision of the feed-in tariffs that households receive from excess energy generated however will serve as an addition stimulus for the proliferation of this technology. There appears to be a consistent direction of policy towards meeting renewable energy targets for 2020, however the residential sector

does not seem to be playing a strong role in this, with the policy focus in this regard being mainly on state companies and the private sector corporations.

The energy efficiency of buildings is being promoted through a number of schemes that come into force sporadically. There is a lack of a consistent approach to supporting the implementation of technology to improve house insulation and to use more energy efficient appliance and lighting. The erratic nature of these schemes might also be perceived as a motivation to delay the purchasing of energy saving technology in anticipation of the launch of even more attractive schemes, thereby further weakening the market and the adaptation of Maltese housing to the consistent use of such technology.

In addition, there does not appear to be no separate market that valorises changes to the energy efficiency of buildings. It appears that such improvements remain at the fringe of the market and are not yet a core requirement of house buyers or renters. A more consistent approach to the adoption of energy saving technology would also serve as an instigator for such a market to develop.

The reliance on solar energy is an additional weakness to the renewable energy drive. While scale justification for households might be based in research it is hard to extend the same conclusion for enterprises. Feedback given by Malta Enterprise seems to suggest that the time delay in obtaining permits for wind energy projects result in many companies eliminating the technology from their renewable energy plans. Again, a streamlined regulation from MEPA would serve to stabilise and encourage this market to flourish.

A more permanent drive towards supporting households with renewable energy installation and improvements in energy efficiency would generate a stable market and support the demand for such investment by households on a regular basis. This would contribute to a habit forming and consistent gradual increase in adoption of such technology, rather than the sporadic jumps currently generated. An element of foresight into the possibilities of support in the future will also generate a stable planning process for developers to incorporate allowances for such equipment and technology in the construction (or remodelling) of housing.

REFERENCES

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OP1 Cohesion Policy 2007 – 2013 Investing in Competitiveness for a Better Quality of Life; Annual Implementation Report 2009

Eco Gozo; A Better Gozo. Proposed action 2010-2012. Ministry for Gozo, 2009.

The Budget 2010: Ministry of Finance

Malta Enterprise: Incentive Guidelines – Energy Efficiency Measures for the Hospitality Sector

Malta Enterprise – Renewable Energy Support: http://support.maltaenterprise.com/energy//index_files/erdf.htm

Renewable Energy Policy Review – Malta

INTERVIEWS

Rachelle Riolo – Malta Resources Authority

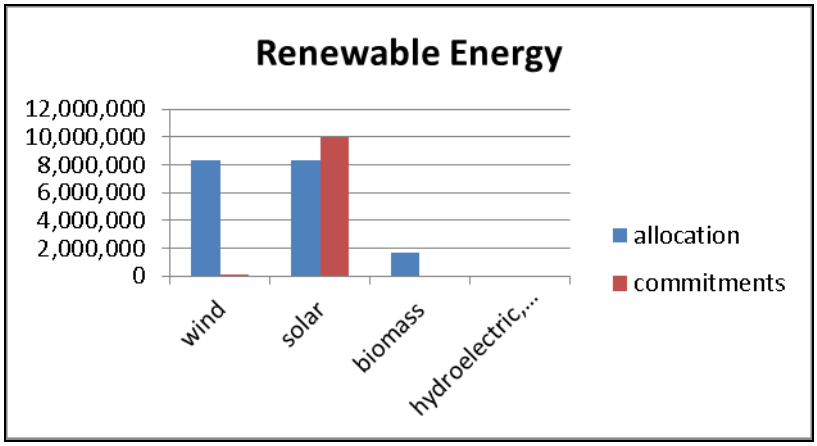
Phillip Caruana – Malta Resources Authority

Paul Baldacchino – Malta Enterprise

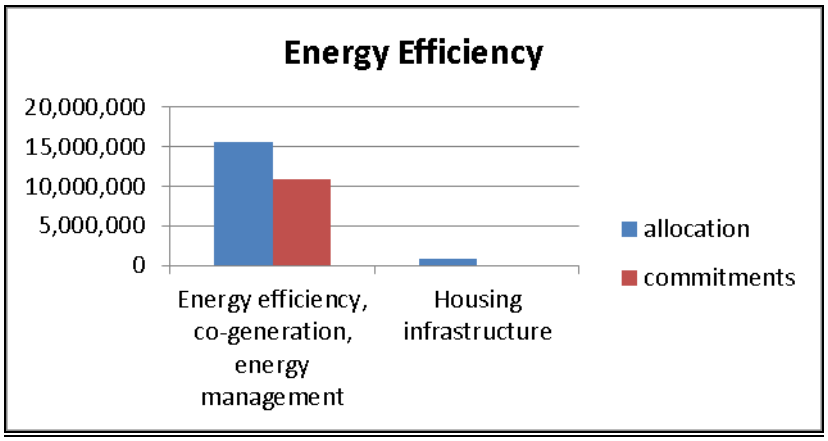
ANNEX

Indicative statistics

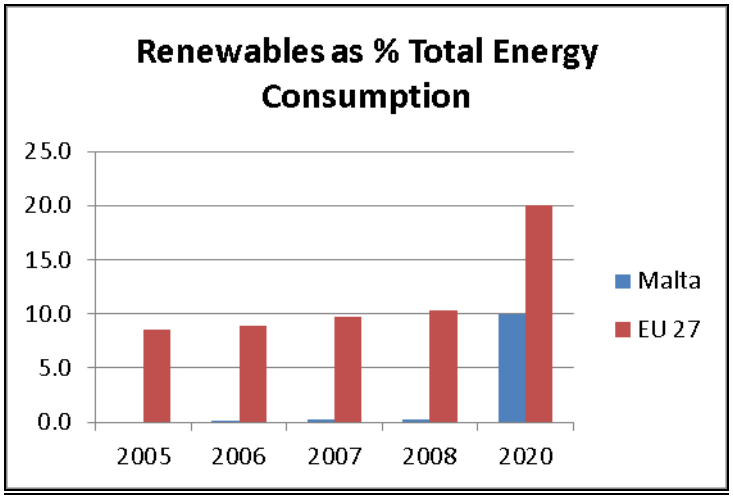
Annex Figure 1 – Renewable Energy by Type in Malta



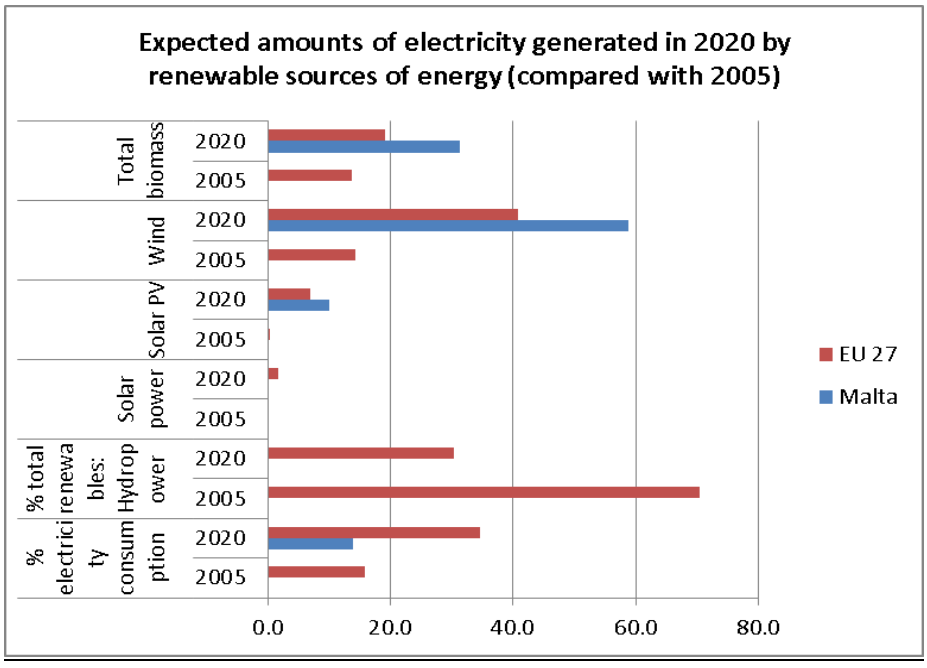
Annex Figure 2 – Energy Efficiency in Residential Housing in Malta



Annex Figure 3 – Renewables as a Percentage of Total Energy Consumption



Annex Figure 4 – Expected Amounts of Electricity generated 2020 vs. 2005



Annex Figure 5 – Distribution of Population by Housing Tenure