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6TH Interregional Event

ENERSELVES

Policy Instruments for Energy self – consumption in buildings

ENERSELVES
Interreg Europe

European Union
European Regional
Development Fund

Country: Malta

Hosting Partner: MIEMA – Malta Intelligent Energy Management Agency

Days: 16th and 17th of May 2018

Introduction

The overall objective of the event was to increase stakeholders' knowledge on the integration of RES in public buildings.

Furthermore, the aim of the event was to present both to partners and stakeholders two Maltese good practices in the field and to present the Enerselves project to the Maltese public.

The 6th Interregional Event was organized in two different locations:

- On the 16th of May 2018, partners and stakeholders visited the Island of Gozo, the second main island in Malta. Here, they attended the first site visit, organized at the Ministry for Gozo, and a workshop, organized in the fortified medieval city of Citadel (Victoria).
- On the 17th of May 2018, instead, the interregional event moved to Valletta, Malta's capital, where the participants attended the second site visit, at the House of Parliament, and a dissemination event, organized in the historical building of St James Cavalier.

During both days, partners participated in a steering committee meeting, in order to discuss on financial issues, EUSEW Energy Week 2018 and action plans drafting.

6th Interregional Event's agenda

Wednesday, 16th of May 2018

Site visit at the Ministry for Gozo

Venue: Ministry for Gozo

0 Transfer to Gozo and Registration of participants
8:00

	1	Welcome Address
0:00		(Vicky Xuereb, Director of EcoGozo, Ministry for Gozo)
	1	Visit to the Ministry for Gozo
0:15		Example of the use of PV power in a public building
	1	Transfer to Cittadella
0:45		

Workshop

Venue: Sentinella tlewwen lic-Cittadella

	1	Registration of participants and coffee
1:00		
	1	EcoGozo policy
1:30		(Christian Cordina, Ministry for Gozo)
	1	Action plan for Gozo
2:00		*12:00 Actions implemented by MIEMA* *(Jesmond Xuereb and Diane Cassar, MIEMA)* *12:20 Actions implemented by the Ministry for Gozo* *(Christian Cordina, Ministry for Gozo)* *12:40 Actions implemented by the Gozo Development Agency – Gozo Regional Committee* *(George Refalo, GDA-GRC)*
	1	Open discussion
3:00		
	1	Next steps / closing remarks
3:30		
	1	Lunch (offered by MIEMA)
3:40		
	1	Transfer to Valletta
7:00		
	2	Social Dinner (offered by MIEMA)
0:30		

Thursday, 17th of May 2018

Site visit at the House of Parliament

Venue: House of Parliament, Triq Ir-Repubblika, Valletta

	0	Registration of participants
9:00		
	1	Visit to the House of Parliament
0:00		Example of the use of Geothermal Energy in a public building
	1	Transfer to St. James Cavalier
0:30		

Dissemination Event

Venue: St. James Cavalier, Pjazza Kastilja, Pope Pius V Street, Valletta

	1	Registration and coffee
0:45		
	1	Welcome address

1:15 (Jesmond Xuereb, MIEMA)
1 Presentation of the Enerselves project
1:25 (Rachel Tully, LP – AGENEX)
1 MIEMA's activities in the Enerselves project
1:45 (Jesmond Xuereb, MIEMA)
1 Good practice 1 – RES technologies in the new Parliament
2:05 Building
(Joseph Grech, GHRC)
1 Good practice 2 – RES projects implemented by the Ministry for
2:25 Gozo
(Christian Cordina, Ministry for Gozo)
1 Build Up Skills – Trainers for green buildings
2:45 (Lawrence Attard, Gozo Business Chamber)
1 Lunch
3:00
1 Open discussion
4:30

Workshop

The workshop focused on the policy that MIEMA is addressing within the Enerselves project, specifically the EcoGozo policy, issued by the Ministry for Gozo, and the actions carried out and to be carried out within the Region for its implementation.

The workshop involved almost 40 persons, including representatives of the Ministry for Gozo and of the Gozo Development Agency (a foundation born within the Gozo Regional Committee that takes care of the implementation of several projects related to the energy efficiency and self – consumption in the Gozo island).

EcoGozo policy

Ms Vicky Xuereb, Director of the EcoGozo Department at the Ministry for Gozo, presented the policy and its main characteristics and objectives.

The aim of the policy is to make Gozo an eco-island by 2020, supported by a keen and committed sustainable community.

The policy, entered into force in 2008, established a new label (the "EcoGozo label") as official sign for those enterprises or entities committed to achieve the EcoGozo's ideals. These label, together with the EU Eco-label for Tourist Accommodation and the EU Eco-Management Standards, serves to identify and certify:

- Organic agricultural products;
- Restaurants which offer local dishes, organic meals and dishes prepared from local produce;
- Environment management standards for both private and public buildings;
- Diving centres respecting the environmental code of practices;
- Gozo crafts and products, made in accordance with the EcoGozo environmental standards.

With regard to the Energy consumption, the EcoGozo policy aims to:

- Facilitate the penetration of renewable energy in Gozo;
- Produce a Masterplan to achieve the production of Gozo's energy requirements from alternative renewable sources by a set target;
- Determine the carbon footprint of residents, tourists and selected activities in Gozo;
- Evaluate and introduce private – public partnership schemes for investment in renewable energy sources including small scale energy generation;

- Introduce an attractive feed-in tariff scheme to support small – scale roof-top electricity generation.

The EcoGozo policy intends to promote the installation, and so the use, of micro – wind turbines, intended as small wind turbines that can be easily installed for the localised generation of energy for small activities and uses.

Furthermore, a study conducted in view of the policy showed that, thanks to the conformation of the territory, the installation of wind farm can cover the 20% of the total energy requirement of the island.

The policy intends to promote, also, the biomass energy from animal waste arising from livestock farming, as Gozo has a high concentration of animals' farms in its territory.

Finally, the policy intends to promote the use of solar energy: the study shows that it could cover the 27% of energy requirements of the island.

Crosswise the promotion of different kinds of renewable energy sources, the EcoGozo policy wants to incentive an eco-friendly transport, not dependent on fossil fuels, through the promotion of bio-fuels and the establishment of reserved parking areas of hybrid and electric vehicles.

Finally, the EcoGozo policies covers a set of topics in view of an eco-island, such as:

- promotion of zero-energy building,
- scholarship schemes for science, engineering, planning and architecture students,
- energy audit in public buildings,
- tax credit system for industries and commercial outlets that use renewable energy sources,
- a green award for green companies, households and villages,
- energy-saving lighting for public spaces and offices,
- free consultation and financial incentives for those who intend to convert their houses to be energy – efficient,
- education and awareness activities.

Activities carried out in favour of the EcoGozo policy implementation

After the presentation of the EcoGozo policy, Mr Jesmond Xuereb (Director of MIEMA), Ms Diane Cassar (Vice Director of MIEMA), Eng. Christian Cordina (Engineer at the Engineering Section, Projects and Development Directorate, Ministry for Gozo) and Mr George Refalo (Executive Secretary of the Gozo Development Agency) presented, respectively, the actions and project carried out, and still ongoing, in the Gozo island in view of a full implementation of the EcoGozo policy and achievement of its objectives.

Mr Jesmond Xuereb presented, in particular, SUPPORT, an Interreg Europe project that MIEMA joined last month. The project intends to identify the barriers for the use of ERDF funds and for planning and implementing integrated sustainable energy plans and measures. Moreover, it aims to identify current practices of the use of policy instruments and collect and review good practices of using ERDF funds as part of the financial strategy for local authorities. Each partner of the project, after having carried out a survey on regional basis, drafted a Regional Background Analysis that served as basis for the identification of a framework of the conditions of the energy efficiency measures in its own region.

This framework is useful to identify the areas where intervene in order to increase the level of EE. The project also foresees a staff exchange that is intended to share good practices all over the participating countries and to favour a peer learning on EE measures. Thanks to this staff exchange it will be, then, possible to draft the action plans to be implemented in the second phase of the project, where carry out specific actions aimed at the improvement of the energy efficiency in each partnership regions.

Eng. Christian Cordina presented the SHERPA project (Shared knowledge for energy renovation in buildings by public administration), an Interreg MED project that intends to raise awareness and capacity for a better management of energy in public buildings at transnational level with a focus on the reinforcement of the capacities of public administration at regional and sub-regional level so as to improve the energy efficiency in their public buildings' stock and reduce CO_2 emissions. The project intends to test and implement a holistic, transnational and peer – to – peer approach based on 4 key performance elements in EEB: governance, information, awareness and training and financing. This activity will lead to the draft of a roadmap for the development and implementation of EEB strategies.

With regard to MIEMA's projects, Ms. Cassar presented three projects that have a specific focus on the island of Gozo, all financed by the Interreg MED programme of the European Commission. The first project presented was PRISMI, through which the potential for increasing RES in Gozo has been assessed. A number of tools were developed through PRISMI which allow simulating in increase in RES, including PV, wind and wave energy. In particular the project, ended last April 2018, developed a methodology that enables to map and estimate the potential of RES in smalls islands and to simulate energy scenarios to reach significant energy sustainability and decarbonisation. This methodology is applicable thorough a user-friendly toolkit for energy scenarios and related techno-economic feasibility analysis.

LOCAL4GREEN project was also presented which focuses on the design and implementation of green fiscal policies which can incentivise the use of RES both in public and private sectors and households as well, mainly in the framework of the Sustainable Energy Action Plans adopted by Local Authorities signatories of the Covenant of Mayors. Thus, the project support the testing of innovative local green fiscal policies and monitor their results in spreading RES.

The third project presented was PEGASUS. Micro-grid business models are being designed as part of this project, based on real energy generation and consumption data being collected through a pilot implementation in Gozo. The purpose of these microgrids is to optimize the aggregated energy consumption of a pool of consumers. The project also focuses on awareness stakeholders awareness on the topic and on the microgrids and building the capacity of public sector personnel on SEAP and ERDF measures and governance models.

Finally, Mr George Refalo presented, among the others, the Enerj project (Joint actions for energy efficiency – Interreg MED), aiming to enhance and improve the coordination of sustainable energy action plans (SEAPs) and other relevant energy efficiency plans by the development and the testing of a technologically oriented methodology for increasing cooperation among public authorities through joint actions. The project foresees the delivery of training courses for public employees and energy managers and activities aimed to raise stakeholders' awareness on the energy efficiency measures. Finally, the project also foresees the development of a web platform where stakeholders can take advantage of uploaded scenarios and impacts' assessment of joint actions.

First Site Visit – PV Installation at the Ministry for Gozo

The 6th Interregional Event of the Enerselves project started with a trip to the Gozo island and a site visit to its main institution: the Ministry for Gozo, in particular to its roof where we can find a PV installation.

Partners and stakeholders were divided in two groups and Eng. Christian Cordina, from the Ministry for Gozo, showed them the PV installation placed on the roof.

The solar panels where installed thanks to a project carried out between 2006 and 2015, with the aim of investing in alternative energy systems and combatting the effects of global warming. The main result of the project is a reduction of the Gozo island's dependency on finite, fossil fuels for energy generation and a reduction of carbon dioxide emissions and other pollutant emissions.

The project was addressed to the Government's objective to increase its share of renewable energy and to achieve the target of 10% of the country's energy demand from renewable sources by 2020.

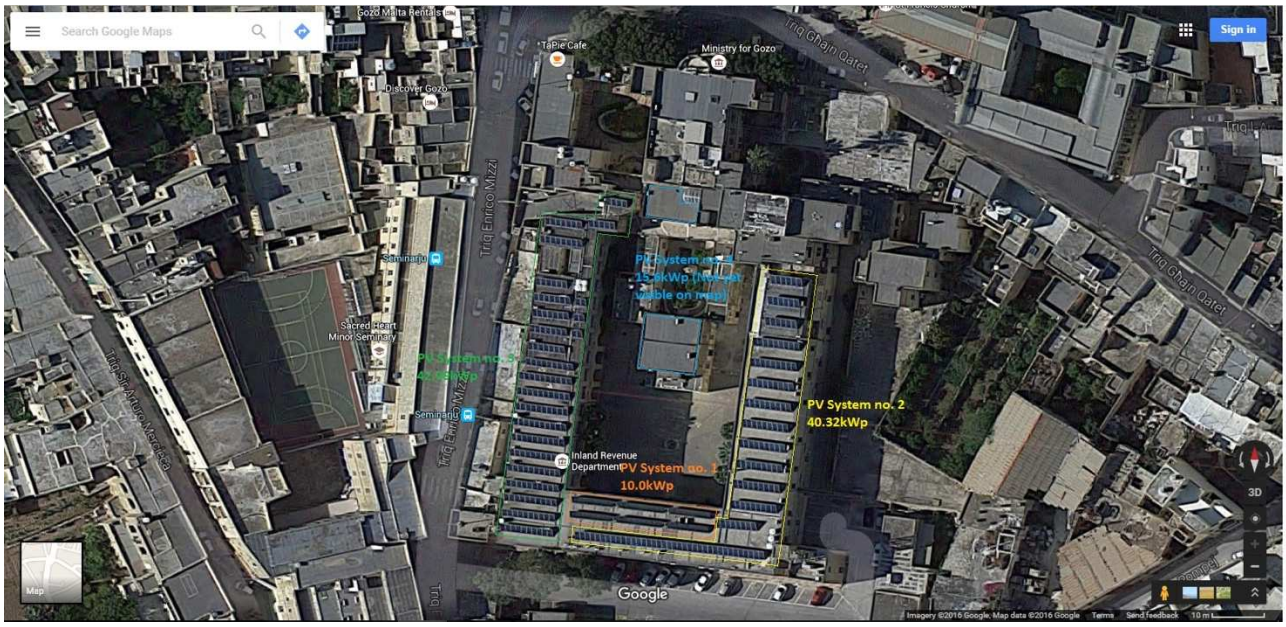
The PV installation on the Ministry roof is also expression of a "leading by example" policy and a show-case of environmentally-friendly energy generation in Gozo.

The PV installation at the Ministry for Gozo was implemented in 4 major projects:

1. PV System 1: capacity 10.0 kWp
2. PV System 2: capacity 40.32 kWp
3. PV System 3: capacity 42.09 kWp
4. PV System 4: capacity 15.6 kWp

With a total amount of 437 panels installed.

The PV systems consist of a mixture of polycrystalline and monocrystalline PV panels, operated through a net metering arrangement and with a total capacity of 108.01 kWp. The PV systems generate between 150.000 and 180.000 kWh per year: considering that the building consumes on average 326 MWh every year, the PV installation generates roughly 50% of the building's energy demand. This means that the annual energy saving measures, if based on a rate of 15c, are between 22.250 € and 27.000 €.



Second Site Visit – Geothermal system at the House of Parliament

The second day started with the site visit at the House of Parliament. Eng. Joseph Grech presented the geothermal system installed inside the Parliament. The group was first hosted on a hall for a more general introduction and then conducted to the very system. Finally, as part of a city gate complex, the group was conducted on a visit of the whole infrastructure.

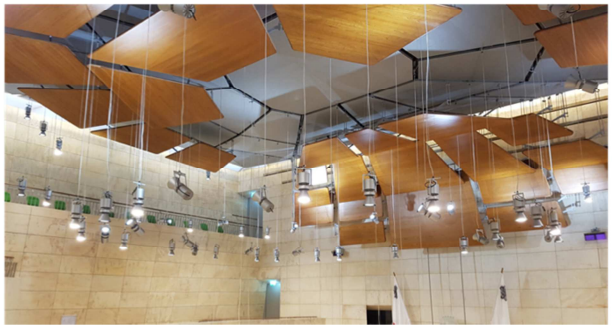
The Parliament building is a successful example of NZEB combining passive design, low energy consumption and use of renewable energy sources, so to reach energy efficiency standards, even above the legal requirements.

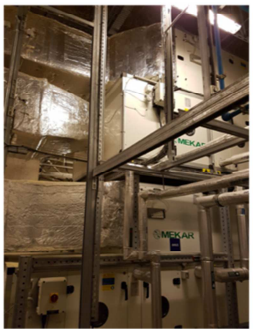
The geothermal system was built thanks to an Arch. Renzo Piano's project, called the "City Gate project", aimed at the complete reorganization of the main entrance to the city of Valletta. In particular the geothermal system, together with the installation of solar panels on the roof of the building, was installed in order to make the House of Parliament a nearly-zero-energy building.

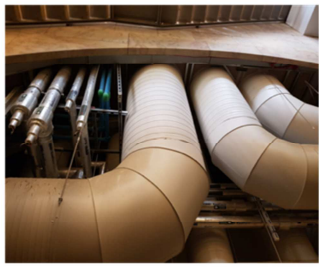
The system was installed by the Grand Harbour Regeneration Corporation plc (a fully stated – owned company) and the project was carried out between 2011 and 2015. The project was promoted by the Ministry of Finance, Economy and Investment and the Ministry of Infrastructure, Transport and Communications.

The City Gate project was intended to the reorganization of 4 areas:

- A new building for the House of Parliament, divided in two main blocks hosting one the Parliament Chamber and the other one the governmental offices;
- The reconstruction of an open-air theatre over the ruins of the former Royal Opera house;
- The Valletta city gate and the site immediately outside the walls;
- The landscaping of the ditch outside the city walls.







The construction of the Parliament building took into consideration the following environmental issues:

- A passive design: the stone envelope was designed to reduce solar heat gain and allow natural ventilation. The thickness of the envelope has been dimensioned according to the energy balance, also providing insulation of walls and roofs. Moreover, the irregular morphology of the façade creates indirect shadows, reducing the surface temperature.
- The use of Renewable Energy Sources (RES): cooling & heating are obtained through geothermal heat pumps using boreholes sunk into rock 140 m deep. Energy needs can be covered almost entirely (100% in winter and 80% in summer) by 160 sq. m of PV panels, located on the roof.
- Installation of energy saving devices and smart control tools: use of efficient lighting with presence detection; low-energy air displacement systems; rainwater harvesting systems; building management system; mechanical ventilation and heating/cooling shut down automatically when windows are open; metering and sub-metering of equipment.

Data and Key Performance Indicators

Building 1: Ministry for Gozo	
Installation: PV system	
Renewable power (kW)	108.01 kWp
Type of energy generated	Electricity
Energy generated per year (kWh)	167.000 kWh/year
Energy self – consumed per year (kWh)	Between 150.000 and 180.000 kWh
Emissions saved ($kgCO_2$/year)	120.400 $kgCO_2$/year
Investment (€)	252.300 €
Payback (year)	172.000 kWh/year
Save annual cost – average – (€)	n/a
Grant type (if any)	ROP ERDF 2007-2013

Total quantity of grant (€)	n/a

Building 2: House of Parliament	
Installation 1: geothermal system	
Renewable power (kW)	
Type of energy generated	
Energy generated per year (kWh)	
Energy self – consumed per year (kWh)	
Emissions saved ($kgCO_2$/year)	
Investment (€)	
Payback (year)	
Save annual cost – average – (€)	
Grant type (if any)	
Total quantity of grant (€)	
Installation 2: PV system	
Renewable power (kW)	
Type of energy generated	
Energy generated per year (kWh)	
Energy self – consumed per year (kWh)	
Emissions saved ($kgCO_2$/year)	
Investment (€)	
Payback (year)	
Save annual cost – average – (€)	
Grant type (if any)	
Total quantity of grant (€)	

Dissemination event

The interregional seminar concluded with a dissemination event gathering both foreign and local stakeholders, mainly from public administrations.

After a welcome address of MIEMA's director, Mr Jesmond Xuereb, Mr José Luis Prieto, president of AGENEX (lead partner of the Enerselves project) and Ms Rachel Tully (project coordinator of the Enerselves project) presented the project, its main objectives and activities.

Then, Mr Jesmond Xuereb, presented the activities carried out by MIEMA within Enerselves and those activities that it shall implement in the next months.

He also presented to the public the characteristics of the House of Parliament, in terms of good practice in the field of energy self- consumption in public buildings.

Whereupon, Mr Lawrence Attard, on behalf of Gozo Business Chamber presented the BuS.Trainers project, an Erasmus plus project in which MIEMA is partner, aimed to increase the knowledge and capacities of VET trainers in the building sector.

The project was presented as in line with the actions that MIEMA will include in the action plan to be drafted within the Enerselves framework, and as ongoing good practice for the improvement of green skills and energy efficiency in the building sector in order to incentive the construction of nearly – zero – energy buildings.

In fact, the BuS.Trainers project wants to increase the green skills of those trainers who works in the building and construction sector in order to share their new knowledge even with workers and future workers of the sector. The training focuses on several topics, such us: life cycle assessment, sustainable construction, environmental certification and labelling, eco-friendly and innovative materials, deconstruction, energy efficiency and renewable energy sources.