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RESINDUSTRY

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Development Fund

Action Plan

Sustainable growth and jobs 2014 – 2020
and
A vision for an Eco-Island

Developed by the partner: Ministry for Gozo

MINISTRY FOR GOZO

Low-carbon economy

CONTENTS

I. AP CONTEXT OF RES IN INDUSTRY

I.I. AP GENERAL INFORMATION

Project	Policies for Renewable Energy Sources in industry
Partner organisation	Ministry for Gozo
Other partner organisations involved (if relevant)	
Country	Malta
NUTS2 region	Malta
Contact persons	Christian Cordina – christian.a.cordina@gov.mt Roderick Cordina – roderick.a.cordina@gov.mt

I.II. CONTEXT OF GOZO RES ASSESSMENT

In Gozo and Comino the GVA distribution follows a similar schema than at national level:

- Manufacturing industry, agriculture and construction contribute to close to 10% of regional GVA.
- The industries of wholesale and retail trade comprises around 25% of GVA.
- The services comprising public administration and defence; education; human health contribute around 25% of the GVA.
- Economic activities relating to professional, scientific and technical activities close but below the national 15% of the total GVA.

Energy consumption in the industrial sector.

With more than 90 % use of petroleum and products, the energy mix of energy primary products in Malta differs strongly from the average energy mix in the EU.

Malta presents major energy consumptions in industries which are not traditionally the most consuming, with 1/3 of the consumption coming from other industries, while machinery covers 23,8% and food 14,1%, with chemicals (10,3%) being major consumers (2017 data). Other classical European consumers sectors, such as non-metallic (1,8%), textile (6,3%), paper (5,2%) or steel (0%) have lesser impacts in the general consumption.

Renewable energy use in the national industry.

Malta's potential for renewable energy deployment is mainly affected by physical and spatial limitations, and resource potential, with resource availability and cost of land being the predominant barriers for further deployment.

- The geology and topology of the island does not lend itself to the production of hydro (highest point: 253m above sea level) or geothermal energy (no significant thermal gradient).
- Fresh water and agricultural land are both scarce, thus biomass production is not an option.
- Wind was assessed thoroughly, but conventional wind technology has been found to be largely incompatible with the local context.

Malta's RES mix includes a basket of sources which individually contribute a percentage share, with the majority produced from solar-based systems.

- PV technology has turned out to be the most robust of all indigenous sources. It has a successful history of public and direct Government initiatives and also of substantial Government support to the private sector to promote this technology to its maximum reasonable potential in Malta.
- Solar water heating systems in private households are supported with grants. Deployment of such systems took place mainly between 2009 and 2011 but uptake has levelled off. The cost of solar based renewables support schemes is supported through the state budget rather than being passed directly onto final consumers.

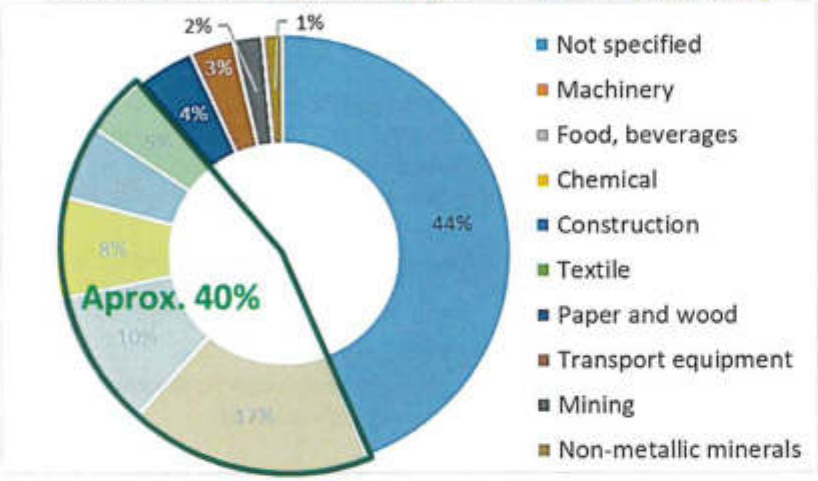
The industrial sectors selected.

The Market Analysis carried out in the Regional Assessment of the industrial energy sector, has provided a detailed view of the energy consumer sectors of the national and regional industry, with the information necessary to propose measure to integrate renewable energies in these industries.

The selected industries are the 4 most energy consuming sectors in Malta, covering close to 50% of energy consumption in industry, which together with not-specified industries will reach 90% of energy consumption:

- ✓ Machinery
- ✓ Food, beverages
- ✓ Chemical
- ✓ Paper and wood

Sectors selected and their final energy consumption share (IEA 2018)



The Key Performance Indicators (KPI) analysed.

In the Market Analysis, KPIs were defined in order to make easier the comparisons with the energy consumptions between industrial sectors, or even between national sector at EU level, trying to provide conclusions on the different countries. KPIs support decision making by defining frames where total energy consumption of the industries can be disaggregated by potential RES technology.

As the analysis has to be made from the point of view of the public administration, where public funding is to be allocated to leverage private investment, in the "conclusions" chapter, these KPIs have been transformed into impacts for each public euro invested.

KPI indicators
RES supported (kWth)
RES produced (kWh th)
Full-time employment (FTE)
Avoided emissions (Ton CO2)

II. POLICY CONTEXT

There are 2 Policy instruments which will be improved thanks to the knowledge acquired in the learning process produced in RESINDUSTRY project, the policies are:

Policy 1. The policy included in the application form.

Name of the policy instrument addressed
A vision for an Eco-Island

The Action Plan aims to impact:		Investment for Growth and Jobs programme
		European Territorial Cooperation programme
	X	Other regional development policy instrument

Policy 2. New policy not included in the application form.

Name of the policy instrument addressed
OPERATIONAL PROGRAMME UNDER THE 'INVESTMENT FOR GROWTH AND JOBS' GOAL - 2014MT16M1OP001 - Fostering a competitive and sustainable economy to meet our challenges

The Action Plan aims to impact:	X	Investment for Growth and Jobs programme
		European Territorial Cooperation programme
		Other regional development policy instrument

II.I. DETAILS OF THE "VISION FOR AN ECO-ISLAND"

Through this policy instrument, Gozo Ministry aims to transform Gozo and Comino into an eco-island environment by 2020. Among the initiatives it is supporting investments designated to wean the island's dependency on fossil fuels. This is being achieved through a combination of public leadership, where all public buildings are installed with renewable energy facilities and launching of incentives to encourage private uptake of such technologies.

The EcoGozo policy was launched on 2008, and was reinforced by a new strategy in 2021 which will cover until 2030, in order to foster a long–term commitment in the implementation of strategies with high level of sustainability on four major pillars: environment, economy, society and culture.

eco GOZO
A BETTER GOZO

EcoGozo policy covers the twenty year period up to provide:
- a strategic direction and context to guide both Government and the private sectors in development matters.
- policies to be applied in development permit applications.
- a strategic context for the preparation of site specific Local Plans, Subject Plans, Action Plans and Briefs.
- the identification and promotion of opportunities for development and to harness private sector resources to assist in carrying out that development.

To deal with area planning on a specific and detailed basis and to respond to local issues, the Structure Plan works on seven local plans. The Gozo and Comino Local Plan was formally approved in July 2006 by the Malta Environment and Planning Authority so as to focus on spatial planning, control and enforce development, and plan and manage rural, coastal and marine areas.

Thanks to the different initiatives of the EcoGozo policy, based on the National Statistics Office data (2017), Gozo has installed 6.8713 MWp of renewable energy in public and private installations. Of this capacity, the domestic sector registered the highest upkeep with 53.03%, followed by the commercial and industrial sector (39.32%) and the public sector (7.65%). The estimated energy generated in higher than 25 GWh electricity.

The strategy of this local plan is based on the principles of sustainable development that is, promoting development whilst ensuring that the natural and cultural capital of the islands is safeguarded for the enjoyment of current and future generations.

The Gozo and Comino Local Plan aims:

- to ensure that enough land is available for the future envisaged spatial development requirements,
- to continue safeguarding and enhancing the unique cultural and natural characteristics of the island,
- to encourage development which creates economic development, improves the quality of life and the environment, is compatible with planning policy, and with surrounding activities is efficient on land use.

The EcoGozo vicion has been recently reinforced by the Regional Development Strategy for Gozo 2021 – 2030, which include new funding lines and key priority areas of EcoGozo vision, which are:

- ✓ Spatial Planning and Sustainable Urban Development
- ✓ Infrastructure and Accessibility
- ✓ Economic and Talent Development
- ✓ New Economy
- ✓ Sustainable Tourism
- ✓ Social Development
- ✓ Rural Development and Eco-Gozo
- ✓ Culture, Heritage and the Arts

Future support to RESINDUSTRY activities may came from the Priority Area 1: Gozo Spatial Planning and Sustainable Urban Development, and inside it from the "M1.7 Generating Green Friendly Energy and Achieving Public Buildings Resource Efficiency".

M1.7 Generating Green Friendly Energy and Achieving Public Buildings Resource Efficiency is a multi-pronged strategy directed at generating green friendly energy in all sectors.

Actions might include:

(1) the setting up of mini sized PV (solar energy) parks built on green roofs and;
(2) The identification of public buildings to be transformed to energy efficient buildings.

II.I.A. PROPOSAL OF IMPROVEMENT FOR ECOGOZO IN AF

The application form defined the expected improvement that the project action would be able to apply on the Policy Instrument, by describing the necessities to cover and the type of actions foreseen to be implemented at the end of the project.

In GOZO case, the necessities to be covered and the expected changes in the Policy Instrument were:

- ✓ Integration of EE Actions and RES technologies in the private sector is not strongly emphasized. Support for integrating RES in industrial production is only minimal.
- ✓ EE measures to decrease energy dependency are necessary, however they need to be complemented with new grants for RES integration in industrial production.
- ✓ OP needs to be improved by increasing the share of renewable supports, and by identifying proper KPIS which allow the Regional Government to select RES funding technology

Furthermore, it needs a deeper cooperation in relation to the use and promotion of structural funds and other funds for the financing of energy-related projects and measures.

Through the learning process and the Action Plan activities, the project is expected to influence the Policy Instrument. In terms of results, the influence on policy instruments can be produced in various ways which can sometimes be interconnected. Following the guidelines of the program Manual pre-identify influences and predefined improvements, GOZO identified several potential improvements to be achieved in its Policy Instrument:

A) TYPE 1: IMPLEMENTATION OF NEW PROJECTS
The minimum objective is to find inspiration in other regions and import best samples of RES integration in industries to be financed within their Gozo Eco-Island Fund, so funding new projects based on the acquired experience.

B) TYPE 2: CHANGE IN THE MANAGEMENT OF THE PI / IMPROVED GOVERNANCE.
a) The Action Plan would include the delivery of a "Strategic Analysis of RES Technologies applied in industries" where a proposal of KPIs will be used as new methodology for the grants management, so the MA will improve the way thematic calls are organised and/or the way projects are selected.

b) The Action Plan would include the delivery of a "Monitoring system for calculating the long-term impact of SF" where a proposal of monitoring will be proposed to measure ECO GOZO impacts.

c) The Action Plan would include the creation of a communication channel/platform between industry and MA, so the final beneficiaries of the SF will be able to influence in the calls definition or provide feedback.

As an advance of the achieved impacts, and expected future impacts, ECO GOZO:

1. Has already integrated learned experience in the definition of a pilot project funded in Comino Island, covering Type 1 of influence.
2. Has received the KPI reports which is to be used in the future call of projects, covering Type 2a of influence.
3. Expects to launch the communication channel/platform between industry and MA to receive feedback from the use of grants in the promotion of RES,

II.II. DETAILS OF THE OP "2014MT16M1OP001"

- Selected thematic objective: 04 - Supporting the shift towards a low-carbon economy in all sectors
- Specific objective SO 2
- Title of the specific objective: Promoting the use of RES and EE within the commercial and industrial sectors through financial incentives and financial instruments.
- Selected investment priority: 4a - Promoting the production and distribution of energy derived from renewable sources.
- Selected investment priority: 4b - Promoting energy efficiency and renewable energy use in enterprises
- Selected investment priority: 4c - Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing sector

Priority Axis 4: Shifting towards a low-carbon economy.
Moving towards resource-efficiency, low-carbon economy and sustainable growth is one of the central objectives of the Europe 2020 Strategy and remains one of Malta's top priorities for the 2014-2020 period.

In order to address environmental challenges such as the high reliance on imported fossil fuel oil for energy generation, the carbon emissions footprint of industry and enterprises and low energy performance in buildings, this OP enables the provision of measures to implement a more sustainable energy mix and shift towards cleaner energy whilst supporting climate change objectives.

Measures under this priority axis will aim to increase the share of renewable energy sources through interventions and initiatives for households, enterprises and the public sector. Infrastructural investment undertaken through this Programme will seek to maximise the use of renewable energy and energy efficiency in all interventions co-financed.

Promoting the use of RES and EE within the commercial and industrial sectors through financial incentives and financial instruments.

Malta's heavy dependence on imported fossil fuel oil as its primary energy resource results in security of supply concerns, vulnerability to high international market prices, a high carbon footprint and has a negative impact on the environment whilst bearing in mind that it is a non-renewable resource.

In turn, electricity pricing has an impact on the competitiveness of the country which is significantly sensitive to high energy costs. On the other hand, diversifying energy supply from the use of imported fossil fuels towards low carbon and renewable sources will lead to increased security of supply and improved overall competitiveness, creating new industries, businesses and jobs and contributing towards economic growth.

The energy generation from RES within enterprises remains low showing that substantive investment is necessary in forthcoming years to contribute towards a low carbon economy. Government will stimulate the commercial and industrial sectors, which account for over 50% of the energy consumed locally to contribute towards the low-carbon economy in order to increase the generation of energy from RES and improve energy efficiency in the commercial and industrial sector.

The achievement of results under this investment priority will contribute towards achieving Malta's national 2020 target of producing 10% of energy from renewable energy sources and address the relevant CSR. It is estimated that PV generated energy from enterprises is 67% of the total share of PV generated energy contributing to the 2020 RES target.

Selected investment priority: 4b - Promoting energy efficiency and renewable energy use in enterprises

❖ Financing

With a high demand for energy use, high energy prices and with a currently limited energy generation from renewable energy sources, the promulgation of energy efficiency and renewable energy technologies by enterprises in the coming years is imperative as it will contribute towards the greening of enterprises resulting in increased competitiveness and more efficient and cost effective operations due to reduced energy costs and increased energy savings.

This approach will also contribute towards Malta's EU2020 targets in the energy sector. Within this context, Government will provide financial instruments to stimulate investments in RES. Such measures will be complemented with the provision of financial incentives to support enterprises to invest. During the 2014-2020 programming period, Government will support a range of financial incentives including financial instruments and grants.

❖ Open calls

The Managing Authority (MA) will launch calls for project proposals highlighting which priority axis is open and who is eligible to apply. The criteria for selection of the projects will be proposed by the MA, amongst others, when selecting projects include the:

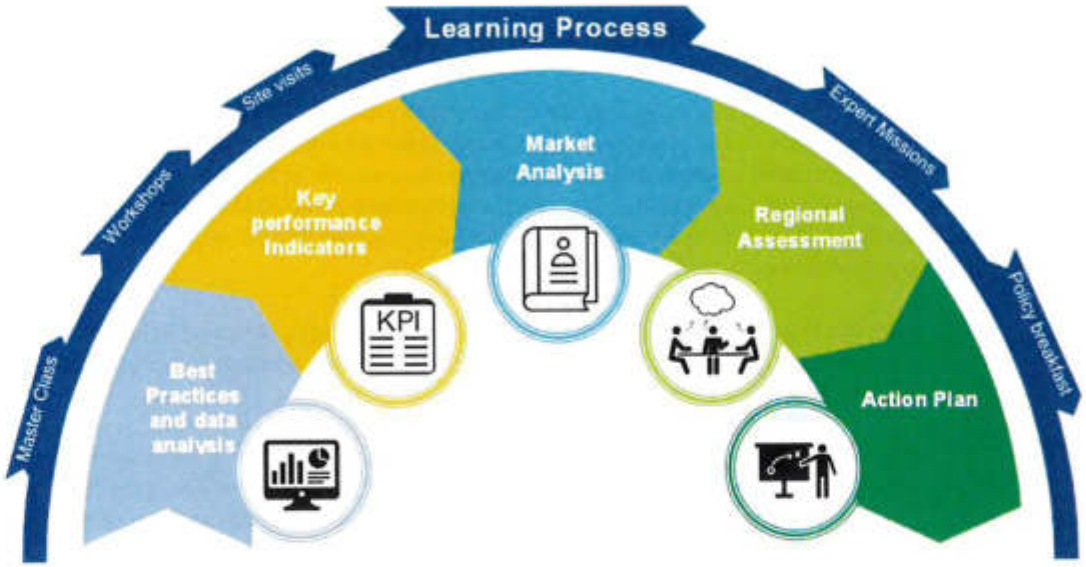
- quality of the project proposal and its potential to contribute towards the achievement of the expected results as stated in the Operational Programme (OPI);
- overall costs of the proposed project, including the project's cost effectiveness and project sustainability;
- degree of additional leverage that the project will obtain through the deployment of EU funds;
- effective integration of the horizontal principles (particularly sustainable development and equal opportunities principles) in the proposed project;
- capacity of the organisation to implement the proposed project; and
- state of readiness for the commencement of the project.

❖ Small projects

Taking into account the duration of the selection process, in the last year of the Implementation of the Operational Programme it may not be feasible to launch an open call for residual funds (savings from approved project). In this regard the Maltese Authorities propose that close funds may also be allocated directly to small projects that contribute to the achievement of the objectives of the OP. The decision of the Managing Authority to follow the said procedure in such cases shall be final. The size of each individual operation that can be selected under this procedure will not exceed €150,000 in total public eligible cost.

II.II.A. PROPOSAL OF IMPROVEMENT FOR 2014MT16M1OP001

The Operational Programme - 2014MT16M1OP001 - Fostering a competitive and sustainable economy to meet our challenges, was not initially included in the application form as the policy instrument to be improved, but resulted one of the benefits of Resindustry learning process, which has already achieved results.



Thanks to the different learning actions, Gozo Ministry has influenced the policy instrument (Operational Programme) in the type of influence 1 as it is defined in the program Manual pre-identify influences:

- Type 1: implementation of new projects, where managing authorities and other relevant bodies can find inspiration in other regions and import new projects to be financed within their programmes.

In the corresponding section, it will be explained how a current call for proposals of grants for RES application in buildings has been improved including new technologies which provides better KPIs, as a result of the several study visits and cases found in the different project exchanges.

The Operational Programme 2014MT16M1OP001, Fostering a competitive and sustainable economy to meet our challenges, managed by Gozo Ministry has already been improved thanks to RESINDUSTRY project, through the launching of a modified call for grants, which has been designed taking into accounts some of the experiences of the project.

2021 call for grants includes new technologies, which has been proved to create better KPIs for Malta, after the identification of these KPIs in the regional analysis, and the confirmation of the good results of the technology in different site visits in partner countries, which were finally reinforced by the Master Class and Expert Mission.

III. DETAILS OF THE ACTION FOR THE OP "2014MT16M1OP001"

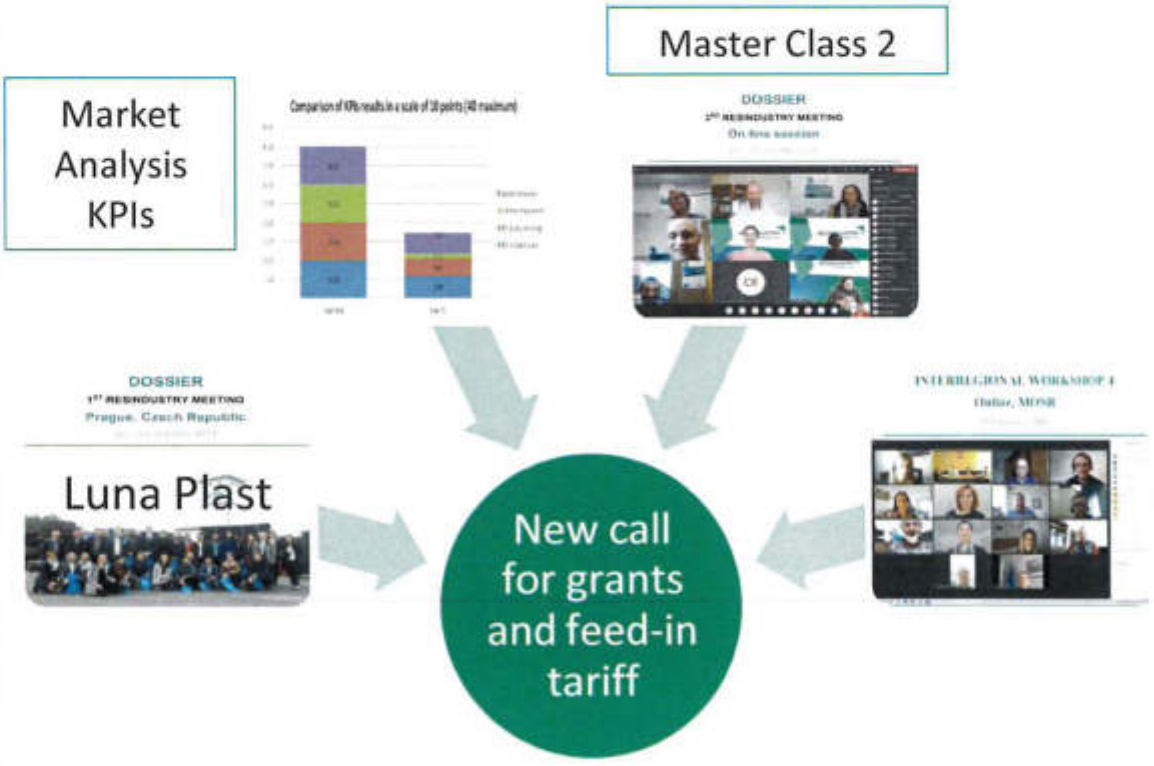
III.I. ACTION 1. NEW CALL FOR PROPOSALS WITH IMPROVED TECHNOLOGY

III.I.A. THE BACKGROUND

The learning process, which has led to the improvement of this policy, started in the first study visit to Luna Plast company in Hořín nearby Mělník in the Czech Republic in October 2019, where the visit to the plastic factory included an explanation of the photovoltaic system integrated in the rooftop and using storage system to cover electricity demand peaks, which usually where produced in the moment where the price of electricity was the highest. The technology was standard and not new, but the results were interesting in terms of financial and environmental achievements.

After the first meeting, several other visits reinforced the idea of PV technology as main tool for countries with less wind or biomass resources, which is the case of Malta, and led to the resolution of focusing the Regional Analysis to this technology.

During the Market Analysis, the KPIs related to solar installation in Gozo were the unique solutions which achieved energy cost which could be in position to compete with the energy prices, and thus where subject to a larger analysis, however the results were not initially conclusive and the scoring of PV technology in the different best practices and samples was lower than solar thermal technology.



In Master Class 2, partner where able to exchange the results of the different regional assessment, comparing the key performance indicators and analysing them with the Polish expert Mr Tomasz Fiszer, owner of Trade-Off company and an energy market consultant on the use of RES in industry. During this meeting the technological solution based on PV and storage system through batteries was discussed as a better environmental and economic solution, which has more benefits and better KPIs at long term, but several barriers were identified:

- Higher up-front investment, which required more effort for companies and private owners when selecting PV installation with or without batteries.
- Lack of experience suppliers which have led to some not good samples in the long-term benefits of this combination of technologies.
- Current increase of raw material prices was leading to longer turn-over which created new barriers to companies investment.

The solution of PV installation with batteries was not part of the current specific objective "Promoting the use of RES and EE within the commercial and industrial sectors through financial incentives and financial instruments" of the OP 2014MT16M1OP001, and Gozo Ministry staff considered that the combination of technologies required an internal analysis in order to find the equilibrium of private investment and public support which will be required in order to launch this kind of combination, which were proven to be more efficient in other countries in terms of KPIs, both environmental, economic, and stability grid.

Gozo Ministry staff made internal calculation, also supported by the service provider hired for the Market Analysis and Regional Assessment, and reached some initial conclusions in terms of public support to be made to private promoter of PV combined with batteries. The policy solution will be a complex combinations of grant system to support the higher up-front investment, while including a feed-in tariff that will support the long-term higher maintenance cost of the system while providing a better turn-over of the investment.

During the definition of the different option of solutions, the staff used the institutional internal meeting and the local stakeholders meeting to create consensus among the future users of the policy tool, on the demand and offer sides.

This solution was also discussed in the Interregional Workshop 4 led by the Office of the Marshal of the Świętokrzyskie Voivodeship, where technical partners from Energy Agencies such as Agenex or TREA, and CTU UCEEB, gave their point of view over the benefits of the combination of technologies, and the different policy schemes in their region. Indeed, it resulted that the solution planned by Gozo was somehow innovative thanks to the combination scheme of grant and feed-in-tariff, which was not currently used in those regions.

Ell this process concluded with the launching of the new call for grants 2021 Renewable Energy Sources Scheme, 1.1: Application - Part A – 2021 Renewable Energy Sources Scheme.

III.I.B. ACTION 1.1. LAUNCHING OF A NEW CALL FOR PROJECTS

Gozo Ministry has already launched the new call for Grants in 2021 (full text here).

Summary of the call for grants 2021 Renewable Energy Sources Scheme, 1.1: Application - Part A – 2021 Renewable Energy Sources Scheme.

The RES Scheme is administered by the Regulator for Energy and Water Services to further encourage the better use of the renewable energy being generated by the country. This scheme was launched by means of Government Notice 302 of 2021

This scheme has been extended until 31st December 2022 by means of Government Notice 1666 of 2021

In case of acceptance, applicants are refunded:

- ✓ Option A - PV system with standard solar inverter: 50% of eligible costs up to a maximum of €2,500 per system and €625/kWp.
- ✓ Option B – PV system with hybrid inverter: 50% of eligible costs up to a maximum of €3,000 per system and €750/kWp.
- ✓ Option C – Hybrid/Battery inverter and battery: 80% of eligible costs of the Battery Storage up to a maximum of €3,600 per system and €600/kWh plus 80% of eligible costs of the Hybrid inverter up to a maximum of €1,800 per system and €450/kWp.
- ✓ Option D – Battery Storage only: 80% of eligible costs of the Battery Storage up to a maximum of €3,600 per system and €600/kWh.

III.I.C. PLAYERS INVOLVED

The partners involved in the implementation of the action have been the Gozo Ministry staff, those directly working in the Eco Gozo vision, and those working in the Energy Division of the Ministry, which defined the technical aspect of the call.

In terms of interregional cooperation, there was a mix of activities and key player which supported the design and implementation of the final policy system.

The implementation and monitoring phase will require the involvement of the Energy Division and the EcoGozo visio staff, due to it is expected to report the number of project finally requesting the new system, together with the main KPIs achieved thanks to the new policy instrument in comparison to the previous technologival solutions.

III.I.A. FOLLOW-UP ACTIVITIES WITH STAKEHOLDERS

During Phase 2 of the project, Gozo Ministry foresee to keep involving stakeholders of this Policy Instrument in the follow-up of the policy implementation, analysis and conclusions.

Gozo Ministry will promote the participation of 10 stakeholders in different internal actions and project actions, such as:

- Internal Institutional Meetings, which will continue in Phase 2 (1 or 2 meetings), and will focus on the presentation of the policy results in relation to the new improvement adopted, presenting results about number of projects funded with this new tool and main KPIs achieved.
- Policy Breakfast will continue during Phase 2 (1 or 2 breakfasts), keeping policy makers informed about main achievement of the new policy, providing feedback based on the monitoring system, and proposing new solutions for future call for grants.
- Resindustry project meetings and final event, where main policy responsible will be invited to participate, so they can explain the achievements of the new policy tools.

III.I.B. IMPACT MONITORING IN PHASE II

In order to confirm the effectiveness of the new policy, to monitor the real impact, their achievements and future reutilization, Gozo Ministry will develop a simple monitoring system based on the register of grants.

The simplest way to monitor the policy will be through the registry of projects funded, where some data will be requested to the staff in charge of the Energy Division, identifying number of grants provided, main technical and economic data of the investment for both PV and battery system.

With this information, Resindustry Gozo staff will develop a monitoring and calculation of KPIs at economic and environmental level.

Additionally, for some of the grants, a survey will be launched requesting some feedback about the policy effectiveness, the barriers found and the main modification to be proposed. This online questionnaire will be sent to some of the grants beneficiaries in order to achieve a qualitative evaluation of the policy and receive feedback which will be used to improve future policies.

The results from the monitoring will be presented to the policy makers in internal meetings, trying to influence in the design of better future policies in the Operation Porgramme.

III.I.A. COSTS AND FUNDING SOURCES

There is not initial estimation of additional cost to implement the actions, monitor them and provide feedback, as it will be done by the EcoGozo Vision staff.

III.II. ACTION 2. PILOT INVESTMENT IN COMINO ISLAND

III.II.A. THE BACKGROUND

The improvement of the EcoGozo Vision has come on the same learning path than the Operational Programme 2014MT16M1OP001, indeed some of the learning that pushing the Ministry to modify the call for proposals in the OP, also moved the definition of this singular project for Eco living which was awarded at the end of 2021 and contained several of the finding gathered during RESINDUSTRY project.

As already mentioned, the learning process, started in the first study visit to Luna Plast in the Czech Republic in October 2019, and the models photovoltaic system integrated in the rooftop and using storage system to cover electricity demand peaks.

Several of the best practices provided internally by the consortium treated the storage of electricity generated by PV, even one of them was plublished in the Platform, the MALFINI hybrid photovoltaic system with accumulation in batteries.

Most of the cases analysed by the consortium were based on economic concepts, where the profitability of the installation had been the driver of the project, but a few of them were based on a more strategic level (searching for energy independency of a market), or based on geographical necessities (such as the covering of places isolated from the grid). These last cases were interesting from the Gozo Vision point of view, due to the capacity to move the island towards a more sustainable model, even if the economic results from the Market Analysis were not conclusive about the use of technology with storage.

Also other project practices related to PV installation in isolated areas, such as the solar pumping or the floating plant developed by Agenex in AgroRES provided interesting focus on how to use the solar resources and apply it in any aspect related to the island public service.

Following this new focus on not just getting an economic return, but achieving a new level of public services in a sustainable way for Gozo and Comino, the Ministry staff supported the design of a local project in Comino, funded by the Ministry for Gozo through local funds in the Eco Gozo Vision. The project is an off-grid PV System for Blue Lagoon Public Convenience, Comino.

The innovative character and the application of this new public-service-oriented view is that the PV system was dimensioned in such a way so as to store energy in batteries and also provide electricity to power a wireless router to provide free Wi-Fi on the beach and power up the lights, which operated by means of a presence sensor - in the public convenience and the guardroom. Through a 3.0 kWp off-grid photovoltaic system, the installation can supply also power to the water pumps for the public showers next to the Public Convenience, in a similar way to the sites visited by Gozo staff in Extremadura.

These project join the new battery based PV installations, with the concept of achieving a sustainable public service even in isolated areas, such as Comino Island. The results of the new installation and the wifi service is now under register and expected to provide a good number of users and interaction.

III.II.B. PLAYERS INVOLVED

The partners involved in the implementation of the action have been the Gozo Ministry staff, those directly working in the Eco Gozo vision, and those working at local level in Comino island.

In terms of interregional cooperation, there was a mix of activities and key player which supported the design and implementation of the final project.

The implementation and monitoring phase will require the involvement of the Comino telecom service, which is to be analysed, and the technical staff of EcoGozo Visio, due to it is expected to report the electricity produced, the potential number of users of the wifi, the average night use of street lighting fuelled by electricity

generated and stored in the batteries, etc. The staff will identify the main KPIS that can be measured with the technology presented in the current installation and may consider the implementation of new sensors or controller to increase the KPIs.

III.II.C. FOLLOW-UP ACTIVITIES WITH STAKEHOLDERS

During Phase 2 of the project, Gozo Ministry foresee to keep involving stakeholders on the identification of new innovative pilot investments, such as the Comino one.

Integrated in Gozo Visio, the Ministry will promote the participation of stakeholders in different internal actions and project actions, such as:

- An open platform or a physical communication channel between final grant users, such as the industry, and the policy makers, with the objective to create a continuous open tool where users can identify weaknesses and opportunities of the policy tools.
- Internal Institutional Meetings, which will continue in Phase 2 (1 or 2 meetings), and will focus on the presentation of the policy results in relation to the new improvement adopted, presenting results about number of projects funded with this new tool and main KPIs achieved.
- Policy Breakfast will continue during Phase 2 (1 or 2 breakfasts), keeping policy makers informed about main achievement of the new policy, providing feedback based on the monitoring system, and proposing new solutions for future call for grants.
- Resindustry project meetings and final event, where main policy responsible will be invited to participate, so they can explain the achievements of the new policy tools.

III.II.D. IMPACT MONITORING IN PHASE II

In order to confirm the effectiveness of the new policy, to monitor the real impact, their achievements and future reutilization, Gozo Ministry will request regular technical data to the pilot site, creating a report of conclusions at technical, economic, environmental and political level.

Open platform for communication with final grant users will also provide feedback at qualitative level about:

- Administrative burden and barriers in the submission of the grants.
- Lack of focus to promote investment in specific RES lines or projects.
- Barriers on the implementation and monitoring of the grants.
- Innovative

EcoGozo policy Monitor

The continuous communication channel with final users and market will allow to gather feedback about the policy effectiveness, the barriers found and the main modification to be proposed. This online system will go further than the quantitative KPIs evaluation, providing a qualitative evaluation of the policy which will be used to improve future policies.

The results from the monitoring will be presented to the policy makers in internal meetings, trying to influence in the design of better future policies in the Operation Programme.

III.II.E. COSTS AND FUNDING SOURCES

There is not initial estimation of additional cost to implement the actions, monitor them and provide feedback, as it will be done by the EcoGozo Vision staff.

Date:_____

Signature: _____

Stamp of the organisation (if available): _____

ANNEX 1. GOZO COMPLETE LEARNING PROCESS

The Phase 1 of GOZO has been focused on promoting exchange of experience with the rest of the partners through an interregional learning process. This learning process has been the main catalyst for generating the knowledge that GOZO required for achieving the expected policy change in its Policy Instruments.

GOZO learning process has been based on the identification of necessities, analysis and exchange of knowledge with the rest of partners and selection of best policy practices of Renewable energies applied in industries.

The best practice identification, analysis and selection, has been one of the main axes of work in RESINDUSTRY project. RESINDUSTRY partners have analysed the experiences and practices in each region, exchanged them within the projects and disseminated the most interesting findings.

The learning actions planned and implemented.

RESINDUSTRY counted on partners that had participated in previous Interreg Europe projects and had provided specific knowledge to design the project approach. Their conclusions were:

- Interregional workshops are more valuable when there is time enough for stakeholders face-to-face talks.
- Study visits requires prior information about study sites, with initial explanation of the visit, the content and the technical data the visit will show.
- There must be designed new specific tools to increase the capacity of large group of stakeholders from the same region.

As a result, RESINDUSTRY designed in the application form a series of already known and new activities to assure a proper learning process of the project participants:

- INTERREGIONAL WORKSHOP (IW): interregional technical meetings of stakeholders, consisting on half-day face-to-face work of staff and stakeholders, in small groups, for core technical activities and decision making of the project.

- STUDY VISITS (SV): interregional exchange of knowledge, consisting on half-day visits to identified best practices of interest for the consortium, including a previous explanatory session during IW.

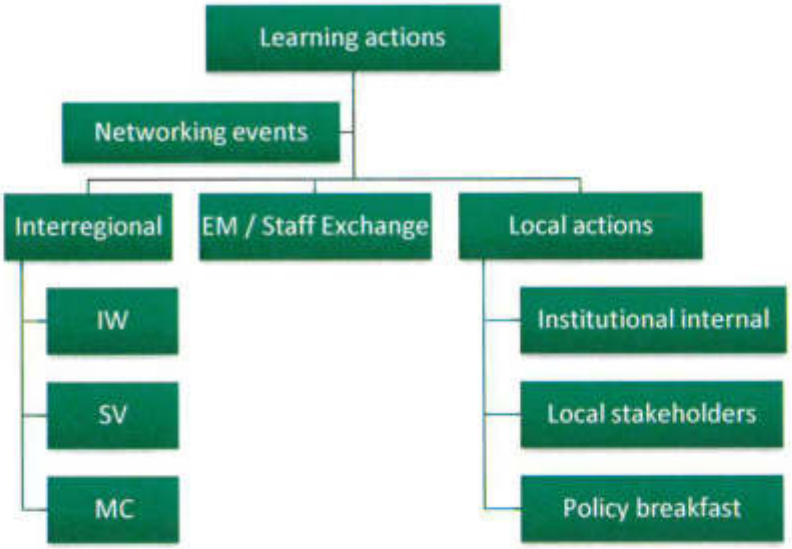
- MASTER CLASS (MC): one-day of interactive tuition and training focusing on core project topics, developing capacities. The format of the classes includes lectures, workshop activity, case studies from experts and organisations relevant to RES project investments.

- EXPERT MISSIONS (EM):as results of Study Visits partners will be able to require the mission of one expert from the institution which provided the best practice, to provide tailor-made training.

- LOCAL STAKEHOLDER SEMINAR (LSS): consists of 20 partner staff and stakeholders participating in any consortium learning activities will meet at LSS at the end of each semester to discuss progress, provide feedback.

- POLICY BREAKFAST (PB): partners will organize a meeting with high policy representatives to speak about one key outcome of the project, obtain feedback about products or present a policy recommendation.

- INSTITUTION INTERNAL MEETING (IIM): staff participating in any consortium and partner learning will gather with other colleagues at the end of each semester to report the activities.



THE APPROACH OF GOZO TO THE POLICY INSTRUMENT IMPROVEMENT.

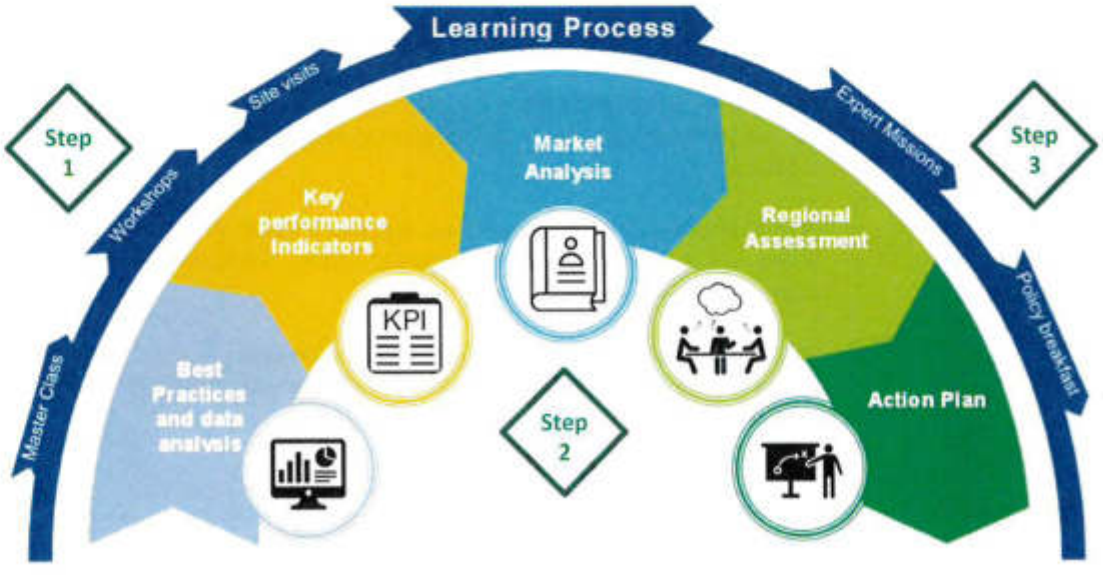
To ensure a successful learning process for GOZO, even if each activity planned in RESINDUSTRY was defined in a robust quality manner, each partner defined an integrated approach where all activities are logically interlinked. Successful approaches usually follow a logical path.

GOZO integrated approach to the learning process has followed 3 simple steps:

- Step1: analysis of partner situations, identification of valuable experiences.
  The standard approach is to start with the analysis of the different partners' situations and the identification of valuable experiences and practices.

- Step2: experience further analysis through activities.
  This valuable experience is then further investigated through activities such as study visits and thematic workshops.

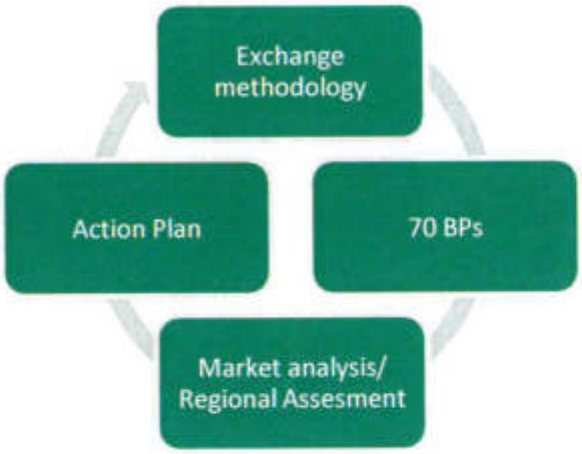
- Step3: preparation for the transfer of practices summarized in action plans.
  Finally, the transfer of knowledge and practices is mainly prepared through the elaboration of the action plans (but can also occur during the exchange of experience phase of the project).



GOZO has implemented the different steps through activities which resulted in tangible products and deliverables, which have also supported further activities with a final result of the present Action Plan.

The **main products** produced by GOZO, used in the creation of the policy change and the current document of Action Plan have been:

- The Exchange Methodology.
- The Market Analysis.
- The best practices.
- The Regional Assessment.



GOZO MARKET ANALYSIS

In order to reach the long-term objective of RESINDUSTRY, the project focuses on improving the efficacy of public financing and public tools which support the RES implementation in the industry sector.

The first step in this process was to identify the current situation of the sector on the area to be influenced. The current situation analysis is called in many ways in the Interreg Europe community, such as regional identification, state of art, regional analysis, etc. and the name provided in Resindustry is Market Analysis.

The Market Analysis includes a macro analysis of the industrial sector, identifying the industry energy consumption profiles, and analysing the RES technologies with potential to be applied in the national industries. Both, the industry profiles and RES technologies, are analysed using macrodata, from national official sources, and they are completed when other official local or regional data is available or supplied by local actors.

The energy consumption of the industry, in each region and country, defer greatly depending on the resources availability (gas, coal, nuclear, etc.), either national or from the neighbourhoods, while the future perspective will only depend on the natural resources available on the spot.

Market Analysis Objective.

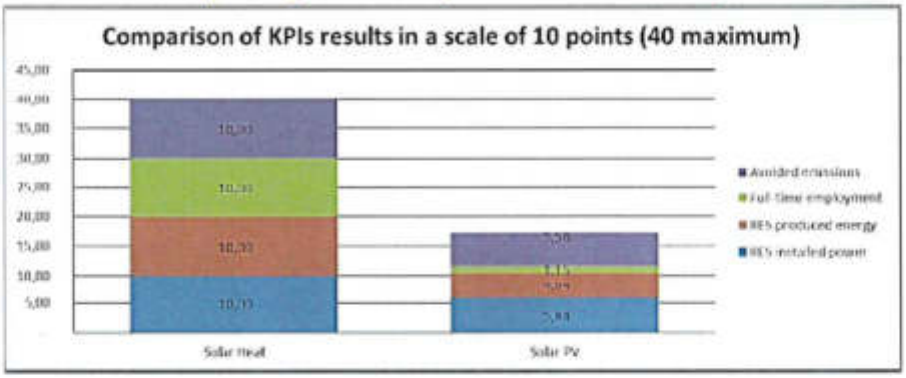
The Market Analysis is also referred in the RESINDUSTRY project as a "Strategic Analysis of RES Technologies applied in industries". This analysis provides each partner with a report of energy and socioeconomic Key Performance Indicators (KPIs) which will be used to review grants management in the P.I., so the Market Analysis will improve the way thematic calls are organised and/or the way projects are selected.

This analysis provided, for each technology with capacity to be integrated in the national/regional industry, a description of KPI indicators in terms of energy generation, value-for-money, jobs creation, environmental impact, etc. Market Analysis is the base source of information for the Regional Assessment, where the partners

integrated the information coming from the Best Practices and the Market Analysis data, and obtained the final situation of the regions.

Key Performance Indicators (KPIs) vary between partners, because they analysed the specific region necessities/resources, and provided customized solutions to confront the RES benefits vs the policy investment.

Sample image of KPIs analysis in GOZO Market Analysis



In a similar way than the current profile of the industry energy consumption will be a main baseline condition for the identification of RES technologies with best economic opportunities, the natural resources available in each region will influence on the efficiency of technologies, resulting in different KPIs for the different partners.

	RES installed power	RES produced energy	Full-time employment	Avoided emissions	TOTAL
Solar Heat	10,00	10,00	10,00	10,00	**40,00**
Solar PV	5,84	4,64	1,15	5,56	**17,19**

Market Analysis Conclusions.

The Market Analysis conclusions provide a view of macrodata related to national industrial energy, proposing a list of RES technologies and KPIs in the area. The Market Analysis, together with the Best practices, fed into the Regional Assessment, that is the departing point for the Action Plan.

GOZO BEST PRACTICES

The exchange of experience among RESINDUSTRY partners was the main catalyst for generating policy changes among participating regions. The learning process is based on the identification, analysis and exchange of knowledge and practices in RESINDUSTRY policy field.

In RESINDUSTRY case, good practices have to aim to the identification of renewable technologies implemented in industries, especially if they have been supported by public funds.

The samples focused on the local resources and available technologies, so the results differ between countries and partners, but the global results allow the comparison and the transfer of knowledge among regions. The best practices show a minimum of information in order to create a baseline of comparison among country practices and among project practices.

GOZO produced practices to be exchanged with RESINDUSTRY partners, and described the practice following the project template, which included technical data defined by the consortium, specially reference to KPIs also included in the Market Analysis. Some of the data in each practices are:

- Identification of the current energy baseline (fuels, energy consumption, etc.)
- RES technology definition (fuel, installed power, generated energy, CAPEX, simple payback, etc.)
- Results in terms of energy, economic and environmental achievements.

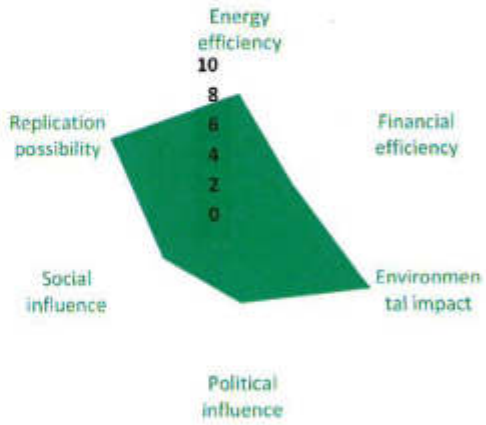
Key Performance Indicators (KPIs), calculated in the Market Analysis were calculated on official available data, while the best practices are real data from practical samples on the region or the country. This provided the opportunity to adjust the KPI by comparing the results from the Market analysis with the results from the best practices.

In order to compare best practices among each other, special indicators were developed among partner in a regular base just adding the scoring of the different evaluation criteria. Partners evaluated each practices following the proposed criteria, identifying those practices with higher replication potential.

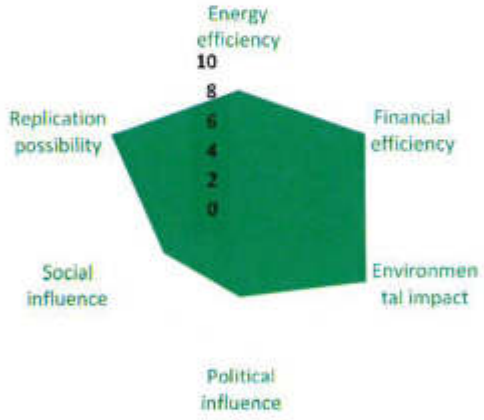
The replication indicators were applied to each practice, allowing a deep understanding of the potential impact if applied to other industries or places in the region, allowing also a better comparison with existing practices in other partner countries.
The results from the best practices comparison were gathered in a specific deliverable to be used by GOZO stakeholders and rest of partners.

Sample of best practices analysis on replication indicators

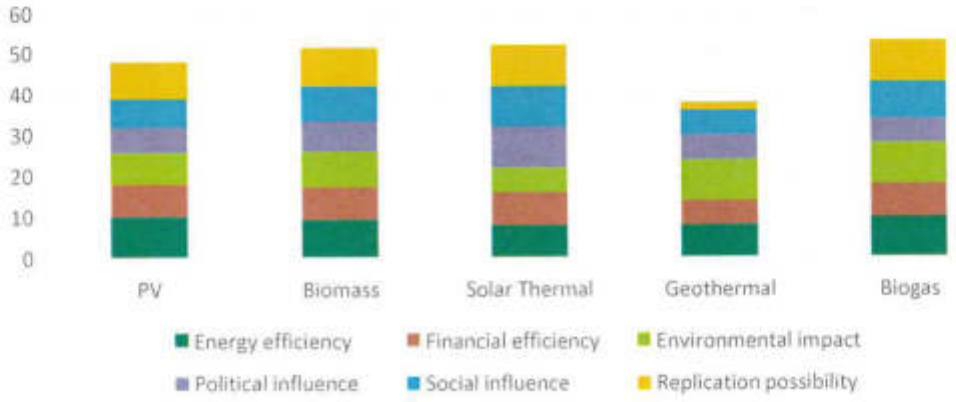
PV delicatessen hall



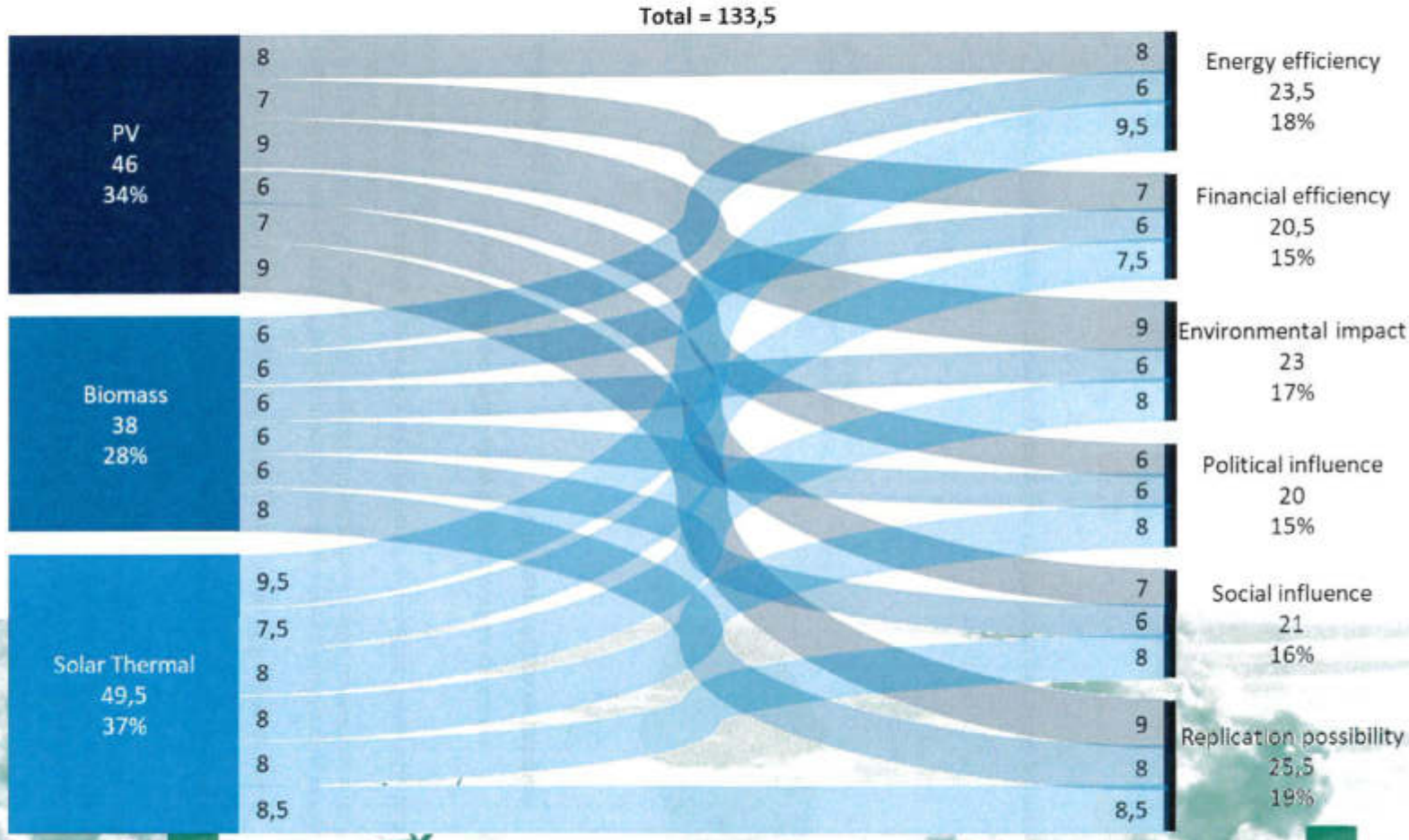
PV frozen storage warehouse



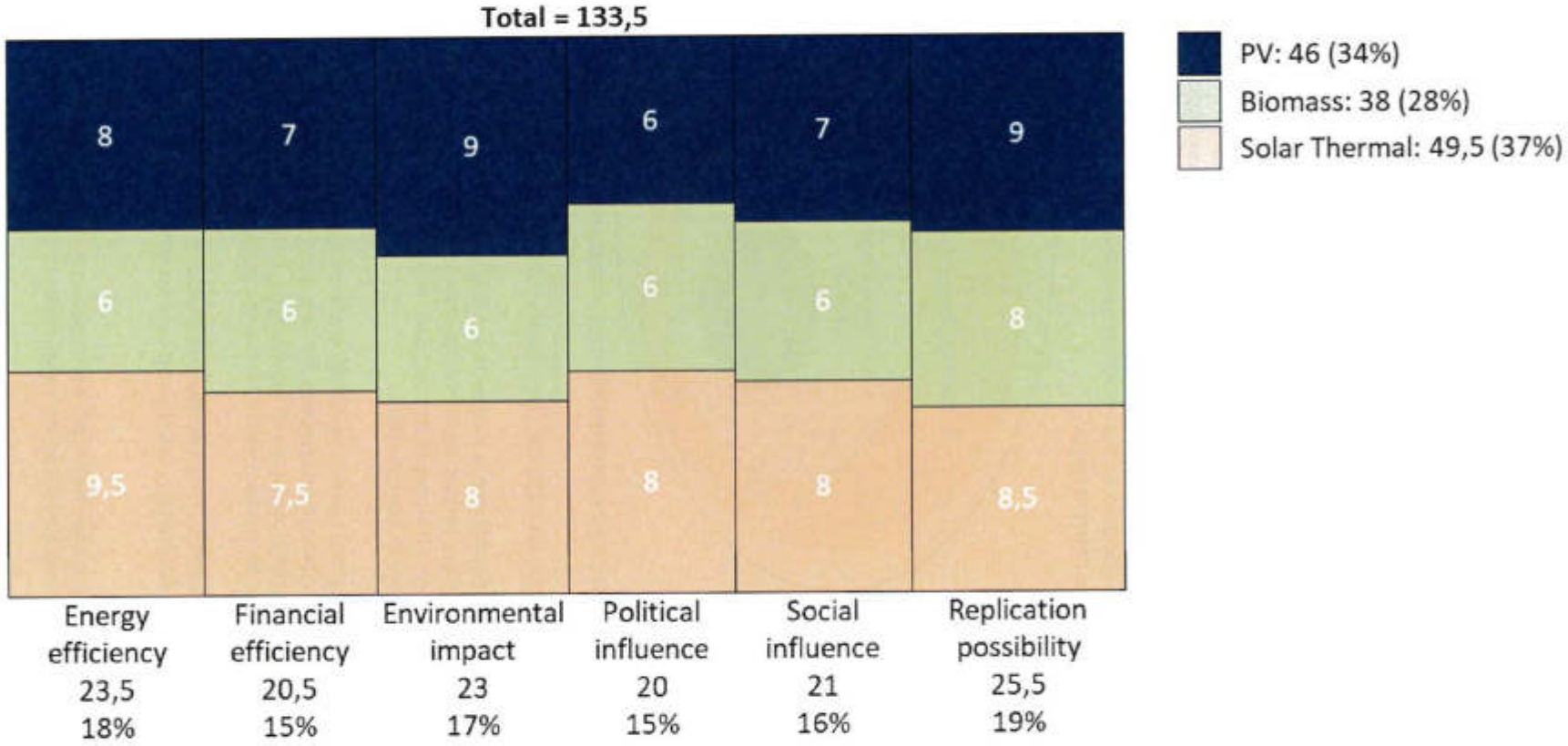
Replication indexes per technology based on the BPs selection of the partners



Influence of each technology in the replication indexes based on the BPs selection of the partner, Sankey chart



Replication indexes per technology based on the BPs selection of the partner, Mekko chart

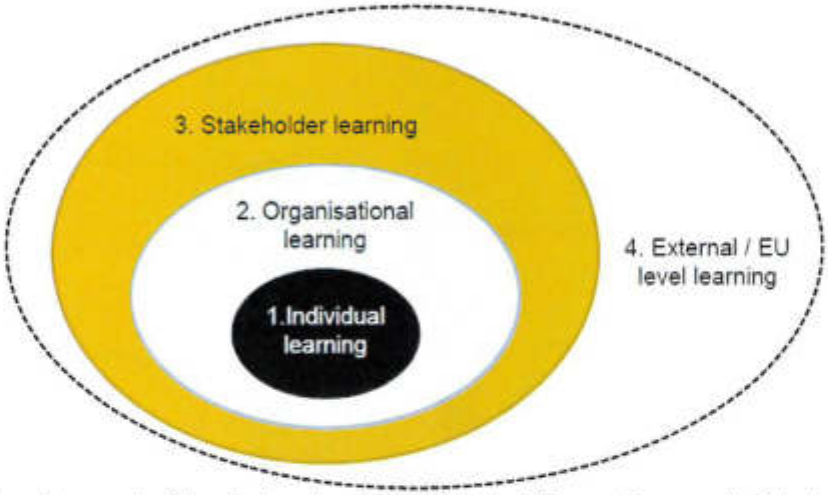


GOZO ACTIVITIES AND LEVELS OF LEARNING COVERED

Through the implementation of the project actions, and the delivery of project products, GOZO has achieved to produce a process of policy learning covering each of the expected 4 levels of learning. In this section, some samples of the learning activities are displayed.

Some of GOZO activities cover one single level of learning, but most activities achieve to cover several levels at the same time, especially the individual learning which is always included.

When designing RESINDUSTRY methodology to carry out the interregional exchange of experience, partners paid particular attention to the multidimensional aspect of the learning process, so the learning process covered the four different levels.



This section shows how each of the deployed project activity has influenced in several of the learning levels.

INTERREGIONAL WORKSHOP (IW) AND STUDY VISITS (SV).

The main interregional face to face exchange was based on the workshops and study visits, were stakeholders and staff from every partner region met to work on technical documents, share views and opinions, and visit new practices from the hosting partner. Each visit consisted on (due to COVID crisis some of these activities had to change into virtual activities):

- Interregional technical meetings of stakeholders, consisting on half-day face-to-face work of staff and stakeholders, in small groups, for core technical activities and decision making of the project
- Interregional exchange of knowledge, consisting on half-day visits to identified best practices of interest for the consortium, including a previous explanatory session during IW.

Each interregional action has a dossier published in the website, where the information of the technical action is summarised. Additionally, this report is used for other

The IW and SV has been technically developed as expected, with the exceptions of those face-to-face actions which had to be replaced for online activities due to COVID restrictions. The exchanges produced were:

INTERREGIONAL WORKSHOP IW1 ON BEST PRACTICE (BP) AND STUDY VISIT SV1
Half day workshop where partners worked on the templates of the BPs to be produced, and another half-day seminar to introduce the local BP, and posterior site-visits.

INTERREGIONAL WORKSHOP IW2 AND STUDY VISIT SV2
Hosted and led by FHV, half-day workshop to present 5 draft practices per region, with a process of peer-review between partners and stakeholders, and a later half-day seminar to introduce the local BP, and posterior site-visits.

INTERREGIONAL WORKSHOP IW3 AND STUDY VISIT SV3

Hosted by GOZO, but led by TLP (CTU UCEEB), it has to be online, workshop to work on the 70 BPs. A process of presentation, scoring and filtering produced a selection of top 10 good practices for the Policy Platform. This process was also the initiation of the selection of 1 practice per partner to receive the Expert Mission. Another half-day seminar introduced the local BP.

INTERREGIONAL WORKSHOP IW4 AND STUDY VISIT SV4

Hosted by TLP of Regional Assessment (MOSR), one-day workshop for revision of draft RA. Working groups compared KPIs from different Analysis, and conclusions were debated about the KPIs divergences, with half-day seminar.

INTERREGIONAL WORKSHOP IW5 AND STUDY VISIT SV5

Hosted by Agenex, but led by TREA, after MC3, stakeholders worked on groups reviewing the Draft AP. The results were presented and discussed with all participants, including half-day seminar and site-visits.

The levels of learning achieved by this action are:

- Level 1: Individual learning of the project staff participating in the action, both from hosting and visiting partners.
- Level 3: Stakeholder learning of the stakeholders from the visiting partners and from the local stakeholder group of the hosting partner.
- Level 4: External learning created by the dissemination previous to the visit and after the visit, both at local and regional level using the local media, and also at EU level through the project website.

For each of the actions the involved learners were:

- Individual level of learning: 2 staff per partner
- Stakeholder level of learning: 2 stakeholders per partner + full local stakeholder group (20)
- External level of learning: 1-2 staff of Interreg EU projects related to RES (validated by JS)

MASTER CLASS (MC)

Master Classes had been designed as a point of departure for development of important products or deliverables, so each MC was placed in advance to the starting of a desk work.

The general structure of the classes consisted on one or two days of interactive tuition and training, with focus on topics which were to be developed in the coming months, such as market assessment, RES project identification, financing solutions and other related topics. The format of the classes includes lectures, workshop activity, case studies and guest lectures from experts and organisations relevant to RES project investments.

MASTER CLASS (MC1) ON EXCHANGE METHODOLOGY.
Task Leader Partner (TLP), coinciding with Lead Partner (LP), CTU UCEEB hosted a Master Class on Exchange Methodologies. During 2 days consortium detailed each partner strategy for the learning process. 2 staff per partner, guided by an external expert attended the event, hosted by LP.

MASTER CLASS MC2 ON REGIONAL ASSESSMENT RA.
Coinciding with Gozo online event (due to COVID restrictions), TLP (MOSR) coordinated a Master Class on Regional Assessment definition, led by experts and consisting of 1,5 days of lectures, workshops and case studies on RA definition.

Partners worked on a template of RA, including a "Strategic Analysis of RES Technologies for regional industry". The results will be environmental and socioeconomic Key Performance Indicators (KPIs) which vary from region to region depending of the natural resources available, the regional and national legal framework, etc.

MASTER CLASS MC3 ON ACTION PLAN.
TLP of AP (TREA) coordinated a Master Class MC3 on AP definition, hosted by Extremadura, consisting of 1,5 days work on activities definition. The class included training, workshop and case studies. Led by experts the staff defined the Draft AP using final RA and Policy Breakfast feedback.

The levels of learning achieved by this action are:

- Level 1: Individual learning of the project staff participating in the action, both from hosting and visiting partners.
- Level 4: External learning created by the dissemination previous to the Master Class and after it, both at local and regional level using the local media, and also at EU level through the project website.

For each of the Classes the involved learners were:

- Individual level of learning: 2 staff per partner
- External level of learning: 1-2 staff of Interreg EU projects related to RES (validated by JS)

EXPERT MISSIONS (EM)
As results of Study Visits partners were able to require the mission of one expert from the institution which provided the best practice, to provide tailor-made training.

The expert mission provided one-day specific learning to a large group of staff and stakeholders of the same region. Based on the selected BP, partners required the mission of one expert from the institution, company or region which provided the best practice.

Expert Missions are different from Master Class because the focused on the specific necessities of each partner, allowing a deep capacity building of a large group of stakeholders of a unique PI. As result, a group of local stakeholders and staff is able to cover specific necessities on a selected thematic, being the missing tool that previous cooperation's have found as lacking in the learning process.

The local stakeholder group and the partner staff were able to select specific best practices among the 70 defined by the project partners, and a full training was prepared to cover any missing technical or political information related to the selected practices. Expert Missions were conceived as the final learning tools in the process prior to the definition of the Final Action Plan.

Gozo stakeholders selected the practice from the Portuguese company BA GLASS (Barbosa&Almeida BA), which has one of their biggest factories in Villafranca de los Barros (Badajoz). Experts from this project and other similar projects in Extremadura provided the stakeholder group with an online Expert Mission, due to COVID mobility restrictions in 2022.

The levels of learning achieved by this action are:

- Level 1: Individual learning of the project staff participating in the action.
- Level 3: Stakeholder learning of the stakeholders from the local stakeholder group.
- Level 4: External learning created by the dissemination previous and after the Mission, both at local and regional level using the local media, and also at EU level through the project website.

For each of the Missions the involved learners were:

- Individual level of learning: 10 staff from partner hosting the EM
- Stakeholder level of learning: 10 stakeholders from local stakeholder group

LOCAL STAKEHOLDER SEMINAR (LSS)

As a part of increasing the learning process among the stakeholder level, a seminar has been organized regularly among the local stakeholder Group.

This Seminar consists of 10 to 20 partner staff and stakeholders, who participated in project learning activities, meeting at the end of each semester to discuss progress, provide feedback and review advances.

The objective of these seminars was to follow-up the advances of the project among the stakeholders, updating the project achievements and sharing the learned outcomes with them.

These seminars have been the second main tool of learning among the stakeholders, just after the study visits, because they assured that the information gathered on the project reached the local stakeholder group.

Stakeholders have been in position to receive up to date information about the project, providing any comments and potential improvements of the project activities, assuring that both Regional Assessment and Action Plan were aligned with the Policy Instrument.

The levels of learning achieved by this action are:

- Level 1: Individual learning of the project staff organizing the action.
- Level 3: Stakeholder learning of the stakeholders in the local stakeholder group.
- Level 4: External learning created by the dissemination previous and after the seminar, both at local and regional level using the local media, and also at EU level through the project website.

For each of the Seminar the involved learners were:

- Individual level of learning: 5-10 staff from partner.
- Stakeholder level of learning: 5-10 stakeholders from local stakeholder group.

POLICY BREAKFAST (PB)

Policy breakfast have been designed as a supporting tool in the process of policy influence, and managing authorities involvement in the process of policy instrument improvement.

The policy breakfast is a working meeting, which, placed in a more relaxed environment, seeks to keep policy representatives informed of the project achievements, assuring the alignment of the project actions to the future will of policy maker when improving the policy.

Through this simple action, the partner assured a better integration of the actions described in the Action Plan, because the actions were previously validated and confirmed in several breakfast with the policy representatives.

Every partner has organized a meeting with high policy representatives to speak about the different project outcomes of the project, obtaining feedback about products or present a policy recommendation.

To optimize the impact of interregional learning and to make sure the activities of the action plan were to be implemented later on, these meeting involved not only policy makers, but a wide range of players, as it was rare that one single organization could promote a thematic policy improvement.

INSTITUTION INTERNAL MEETING (IIM)

In order to reach the second level of learning the project designed specific Organizational or institutional learning. Such learning occurs when the new knowledge does not remain at the level of individuals alone, but is also shared within the organizations these individuals are working for.

Organizational learning increases the chance that the learning gained from the cooperation had an impact in the regions. The way to enlarge this organizational learning was to design a unique learning action.

Usual tools are internal reporting meetings where the staff members directly involved in the cooperation report back to the relevant colleagues, managers and elected representatives of the organisation. These key interested parties were in many cases directly involved in the interregional exchange of experience activities when needed, but also this meeting assured a complete exchange of experience.

Following this guidelines, RESINDUSTRY staff participating in any consortium and partner learning gathered with other colleagues at the end of each semester to report the project activities, achievement and future actions. These regular meetings had facilitated the planning of the project, the participation of different staff and produced an easier internal and external coordination of the actions.

COMMUNICATION AND DISSEMINATION

GOZO has implemented the corresponding activities required to achieve the main objective of the communication strategy, which was to disseminate Project´s results to stakeholders and the general public, but also to inform about the interreg objectives and benefits of cooperation among EU Regions and Countries.

The RESINDUSTRY Communication and Exploitation Strategy was elaborated at the beginning of the project in order to set guidelines for the organization of dissemination activities and elaboration of dissemination materials.

The Communication and Exploitation Strategy objective was to assure that the process of policy learning occurs at 4 levels, made through 4 sub-objectives:

1. To achieve internal Communication (individual and organisational learning)
2. To assure the involvement of stakeholders (Regional Stakeholders learning)
3. To transfer the learning outcomes to other EU stakeholders (external/EU learning)
4. To produce awareness among the citizens about the project (external/EU learning)

The communication is a min tool to achieve the Level 4 of learning, the External learning. The fourth level refers to learning beyond the regions. External learning is certainly the most challenging 'type' of learning, but it is also less crucial for the projects since it does not directly impact policy change in the participating regions.

In a capitalisation programme like Interreg Europe, it was important that the lessons learnt at project level were also exploited at programme level in order to be of benefit for other public authorities in Europe. The communication strategy of RESINDUSTRY took into account all these parameters when defining the minimum tools and outputs to be achieved by the consortium.

Communication Outputs:

- One detailed Dissemination Strategy, Internal Database and Mailing List
- Website, leaflets, posters, and rollup, 4 project newsletters
- 5 study visit dossiers by host partner
- One Local Dissemination Event per partner in S5, open to the public with 40-60 key actors.
- One final Conference in phase 2

GOZO has actively participated in the communication process of the project, promoting the project at local, regional, national and European level. Some of the main used tools have been news, press releases and emails/bulletins, where the partner described the project achievement and the future results to be achieved.

As special mention, GOZO has produced specific videos for communicating in a more effective manner.

Sample of communication actions of the partner and consortium

THE QUALITY OF THE PARTNER LEARNING

Each partner had a predefined structure of quality assurance provided by the project, and including specific internal and external quality evaluation tools, which has supported the consortium in the achievement of high quality standards during the learning process.

RESINDUSTRY has created a Robust Quality Unit (RQU) composed by TLP and external experts to support partners in learning activities. Past experiences showed partners tend to focus resource on technical deliverables, turning aside the assurance of the learning quality process.

The beneficiary's Quality Assessment systems sought to support the correct application of the technical work included in the application form and specified for the beneficiary. This support was reflected through work evaluation and monitoring systems, acting in a similar way to a Project Management system for any service project.

In RESINDUSTRY, the beneficiary's Quality Assessment system took the commitments acquired in the Grant Agreement with the coordinator, and transfered them to technical working documents for the partner, subsequently evaluating their implementation.

Thanks to the project structures, the exchange of experience activities has been of robust quality, being a pre-condition to an efficient learning process. So each action has been properly prepared, implemented, documented and monitored.

The UNIT, composed by TLP CTU UCEEB, MOSR and TREA, with the support of external experts at national level, assured that the activities are properly prepared, implemented, documented and evaluated:

- Preparation: all the information needed to carry out the activities must be made available in advance. In particular, the objectives and agenda of each activity need to be clear and shared with the participating partners. If needed, partners can also be asked to send their contributions before the activity takes place.
  RESINDUSTRY preparation required on-time preparation of full explanatory document for each event by host partner, incl. learning objectives for IW and SV, which has been evaluated after each action. Following the Exchange Methodology, the host partner prepared (1 month in advance) a full explanation document for each event to be implemented in the project.
  Additionally, each Methodology defined per partner was designed to assure the learning process: 1) achieving 4 levels of learning; 2) assuring the quality; 3) integrated approach. Going further that this application form, it described each activity in detail, with a foreseen agenda and content.

- Implementation: each organisers had to ensure proper management of the activity. The quality of a moderator, issues such as languages or intercultural context, etc. were taken into account in each panned activity. Depending on the activities, innovative techniques were used to ensure interactivity and the involvement of all participants in the exchange of experience.

- Documentation and monitoring: after each key action, a report summarising the main outcomes was produced. For example, after each SV one publishable dossier in English was produced by host partner

summing up all activities. This information was both used internally in the different stakeholders meeting, and used for dissemination.

All these steps have been evaluated through the RQU structure, both internal and external, assuring that the project actions were achieving the expected level of quality. So an extra level of quality evaluation has applied:

- Evaluation: the quality of each learning activities has been measured by survey per participant, resulting in a quality assurance report per semester. The evaluation of each activity (through a simple satisfaction questionnaire) has helped in the improvement of the activities, allowing a continuous upgrading of future activities.

  LP has evaluated the quality of the learning activities of each partner, supported by the external expert and coordinated with the rest of national external experts on quality of learning. Through questionnaires, the LP and the quality expert measured the quality of the learning actions per participant, resulting in quality reports. If deviations were identified, the expert launched warning reports or some contingency Plan, however, this contingency was not necessary during the project phase 1. Every six months, the Robust Quality Unit has delivered a quality assurance report including the analysis of the results from questionnaires of learning activities.

Role of experts

There was no obligation to involve experts in the exchange of experience process but external assistance was considered to be helpful and a way to professionalise this process (e.g. by supporting the exchange methodology definition and follow up). External input was also needed to ensure a more in-depth coverage of certain aspects of the topic tackled by the project or to help partners that are less experienced in the joint working process.

Experts has been contracted by each partner, in order to assure that each participant passed both and internal project evaluation and an external evaluation.

Quality Evaluation Report

The evaluation report compiles the project's objectives, the project's actions, and the beneficiary's capacities, to apply an evaluation methodology and ensure that the expected impacts are achieved.

The quality report focuses on evaluating and quantifying certain key parameters or key productivity indicators, which serve to measure the success of the project in reference to what was defined in the proposal submitted to the Program. Offer a list of key productivity indicators, as well as systems to quantify them and thus be able to analyse their level of performance.

The evaluation analysed a list of key productivity indicators, as well as systems to quantify them and thus be able to analyse their level of execution. The project parameters that will be evaluated through key productivity indicators are:

- The quality of the learning actions
- The calendar evolution of indicators
- The delivery of learning products.
- Communication and economic indicators

Following this objective, the structure of the evaluation report was:

- ≫ Group 1. Quality level in learning actions
- ≫ Group 2. Level of learning
  - Stakeholder participation
  - Technical products delivery
- ≫ Group 3. Transversal communication and coordination
- ≫ Group 4. COVID effect over learning process

The Group 1 of question has evaluated that the activities are properly prepared, implemented and documented.

RESINDUSTRY Interreg Europe

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QUALITY EVALUATION REPORT, RESINDUST

Semester: 2 Partner: GO

Group 1. Quality level in learn

IW2 + SV2 - PREPARATION - How many weeks in advance

Sample of evaluation of implementation in IW.

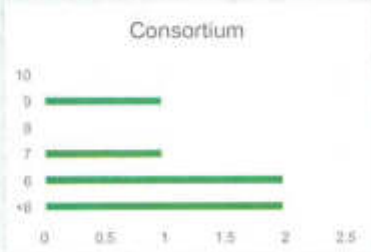
IW2 + SV2 - IMPLEMENTATION - The theoretical contents were clearly explained during the IW2 and SV2 and the contents were enough to achieve the event objectives.

Answer	GOZO	7

Average consortium scoring 7,7

Sample of questions or evaluation related to Master Classes.

MC2 - IMPLEMENTATION - The theoretical contents were clearly explained during the Master Class and the contents were enough to understand the work to do in the Regional Assessment.



Answer	GOZO	7

Average consortium scoring 5,0
(10 maximum)

The Group 2 of question analysed the Level of learning, based on the follow up of stakeholder participation and the achievement of learning actions.

In this aspect, the number of stakeholder participation has been analysed in each semester, evaluating if the project reached 90 participants with increased capacity thanks to exchange experiences, 10 stakeholders (regional stakeholder group) per partner and 20 staff (3 per partner).

The Group 2 of question also analysed the number of learning activities in each semester, evaluating if the project reached the 83 learning activities:

- Five Study Visits, Interregional Workshop and Master Classes MC (Exchange Methodology, Regional Assessment, Actions Plan) (5)
- Four Institutional Internal Meetings, and four Local Stakeholder Meetings per partner (4x7+4x7)
- A minimum of one Expert Mission per partner (1x7)
- Two Policy Breakfasts per partner (2x7)
- One partner meeting in Phase 2

5 SV and IW (5)

MC1, MC2, MC3 integrated in the SV and IW (0)

Networking Event 1, 2 and 3 as communication (0)

4 local Stakeholder Meetigs per partner (28)

4 Institutional internal meetings per partner (28)

Expert Mission per partner (7)

Two policy breakfast per partner (14)

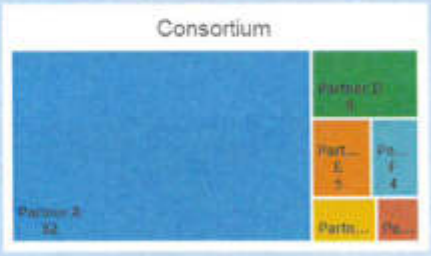
One partner meeting in Phase 2 (1)

Total of learning activities = 83

Group 2. Level of learning

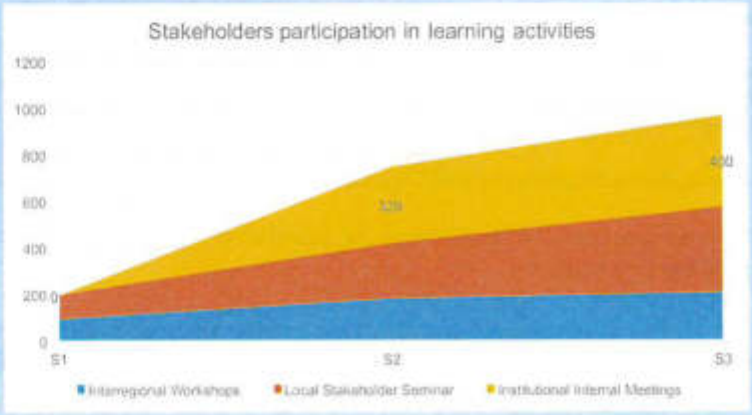
Stakeholder participation

How many stakeholders and staff were online connected to the IW3?



Answer	GOZO	62

This activity expect the following attendance:
Individual level of learning: 2 staff per partner
Stakeholder level: 2 stakeholders per partner + full local stakeholder group (20)
External level: 1-2 staff of Interreg EU projects related to RES (to be validated)
Less than 4 staff+stakeholders per partner is to be compensated.

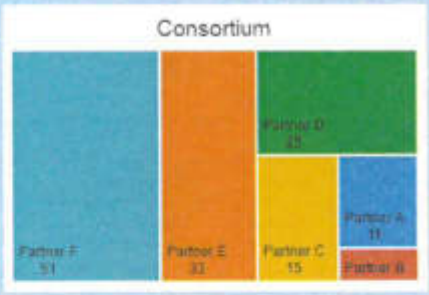


207 stakeholders in IW and SV

366 stakeholders in Local Sakehholders Seminar

400 stakeholders in Institutional Internal Meetings

How many stakeholders and staff participated in your second Local Stakeholder Seminar LSS2?



Answer	GOZO	11

10 per partner are expected to meet each semester, lower numbers are to be compensated.

The Group 3 of question has evaluated that the project coordinator and the rest of partners with key roles, either technical, economic or communication, were implementing correctly the expected duties.

In terms of Coordination, some milestones were analyzed:

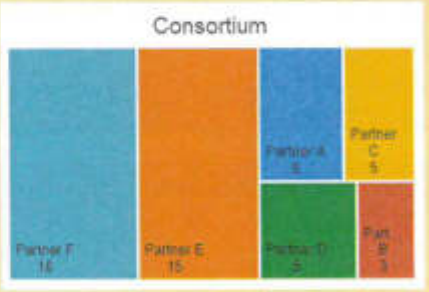
- Subsidy Contract, Partnership agreements, Project handbooks, day-to-day management structures.
- Methodology for quality monitoring
- 5 SC and 5 skype PCU meeting.
- 5 quality assurance report

In terms of communication, some milestones were analyzed:

- One detailed Dissemination Strategy
- One Internal Data Base and Mailing List
- Leaflets, Posters, and rollup
- Website
- 4 project newsletter
- 5 study visit dossier by host partner
- One Regional Dissemination Event per partner in S5, open to the public with 40-60 key actors.
- One final Conference in phase 2

Group 3. Transversal communication and coordination

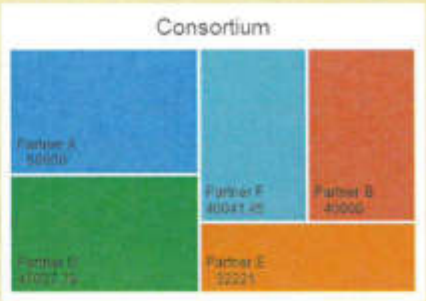
How many appearances in media have you promoted in online sites by month 18?



Answer	GOZO	6

2 to 4 Each partner is expected to promote 2 to 4 media appearances per semester at national, regional or local level. The final objective being 10 per partner.

How much budget was executed and reported in semester 3?



Answer	GOZO	50.000,00
Objective		39.400,00

Answer	Consortium	209.290,23
Objective	Consortium	253.332,00

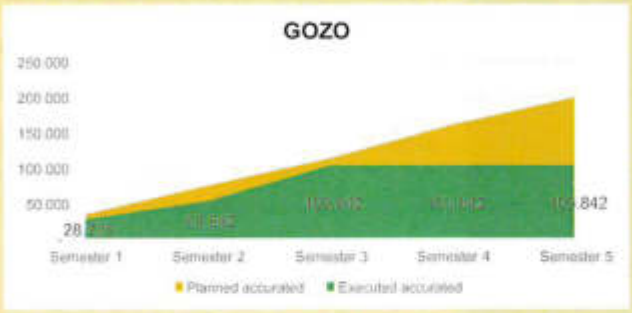
GOZO

Semester 3 execution VS planned execution is 126,9%

Accurated execution for all semesters is 0,913699956005279% of planned.

The partner is exposed to a descertification of budget at the end of phase 1, corresponding to

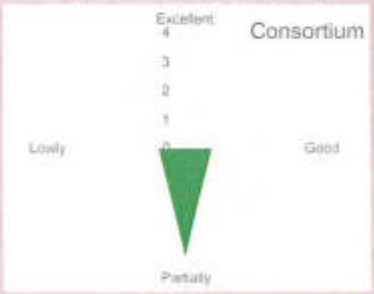
€ 9.808,00



The Group 4 of question has evaluated the impact of COVID crisis over any of the previous key aspects of the project implementation and expected results.

Group 4. COVID effect over learning process

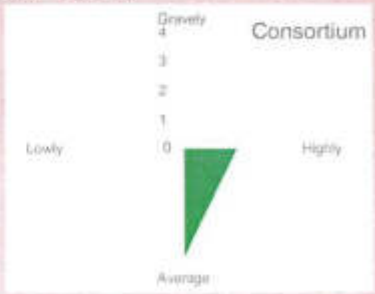
IW and MC are supposed to be a key project moment for staff and stakeholders sharing knowledge. In which degree the exchange of experiences was produced among online participants?



Answer	GOZO	Partially, the exchange formatting does not allow good interaction

Average opinions are "partially, the exchange formatting does not allow good interaction"

COVID crisis will keep affecting 2021 activities, both economic and social. How do you consider that your technical activities had been affected in this semester?



Answer	GOZO	Highly, actions had to be delayed affecting the planning. Contingency Plan is required.

Average opinions are highly - average, which highline that a contingency strategy will be an added value for the project

ANNEX 2. KEY PERFORMANCE INDICATORS FOR RES POLICY IMPROVEMENTS

DEFINING INDICATORS FOR POLICY EVALUATION

One of the aims of the project is the definition of a series of energy indicators in which the total energy consumption of the industries can be disaggregated by potential RES technology. These indicators are called Key Performance Indicators (KPI) and they are useful in order to make easier the comparisons with the energy consumptions of other factories which operate in the same field, and with other technologies.

A typical KPI used in the industrial field is defined as the primary energy consumption scaled on the number of factory outputs (KPIa), so that the energy consumptions of the factory can be correlated directly to the number of outputs produced. In most of cases the primary energy consumption tends to decrease with the increase of the output production, being the evidence of a primary energy consumption independent from the industrial production volumes. However, this KPIa has to be identified industry to industry and cannot be generally calculated.

There is a range of well-developed and sustainable renewable technologies that can provide electricity and heat in a cost effective way when conditions are favourable. Such sources can provide electricity and heat directly to an industry through on-site technologies, or via centralised district networks. The main sources of renewable energy sources to be analysed at national level are:

- solar thermal energy
- solar photovoltaic energy

Regarding KPIs of every technology, and potential savings to be achieved, there are several main aspects to consider that have a bigger impact on the comparable costs of the energy produced by technologies, when placed in the same location. These are the initial cost of the system, the lifetime of the system, the cost of maintenance or the system performance.

Moreover, production will depend on the location (affecting climate, insulation, taxes, cost of living, etc.) and quality of the system (affecting performance, lifetime and cost). This can vary significantly from region to region or from country to country, so the specific analysis has to take into account these parameters.

The Market analysis has selected a minimum of KPIs that are required to be known for each selected technology. These KPIs provides a common ground of analysis for the technologies. The KPI selected are:

CAPEX, measured as €/kWth or KWp depending on technology	Direct labor intensity, measured as FTE/MW of installed power, either thermal or electric
OPEX, measured as €/kWth or KWp depending on technology. But expressed as a % of CAPEX	Indirect labor intensity, measured as FTE/MW of installed power, either thermal or electric
Fuel supply cost, measured as €/MWh, for those technologies requiring fuel provision	Emissions, measured as kg CO2/kWh for the different fuels to be replaced
LCOE, measured as €/MWh, either thermal or electric	Lifetime (years)

As the analysis was to be made from the point of view of the public administration, where public funding is to be allocated to leverage private investment, these KPIs have been transformed into impacts for each public euro invested. The conclusions have provided final KPIs for the public administrations in reference to every 1.000€ invested of public money:

KPI indicator (for every 1.000€ of public funding)
RES supported (kWth)
RES produced (kWh th)
Full-time employment (FTE)
Avoided emissions (Ton CO2)

RES INDICATORS PER TECHNOLOGY

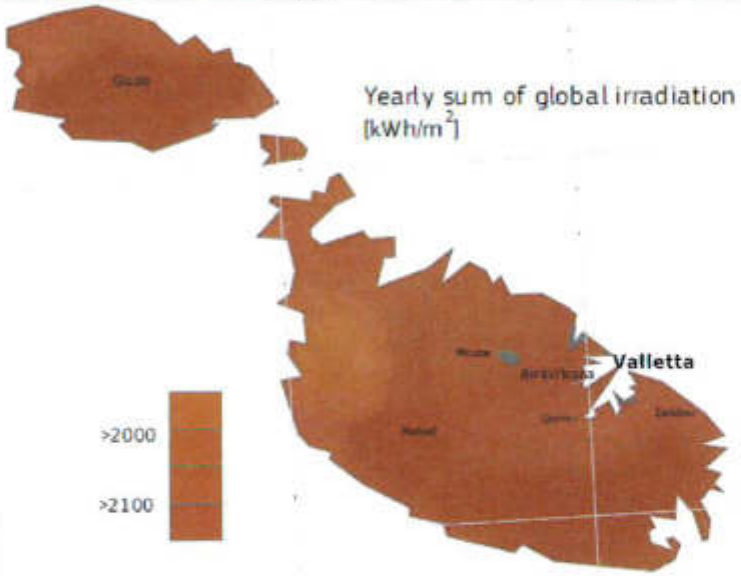
SOLAR THERMAL ENERGY

Solar thermal could fulfil a substantial amount of heat demand in a wide range of industries in Malta. However most of opportunities are already covered for more cost-effective technologies based on fossil fuels.

For processes not requiring high temperatures, there is place for analysis, when not already covered by fossil heating providing low price heat. With low and medium temperature heat accounting for 50% of total industrial process heat use, solar thermal systems have a large potential.

For small- and medium-size enterprises, rooftop space and finance opportunities for the upfront costs are the key barriers, so the opportunity is to integrate solar thermal heating plants during the construction of new industrial plants. The challenge is to maximise the share of heat provided by solar heating. This means that solar heating needs to be accompanied by storage to allow process heating during non-sun hours.

Global irradiation and solar electricity potential in optimally-inclined position (JRC – EC)



In Malta annual duration of sunshine is, in average for the country, around 3.000 hours, while the DNI average is 1.900 kWh/m2 horizontal until 2.050 kWh/m2 if the modules are placed in optimally-inclined position. These solar resources place Malta in the top ranking of solar capacity in Europe.

KPI indicators for solar thermal heat.

CAPEX for <10.000m2 (€/m2)	450
CAPEX for >10.000m2 (€/m2)	400
OPEX (% of CAPEX)	2,1%
Supply cost (€/MWh)	0
LCOE (€/MWh)	45

Labor intensity (FTE/MWth)	60,58
Lifetime (years)	25
Indirect labor intensity (FTE/MWth)	27,26
Emissions (kg CO2/kWhe) avoiding electricity	0,65
Emissions (kg CO2/kWh) avoiding natural gas	0,181

If the analysis is made from the point of view of the public administration, where public funding is to be allocated to leverage private investment, the KPIs have to be shown as **impacts for each public euro invested**.

KPI indicator	KPI on lifetime
Public investment	1.000 €
RES supported (kWth)	1,6
RES produced (kWh th)	111.765
Full-time employment (FTE)	5,17
Avoided emissions (Ton CO2)	1.816

SOLAR PHOTOVOLTAIC ENERGY

Solar energy is, so far, the predominant viable renewable energy source in Malta, and this led to efforts aimed at increasing the local RES-share to focus on the deployment of photovoltaic systems.

An assessment of Malta's technical potential for solar PV was conducted by the Energy & Water Agency in 2018. The results are similar (although slightly higher) to those estimated by the Joint Research Centre in 2019 using datasets from ENSPRESO, an open dataset for GIS-based energy models on renewable energy potentials, when the same assumptions were applied. The technical potential assessment indicates that PV deployment post-2020 will be largely limited to suitable rooftops within the residential, commercial and industrial sectors, as well as a handful of ground-mounted systems.

The Planning Authority, in collaboration with the Ministry for Energy and Water Management, published the policy framework for the development of solar farms. This provides guidance for the location of new solar farms and identifies environmentally-relevant specifications that need to be integrated into solar farm development. However, the relatively high land costs for such sites, driven by increasing land scarcity, together with significant grid connection costs is impacting the financial viability of solar farms.

Number of PV installations in Gozo

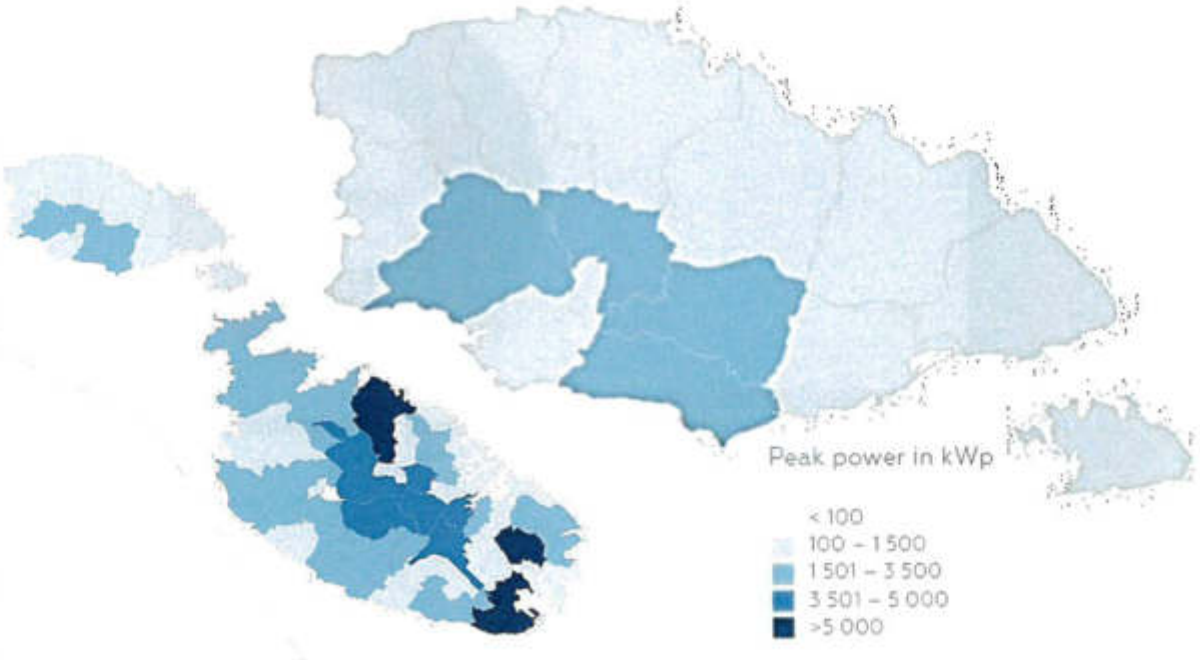
In 2018 Malta stock of PV installations amounted to 25.007 units of which 84.5% were installed in the region of Malta and 15.5% in the Gozo and Comino region, with a total of 3.876 installations.

- The domestic sector accounted for 93.9% of the total stock of PV installations, followed by the commercial and public sectors, accounting for 5.1% and 1.0%, respectively. Most increases in new PV installations resulted from the domestic sector.

- Gozo ratios follows the national average, with a 93,6% of installations in the domestic sector, while commercial installations reach the 5,2% (202 units) and public installations are the 1,2% of the total.

In relation to the concentration of grid-connected PVs, measured as the spread and intensity of domestic PV installations per 1.000 population by locality, the results indicate that the top 10 localities are in the region/district of Gozo and Comino. When analysing the results by district, Gozo and Comino district had an average of 111 domestic installations per 1.000 population.

Gozo detail of Total kWp by locality, 2017 (NSO)



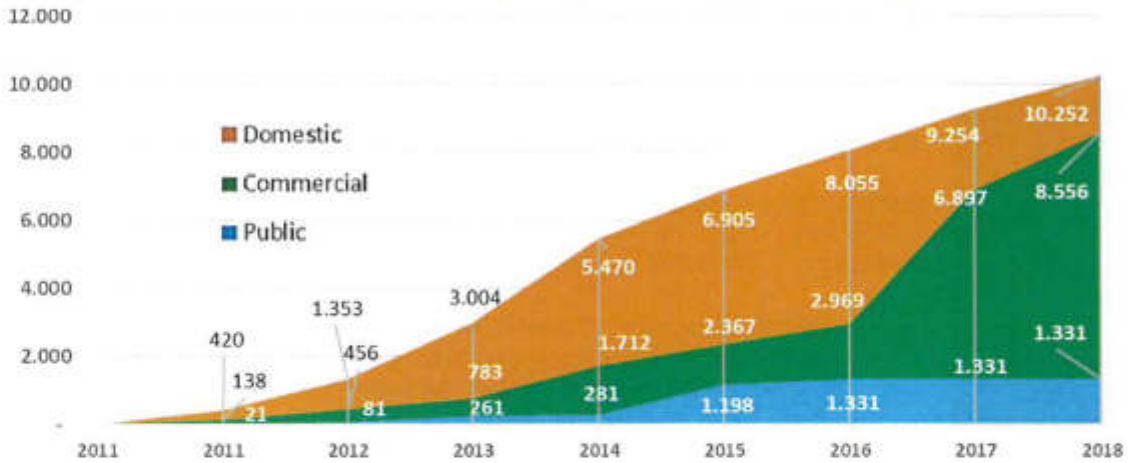
Installed power in Gozo

In 2018, Malta total installed power amounted to 131.303.7 kWp. The domestic sector amounted to 52% of the total kWp, followed by 44% and 4%% in the commercial and public sectors, respectively.

The peak power average PV system in the domestic sector stood at 2.9 kWp, whereas that for the commercial and public sectors amounted to 45.2 and 20.9 kWp, respectively.

The national installed power has increased fast in the last 9 years. Gozo followed similar growing rates that the national level, with few differences except for 2017 where Gozo experimented a peak due to the commercial sector. The following table shows the yearly growing rates.

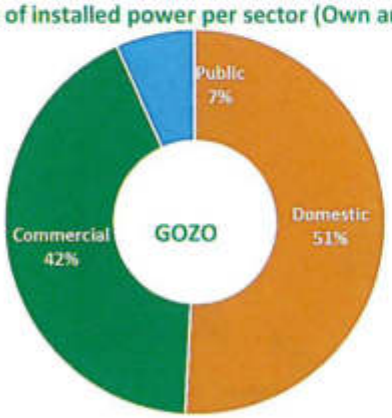
Gozo evolution of installed power per sector kWp (Own and NSO)



Gozo share of installation per sector follows a similar trend than the national share, except for 2017 where there was a sudden rise in the commercial sector. The commercial sector in 2016 covered the 40% of Malta installed power, while Gozo share was 24%. After a high increase in 2017, the final share of commercial PV installations is in 2018 is 43%, similar rate than at national level.

In 2018, the share of installed power in Gozo per sectors, was very similar to the national share.

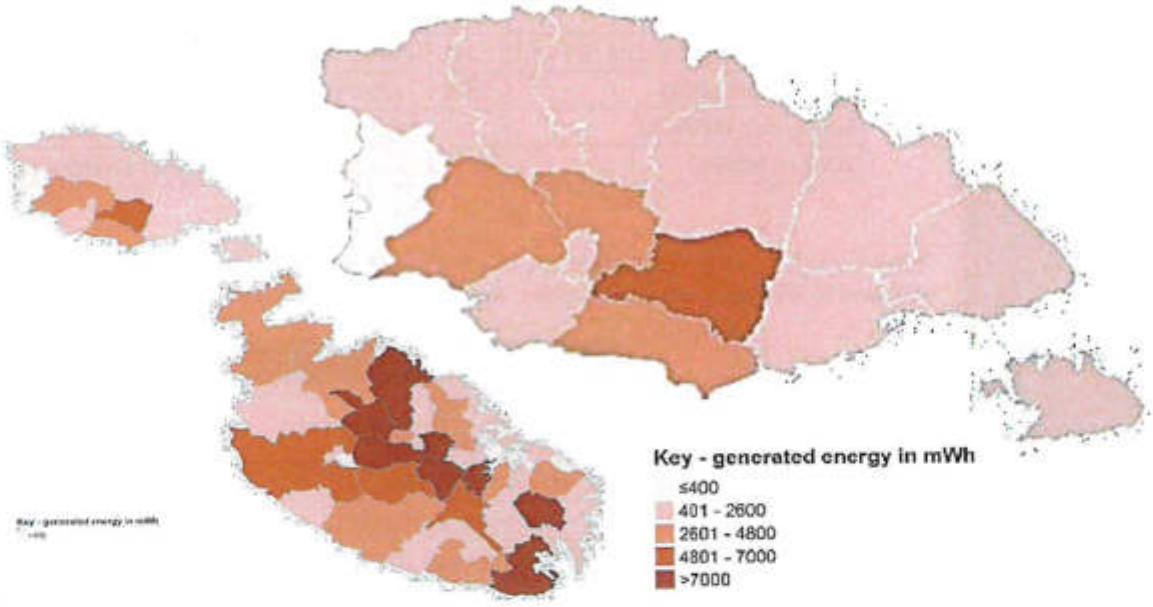
Gozo share of installed power per sector (Own and NSO)



Production of energy from PVs

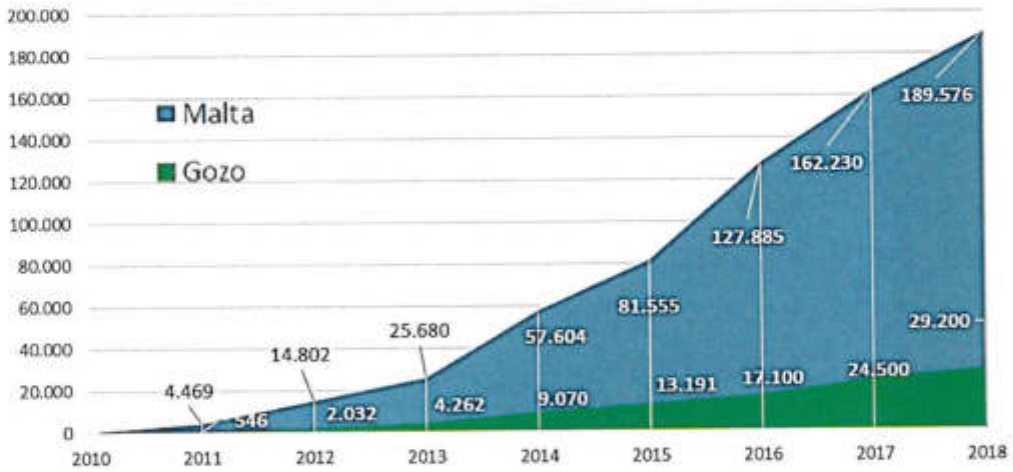
When compared to the situation in 2017, generation of energy from grid-connected PVs increased by 16.9%, totaling an estimated value of 189.6 GWh.

Total estimated MWh by locality 2018 (NSO)



Most energy was generated in the South Eastern and Northern Harbour districts at 19% and 17% of the total GWh, respectively.

Gozo and national share of electricity production (NSO)



Gozo contributions to the national PV energy productions have been placed between the 10% and the 17% depending on the quantity of project under development in other parts of the country. In 2017 and 2018 the energy production of Gozo supposed the 15% of the national production.

The yearly growth rate of energy generated is aligned with the growth rate of the installed power, with some divergences surely due to starting generation moments of the new promoted plants.

The consumer price of electricity for households in Malta is below the EU average. In 2019 Maltese households paid on average 14 cents per kWh for electricity (EU average 24 cents per kWh).

The price of electricity for others than households, such as industry, in Malta was about 16 cents per kWh (EU average 17 cents per kWh).

These prices make possible a large development of PV technology for self-consumption in a cost effective way. However, upfront investment remains high, so initial public support will be an added incentive to boost a large PV deployment in the industry.

KPI indicators for solar PV electricity.

CAPEX for industrial site (€/kWp)	1.100	Labor intensity (FTE/MWp)	15
OPEX (% of CAPEX)	1,5%	Lifetime (years)	30
Supply cost (€/MWh)	0	Indirect labor intensity (FTE/MWp)	6,75
LCOE (€/MWhe)	60,0	Emissions (kg CO2/kWhe) avoiding electricity	0,65

If the analysis is made from the point of view of the public administration, where public funding is to be allocated to leverage private investment, the KPIs have to be shown as **impacts for each public euro invested**.

KPI indicator	KPI on lifetime
Public investment	1.000 €
RES supported (kWp)	0,9
RES produced (kWhe)	51.818
Full-time employment (FTE)	0,59
Avoided emissions (Ton CO2)	1.010

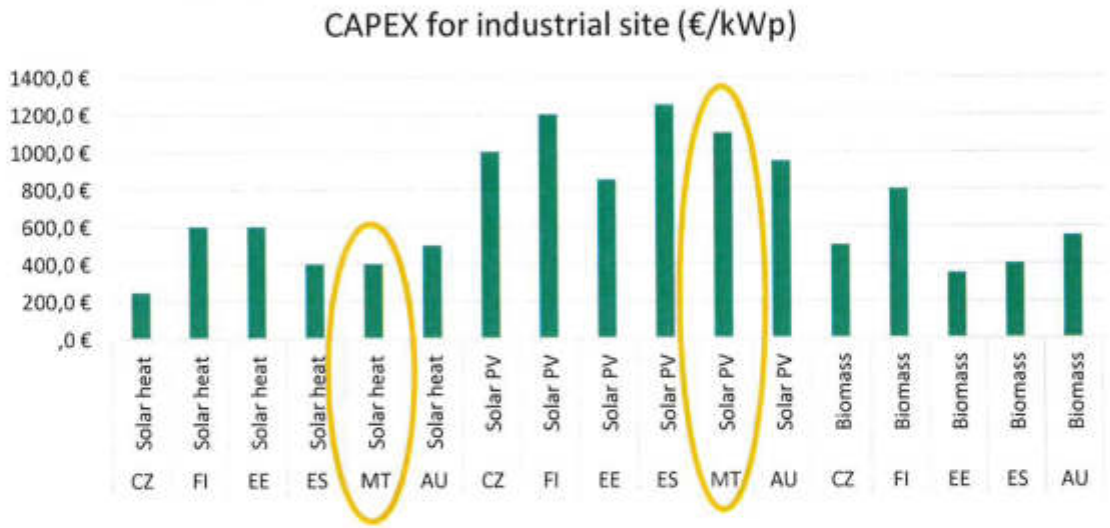
COMPARISON OF INDICATORS PER COUNTRY

Similar Key Performance Indicators have been calculated for each country of the consortium, so a potential comparison of values can be reached, in order to create a baseline for the later conclusions per country.

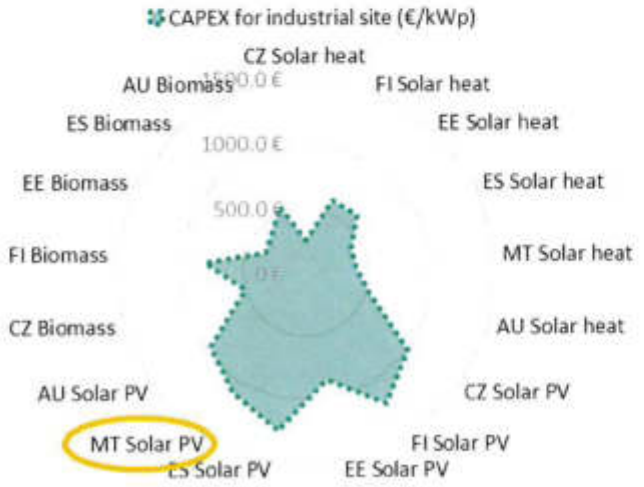
Capital Expenditure (CAPEX) has been calculated as an indicator which measure how much energy power investment can be achieved with the public support. In this sense, it is important for the administration to promote as much Renewable Energy Power as possible, in order to cover the peak of energy demand that the energy system will require in specific moments.

CAPEX has been used to calculate the KPI related to Watt peak which can be introduced in the energy system. As the objective is to introduce in the energy system as much RES power as possible, lower CAPEX allows more power installation with the same capital, so lower CAPEX are beneficial for the system.

Comparison of CAPEX calculated per country and technology in RESINDUSTRY



Even if considering global markets, CAPEX can vary importantly between countries for a same technology, such as biomass, where prices in Spain or Estonia are half the price for an installation in Finland. On the other side, solar thermal has quite average prices, with **Malta** being in a good CAPEX position. However, PV technology prices are high if compared with the general project average. This will significantly affect the profitability of the country investment if the final energy produced is taken into account as a main KPI.



For instance, with the same 100.000€ of public support, and having similar natural resources, countries such as Finland and Estonia will have to design different support tools for reaching the same results.

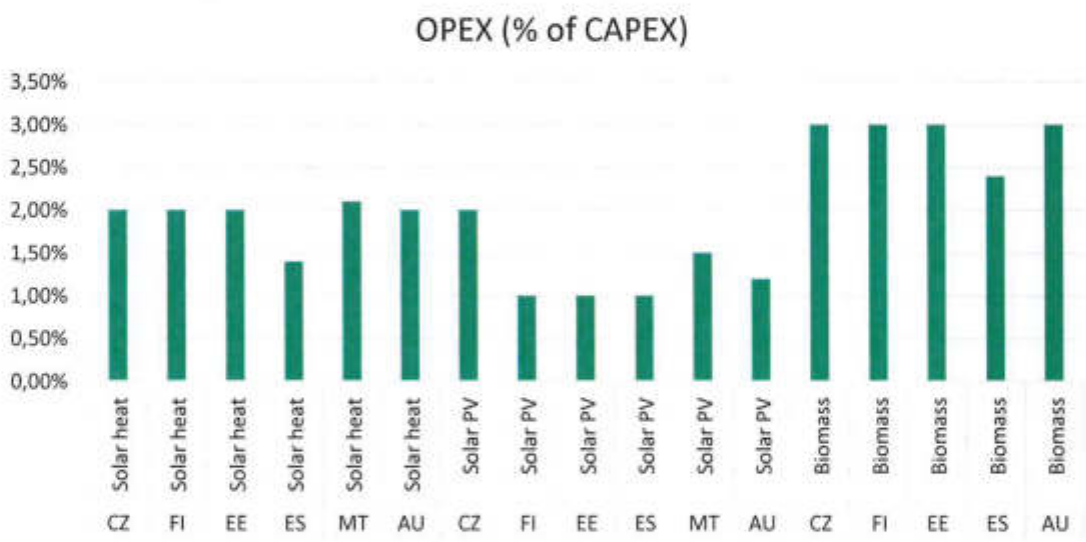
If the current country strategy would be to install as much RES power as possible in order to cover the peak demand of the country, then different indicators have to be considered when designing the policy support:

- Malta has not potential to exchange among technologies, due to solar thermal is used to provide heat, while PV provides electricity. Thus, in order to increase peak power, both technologies are required.
- Other countries, such as Estonia and Finland can decide which technology to promote. They have similar CAPEX in solar heat, 600€ / kWp, while in biomass Estonia have 350€/kWp versus nearly 800€/kWp in Finland. So, just considering promotion of installed power capacity, Estonia will have to include biomass as key technology while Finland should consider the solar technology as prime promoter.

However, to consider one indicator as unique strategy promoter is done in very scarce strategies. The common design has to include several indicators, where not only the power installed is considered, but other indicator such as the final energy delivered of the economic impact of the final investment.

The Operational Expenditure (OPEX) is established in most of cases as reference to the initial capital expenditure or CAPEX, as a % of this amount. This economic value can be considered as not interfering the decision of the public policy, but in a final term it will affect to the final energy price, which is a key indicator used on the promotion of renewable energies for the last year all over Europe, so OPEX has to be considered as a value interfering final decisions of public support.

Comparison of OPEX calculated per country and technology in RESINDUSTRY



In a similar way than CAPEX, even if considering global markets, OPEX can vary importantly between countries for a same technology, such as Solar PV, where prices in Czech Republic can double prices on Spain or Finland. However, in this case, as it will be displayed in the calculation of the final energy prices, OPEX does not affect significantly the final energy produced as a main KPI.

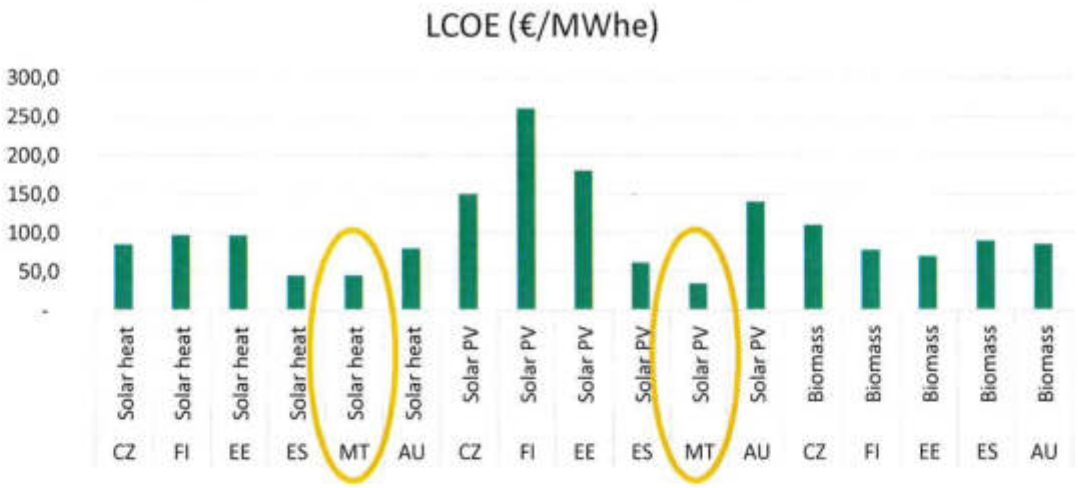
Levelized Cost of Energy (LCoE) is one of the main key indicators to be considered, both by the private investor and the public supporter, because it calculates the energy cost as the sum of costs over lifetime, divided by the sum of energy produced over same lifetime.

LCOE does not represent cost of energy for consumer, but it is a key figure from the investor point of view. On the other hand, care should be taken in LCOE values if compared among different studies, because LCOE for a given energy source is highly dependent on the assumptions, financing terms and technological deployment analysed.

In any case, if similar references and data sources are taken into account for the calculation of LCOE in different technologies, thus LCOE allows the comparison of different technologies (e.g., wind, solar, natural gas) of unequal life spans, project size, different capital cost, risk, return, and capacities.

This is the reason of proposing LCOE as a main KPI in RESINDUSTRY analysis of technologies.

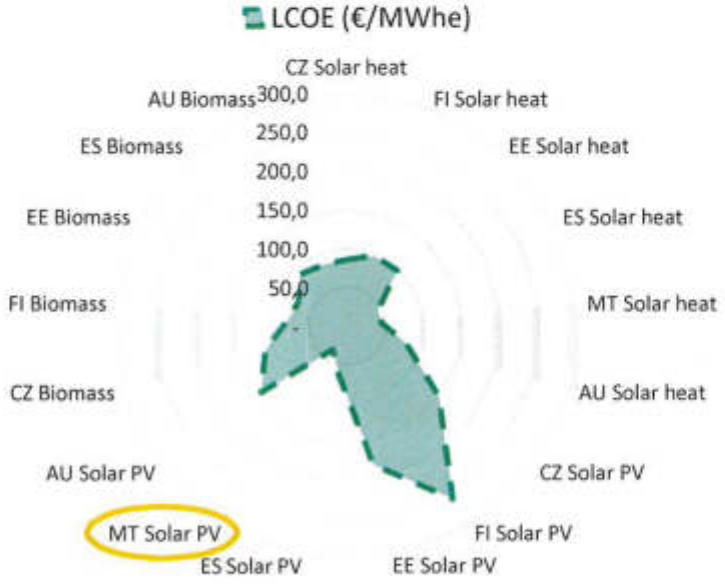
Comparison of LCOE calculated per country and technology in RESINDUSTRY



In a logical way, LCOE is the result of a calculation taking into account many different factors, where the natural resources available is one of the main parameter influencing the result, together with the investment cost per technology, the operation cost, etc.

Public authorities could use these parameters when analysing which technology can provide the political objectives at national level, using the public resources in a more cost-effective way. For example, inside a same country, such as Finland, some technologies provide energy with a cost doubling other technologies, so the public support would be more effective if streamed to technologies with lowest LCOE.

However, political support to technologies has also to consider the diversification of the energy mix, together with the capacity of each technology to generate specific energy types, due to some technologies such as CHP can generate both heat and electricity while PV can generate just electricity.



In the general project analysis, some technologies are exceptionally well placed in the generation of energy in a cost-effective way, even if some of the analysed best practices have shown higher values than expected, for example CAPEX in Malta, but the current market trend for 2021 and 2022 shows a clear global decrease which position Solar, both PV and heat, in exceptional place for Malta and Spain.

Both countries will also soon reach an equilibrium with storage technologies, due to high electricity market price, which suppose that the investment in electricity storage through batteries should be fostered.

NATIONAL PUBLIC INVESTMENT INDICATORS

Once every technology has been analysed in terms of national KPIs for Malta and Gozo, a comparison can be made among the different impacts achieved by technologies when they are supported in a similar way by public funding.

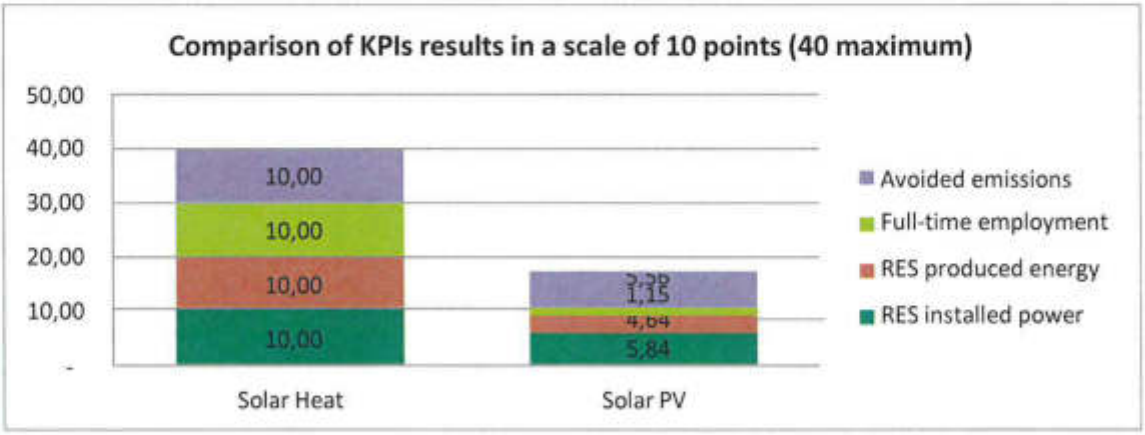
KPI indicator (values on lifetime)	Solar Heat	Solar PV
Public investment	1.000 €	1.000 €
RES power (kW th; kW th; kWp)	1,56	0,91
RES produced (kWh th; kWh th; kWhe)	111.765	51.818
Full-time employment (FTE)	5,17	0,59
Avoided emissions (Ton CO2)	1.816,18	1.010,45

	RES installed power (kW th; kW th; kWp)	RES produced energy (kWh th; kWh th; kWhe)	Full-time employment (FTE)	Avoided emissions (Ton CO2)
Solar Heat	1,56	111.765	5,17	1.816,18
Solar PV	0,91	51.818	0,59	1.010,45

If a simple conversion system is applied to the technologies and their achieved indicators, trying to compare the results achieved, by providing 10 points to the highest impact achieved and applying a simple lineal conversion rule of three to the other impacts, the following values result.

	RES installed power	RES produced energy	Full-time employment	Avoided emissions	TOTAL
Solar Heat	10,00	10,00	10,00	10,00	40,00
Solar PV	5,84	4,64	1,15	5,56	17,19

Graphically, the results are clearly favoring the biomass technology in every KPI, while solar heat get a second position with half the impacts of the biomass, while Solar PV remains in third position with close to ¼ of the impacts achieved by biomass.



Results show what has already been achieved through previous policies, because solar heat was one of the first technologies supported by Policies in Malta, which is widely implemented in residential and commercial sector. Currently PV installation are being promoted as second most preferable option.

COMPARISON NATIONAL PUBLIC INVESTMENT INDICATORS

As a final review, the Key Performance Indicators have been redefined for each country of the consortium, calculated on a public investment base.

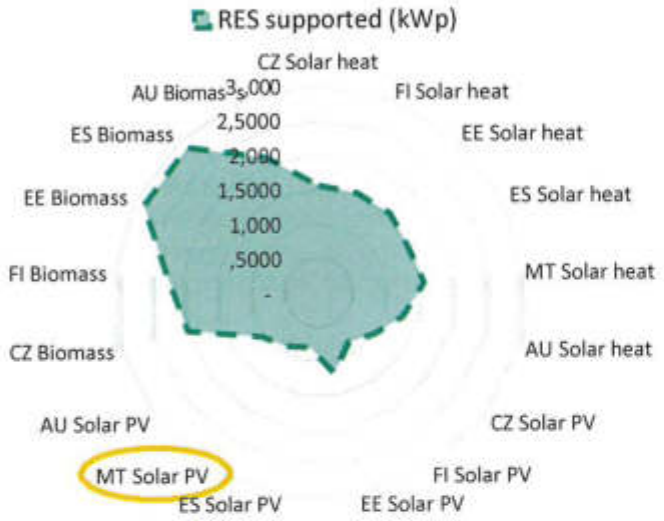
This country base KPI allows a potential comparison of values can be reached, in order to create a baseline for the later conclusions per country. Power installed, calculated as the number of kW peak power which can be

installed with 1.000€ investment, even if the rate of public funding has not been predefined, has been calculated a main KPI.

The Power installed has been calculated as an indicator which measure how much energy power investment can be achieved with the public support. In this sense, it is important for the administration to promote as much Renewable Energy Power as possible, in order to cover the peak of energy demand that the energy system will require in specific moments.

Power installed has been used to calculate the KPI related to Watt peak which can be introduced in the energy system.

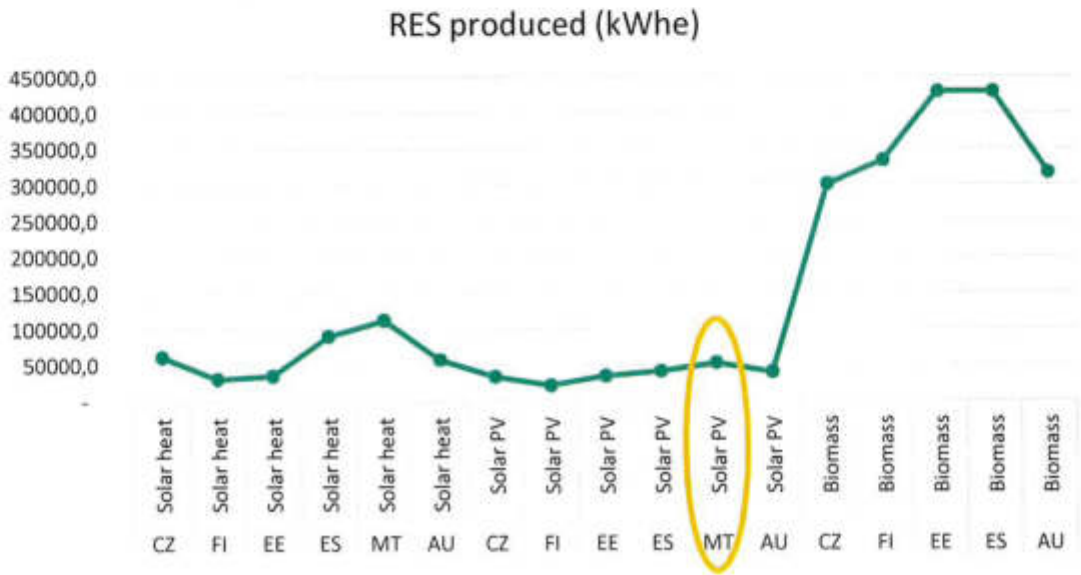
Comparison of power installed with 1.000€ investment per country and technology in RESINDUSTRY



The primary energy produced in kWh could be the final key indicators to be considered, both by the private investor and the public supporter, because it calculates the energy to be delivered in a base of 1.000€ invested.

On the other hand, care should be taken in these indicators to other related data such as the cost for operation and maintenance of this energy produced, so in a way this indicator should be considered together with LCOE, because LCOE for a given energy source is highly dependent on the assumptions, financing terms and technological deployment analysed.

Comparison of energy produced with 1.000€ investment per country and technology in RESINDUSTRY



Both, installed power and energy produced, indicators for Gozo are not high if compared with other countries such as Finland or Czechia where the biomass resources are large, but the solar technology is moving fast into pole position of leading tchnologies in soth Spain and will be soon a main roler in the energy mix. Thus, the KPIs for solar PV in Malta will improve and place the island in a excellent position to promote a energy independency for electricity, even if it will require a decisive investment in electrocity storage systems.

Other indicators have been analysed and included in the different country descripction, in order to enlarge the references that the Managing Authority can use when analysing the public investment benefit.

One important indicator has been the emplyment, which in most of literature refers to jobs creation per sector of renewable energy (labor intensity). Labor intensity has been defined as jobs/MW (or FTEs/MW), and later transferred into jobs per 1.000 € of investment.

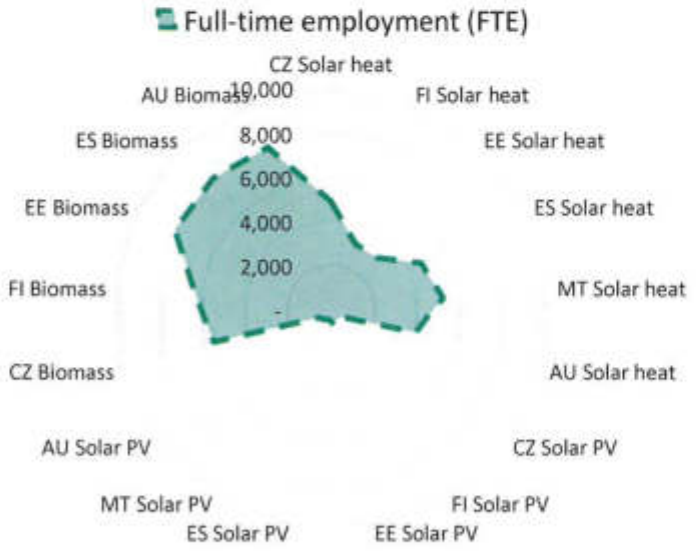
The employment effect is defined as the direct and indirect employment related to the added RES capacity, O&M and exploitation of RES.

- Direct jobs are those created through contractual or non-contractual engagement with an incorporated company
- Indirect jobs are the formal and informal jobs created by vendors and suppliers who serve the sector upstream or provide services for day-to-day operations either with or without a contract.
- Induced jobs are those created through forward linkages as workers in the sector spend salaries on goods and services throughout the larger economy.

Potential employment placement in a full lifetime of RES in industries

Project Development	Construction & Installation	Operations & Maintenance
• Technical design • Feasibility study • Permitting • Project finance	• Procurement • Transporation & logistics • Construction & fabrication • Civil works • Installation	• Customer service • Technical maintenance • Payment collection

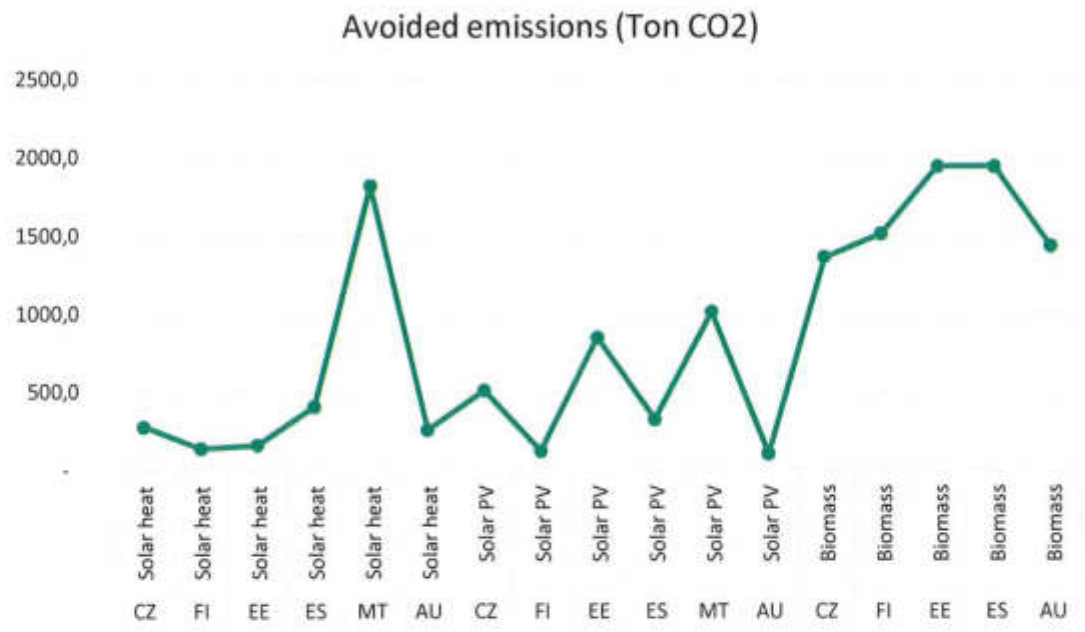
Comparison of employment produced with 1.000€ investment per country and technology in RESINDUSTRY



In every country, the main technology in terms of FTE has been biomass, specially due to the production of biomass feedstock. Biomass analysis of employment presented additional job creation structures, especially in the fuel supply side, which had important impacts in the final job creation factors.

In relation to the environmental KPIs, renewable energy sources contribute to improving air quality and human health, for instance by supplying electricity or heat without combustion. Technologies such as solar PV electricity, geothermal energy, heat pumps or solar thermal energy are therefore most effective at cutting the air pollutant emissions that are associated with most burning processes.

Comparison of CO2 avoided with 1.000€ investment per country and technology in RESINDUSTRY



Relation between countries and technologies is not direct, because each country has different emissions levels due to the current energy mix, with Malta having a high rate of emiccion for each kWh produced, and thus being the most benefited country for introducing any RES technology.

On the technology side, biomass is generally the technologies achieving more emissions reduction.

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