Malta Policy Action Plan Report
&
Market Needs Report

Project title: "Promotion of near Zero CO_2 emission buildings due to energy use"

Project partner 9: University of Malta

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1 Aims of the Interreg Europe ZEROCO2 project and of the policy action plan report

An Interreg Europe project allows partners from different countries to work together on a shared regional policy issue by exchanging their experiences and practices in order to integrate the lessons learnt from this cooperation into their policies. It builds on the experience of the participating regions and focuses on the identification, analysis and transfer of good practices and policy experiences among these regions.

The main aims of the Interreg-Europe programme are summarised as follows:

1. Reduce the influence of national borders in favour of equal economic, social and cultural development of the whole territory of the European Union.
2. Enhance cooperation between policy makers in European regions rather than European countries through the different projects and the common Interreg-Europe Policy Learning Platform initiative.
3. Help governments do their job better vis-a-vis territorial funding that are part of the European Union Cohesion Policy.
4. Focus on particular aspects of regional policies and address them from a policy and planning perspective rather than a technical and research-based aspect.
5. Monitoring the outcome of these projects over a period of 2 years to ensure success.

The ZEROCO2 project entitled ''*Promotion of Near Zero CO2 Emission BDue to Energy Use*'' is an Interreg Europe project that falls under Interreg Europe priority axis 3: '*Low-carbon economy*'. The specific objective is to address policies, support actions and investments to increase the levels of energy efficiency in public buildings and the housing sector, as well as to raise the share of energy from renewable sources in the overall energy mix.

The Interreg Europe ZEROCO2 project within this prioirity axis aims to:

- Define near zero CO2 emission buildings due to energy use (NZCO2EB) and present the various benefits which result from this type of building;
- Analyse the combination of different technologies and energy efficiency measures, which can be used in order to achieve the abovementioned target;
- Identify state of the art policies, which will aim at promoting NZCO2EB at the local, regional and national level;
- Present various financial tools in order to promote these types of buildings.
- Monitor the implementation of the policy action plan over two years.

The project's focus is on new and existing public buildings to be renovated, including the housing sector. Public buildings are defined as buildings that are frequented by the general public such as hotels, cinemas, restaurants, health centres, shops and sports complexes. In order to satisfy these objectives, the ZEROCO2 project follows an interregional approach, which links different policy makers and stakeholders to understand common challenges and share good policy practices among the project partner regions. The University of Malta is one of the eight partners who are:

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- PP1: Local Energy Agency Spodnje Podravje (Slovenia) is the lead partner;
- PP2: Mediterranean Agronomic Institute of Chania (Greece);
- PP3: Molise Region (Italy);
- PP4: Municipality of Kaunas District (Lithuania);
- PP6: European Institute for Innovation (Germany);
- PP7: Thermopolis Ltd. (Finland);
- PP8: Agency for Sustainable Mediterranean Cities and Territories (France);
- PP9: University of Malta (Malta)

The Policy instrument being addressed for Malta is the Cohesion Policy 2014-2020, Malta's Operational Programme 1 - *Fostering a competitive and sustainable economy to meet our challenges*- Priority Axis 4 - S*hifting towards a low carbon economy*. More specifically the project addresses Priority 4c - *Supporting energy efficiency, smart energy management and renewable energy use in public infrastructure, including in public buildings, and in the housing s*ector.

The University of Malta is the project partner for Malta. The two main stakeholders for this project in Malta are the Energy and Water Agency (EWA) and the Building Regulation Office (BRO). The EWA has the responsibility of formulating and implementing Government's national policies in the energy and water sectors, while the BRO is responsible for the administration of building regulations and building control regulations made in accordance with the Building Regulation Act.

Other participating stakeholders included the Housing Authority, the Planning Authority, the Education Department, Ministry for Transport, Infrastructure and Capital Projects, Malta Developers Association, GRTU Malta Chamber of SMEs, HSBC Bank, Malta Energy Efficiency and Renewable Energies Association, practicing architects and engineers as well as renewable energy companies.

The ZEROCO2 project started in April 2016 and has a duration of four years in total. The project is designed in two phases:

- 'Phase 1': April 2016 – March 2018 is divided equally into four semesters and is dedicated to interregional learning and to preparing the exploitation of the lessons learnt from the cooperation through the development of a policy action plan by each project partner.
- 'Phase 2': April 2018 – March 2020 is dedicated to monitoring the implementation of the proposed policy action plan. When relevant, pilot actions may also be tested during this phase but these have to be budgeted for at proposal stage.

The ZeroCO2 project is nearing the end of Phase 1 and the aim of this document is to present the proposed Policy Action Plan for Malta as a final outcome of the ZEROCO2 project.

Various regional stakeholders and project partner meetings and seminars have been carried out during the four semesters of phase 1. These encounters were enriched by a full review of existing studies and research work of relevance to the project, to produce the required deliverables. Based on these deliverables and lessons learnt, the aim of the policy action plan is to provide insight to policy makers and assist them in improving existing policies and considering new ones within the regional policy instrument addressed, in order to accelerate the transition to low carbon economy, in line with the objectives of the relevant EU directives and the spirit of the Interreg Europe programme. The action plan specifies the nature of the actions to be implemented, their time frame, the players involved, the costs (if any) and funding sources (if any).

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This policy action plan report is divided into the following sections:

- Section 2 provides a brief description of the main deliverables produced, and lessons learnt from the first phase of the ZEROCO2 project;
- Section 3 provides a description of the proposed policy actions required to promote near zero CO2 emission for buildings in Malta due to energy use. These proposed policy actions are based on the deliverables and lessons learnt from the first phase of this project, in consultation with all interested stakeholders.

This report is to be read in conjunction with:

- The market need report (attached in Annex 1).
- Presentation and meeting minutes of the ZeroCO2 high level meeting with policy makers (attached in Annex 2)

2 Deliverables and lessons learnt from Semesters 1 to 4

Figure 1 shows the required deliverables per semester for the ZEROCO2 project phase 1 (Semesters 1 to 4). Deliverables denoted with "*partnership*" in Figure 1 means that a common output between the partners was/will be produced, while for deliverables denoted by "*all partners*", implies that a separate report was/will be produced by each partner.

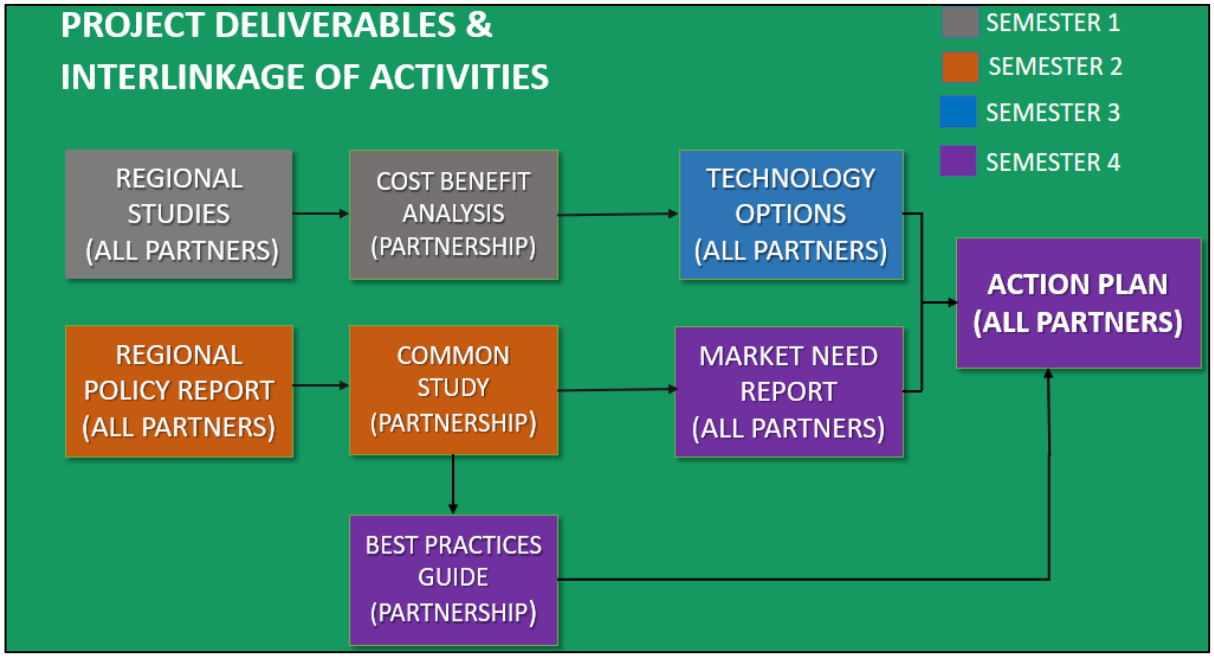

Figure 1: Deliverables per semester for project phase 1

Sections 2.1 to 2.3 below describe briefly the stakeholder events that took place and the deliverables produced during the first four (4) semesters of the project. The lessons learnt from each deliverable of the interregional partner events organised per semester will also be highlighted.

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2.1 Semester 1 (April 2016 – September 2016)

Main semester events:

- 9 - 10 June 2016: ZeroCO2 Interregional Partners Kick-off Meeting in Ptuj, Slovenia
- 14 -15 September 2016: Interregional Partner Meeting, Berlin, Germany
- 29 September 2016: Regional stakeholder's seminar, University of Malta, Valletta
- 29 September 2016: A Memorandum of Understanding signed between the partner University of Malta and the two main stakeholders, the Energy and Water Agency – responsible for the implementation of the Energy Efficiency Directive and the Building Regulation Office – responsible for the implementation of the Energy Performance of Buildings Directive, was handed over in a short ceremony.

Main Deliverables:

- **Regional Study: The use of Renewable Energy Sources in Malta (Base Year 2014)**, provides a review, based on 2014 data, on the extent of energy delivered by the different renewable energy sources in Malta.

- **Study on transformation of one building to Near Zero CO2 emission building due to energy use** [1], [2], presents a case study from both a technological and financial point of view to reduce CO_2 emissions for a typical small hotel in Gozo.

Main Lessons learnt:

1. **Lesson learnt from sharing of experience with project partners regarding regional studies**: In Crete, there is a much higher percentage contribution of solar thermal energy rather than solar photovoltaics given that there is a legal requirement in Crete for new buildings to install solar water heaters. This is different for Malta (despite having a similar climate as Crete), because the trend is shifted towards photovoltaics instead of solar thermal, primarily due to the feed-in tariff and capital grant available. A policy measure similar to that in Crete can be adopted given that solar water heating, having a much higher efficiency than photovoltaics, should remain a very important renewable technology option. It is also to be noted that solar thermal storage potential is the main cost-effective renewable energy storage system that can alleviate generation peaks at the power station, because over 90% of hot water boilers in Malta are still being powered by electricity. In addition, partner countries, generally rely on biomass as a means to reduce their CO_2 emissions, a resource which is non-existent in Malta.

2. **Lessons learnt from the study for the transformation of one building to Near Zero CO2 emission building due to energy use:** One can reduce the operating CO_2 emissions by **more than 75%** for a small hotel building, when compared to a reference scenario (based on Technical Document F minimum energy requirements). Such reductions can be achieved by a combination of energy efficiency measures and renewable energy, which cumulatively resulted in a reasonable payback period of approximately nine years.

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Reducing energy consumption for hot water has been identified as the primary factor to be considered, to reduce carbon emissions in hotel buildings. Therefore, the push to popularise the use of solar water heating and heat pump water heaters should be given priority in terms of policies and support measures for the hotel industry.

3. **Lessons learnt from local stakeholder's feedback during the September 2016 seminar event:**
   a. Some stakeholders feel that nearly zero CO2 due to energy use buildings (NZCO2EB), have an investment potential and should be looked as the norm and current modern trend. The payback period should not be seen as the only measure for investing in such buildings. Others feel that it is too early to gain a competitive edge by investing in such buildings and for now government should take the initiative to lead by example.
   b. Factors that were mentioned by stakeholders besides legislation, in order to encourage operators in investing in ZeroCO2 technology, were one's commitment to sustainable development that instills a sense of responsibility, through education and information campaigns. Giving a price to the carbon emissions and sharing of best practice examples could also encourage operators to adopt energy efficiency measures.
   c. Time frames to reach zero CO2 status: Mixed opinions from different stakeholders were received where the year 2035 was seen as a final target, while others stated that this depended on the economic well-being of society. Others were of the opinion that NZEB and NZCO2EB is realistic for new buildings and for the retrofitting of non-domestic buildings, but may prove a bigger challenge when dealing with the existing residential sector. Given that Malta is passing through an economic boom, commitment towards increasing the share of NZCO2EB should only come naturally, if the demand for such buildings increases.
   d. External shading, LED's, solar water heaters, heat pumps and roof insulation were mentioned as the technologies having the best potential for reducing carbon emissions. Most of the stakeholders feel that there are added challenges in retrofitting to NZCO2EB when compared to new buildings.

2.2 Semester 2 (October 2016 – March 2017)

Main semester events:

- 1st November 2016: Outreach meeting with the Building Industry Consultative Council (BICC)
- 24th November 2016: Interreg Europe ZeroCO2 Project - 2nd stakeholders meeting in Malta
- 7th December 2016: FPD Certificate of Participation in Interreg-Europe
- 8th March 2017: Interreg Europe ZeroCO2 Project regional workshop, Malta
- 22nd-23rd March 2017: The European Interregional cooperation forum 'Europe, let's cooperate!'. A Campfire discussion event for ZeroCO2 was delivered
- 14-15th March 2017: ZeroCO2 interregional partners meeting and study visit in Molise, Italy

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Main Deliverables:

- **Presentation on the overview of policy measures towards near zero CO2 buildings** [3] [4]: includes a detailed literature review of guidelines and state of the art policies from various sources around Europe, such as Building Performance Institute Europe (BPIE) and Entranze. These guidelines and state of the art policies were discussed with stakeholders during the seminar meetings and stakeholders' feedback was provided via targeted questionnaires. The questionnaires concerned the drivers, barriers, and opportunities to retrofit buildings to NZCO2EB, including the priority measures that should be considered.

- **Regional policy report for Malta** [5], [6] presented a PESTEL analysis of the current policy mechanisms for renewable energy and energy efficiency. Feedback from the primary stakeholders was ensured, together with feedback from a number of other stakeholders that participated in the regional seminar, in order to carry out the PESTEL analysis and suggest improvements for the various existing policy mechanisms for renewable energy and energy efficiency. In addition, a good practice example of the St. Nicholas College Primary School Siggiewi in Malta was also presented in this policy report. This is an example of deep renovation project for an existing building to achieve zero energy status, co-financed by ERDF and the FIT scheme for solar photovoltaics. Data regarding the national funds used so far and foreseen funds for current policy mechanism on renewable energy and energy efficiency were collected from the following entities – 1) the Regulator for Energy and Water services (REWS), 2) the Energy and Water Agency and 3) the Malta Enterprise. This data was compiled for the first time specifically for this project. The base year was 2015.

- **Technology options towards NZCO2EB for Malta presentation** [7], [8] presented different passive and active technology options to reduce CO2 emission from buildings, including the options that can be considered first i.e. the least painful options (quick wins) and others which have longer payback periods. In order to identify the most suitable options including state of the art technology options for local buildings, both local and foreign literature on technology options for hot humid Mediterranean climates were carefully reviewed.

  In addition, the Maltese climate weather file was also plotted on a psychrometric chart using Climate Consultant software, so as to identify the best technology options for Malta to reach comfort levels. Feedback from local architects and engineers have also been solicited. A questionnaire to get feedback on technologies to be considered for public buildings was distributed to stakeholders.

- **Common study** [9]**:** compiled by PP3 - Molise Region (Italy) provided a comparison of the energy policies and best practices for reducing carbon emissions in the building sector from partner regions.

Main Lessons learnt:

1. **Lessons learnt from exchange of experiences:**

a. From the common study, the following good practices or policy instruments adaptable to Malta were noted:

- ✓ **Multi-apartment Buildings Renovation (Modernization) Programme (national)** in Lithuania which offered financial support for low performing buildings. It is also interesting to note that the policy has been refined in 2013 to become successful. Refinements included the requirement that in order to implement modernization project it is sufficient to have 50% +1 of apartment owners of the housing community vote in favour.
- ✓ Other good policies that can be adopted involve policies related to the **energy efficiency renovation of the housing sector** as identified in the regional policies report of Slovenia, Finland, and France. In Finland, subsidies are used to develop sustainable, high-quality and reasonably priced housing and to improve the housing conditions of people with low or average incomes and special needs. One of the main aims is to provide much needed affordable rental apartments. One good policy in France that could be applied for Malta is **financial and technical support for thermal solar equipment installation** for social housing.
- ✓ One other good policy in France is the **Regional Platform for Energy Transition**. This policy objective is to provide advice and service to private stakeholders and households willing to engage in renovation works of their housing. Support is both financial and technical. Energy efficient advice to residential buildings is offered in Malta, however its objectives and level of support can be consolidated and broadened.
- ✓ The **Energy Aid in Finland** – which promotes the introduction and market launch of new energy technology is an interesting policy. Based on the assessment of each specific project in question, energy aid can be granted to companies, municipalities and other organizations for climate and environment investments and studies that promote:
    - The production or use of renewable energy,
    - Energy saving or more efficient energy production or use and
    - The reduction of environmental damage caused by energy production or consumption.

  The primary aim of the aid is to launch investments by increasing their profitability and minimizing the financial risks associated with the introduction of new technology.

b. Common barriers among partners to NZCO2EB were discussed in this semester. One of the common problems among the different regions is the current low tariff of electricity, which results in relatively higher payback periods for energy efficient technologies. Education and higher awareness is required to beat this obstacle, including the fact that energy efficient decisions should not be only based on payback periods but also on potential reduction of carbon dioxide emissions.

c. One noted that many best practices that the partners have presented were of school projects. This stresses the point that the new generation of European citizens need to be targeted to have a better chance of achieving near-zero CO2 in the future.

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d. Two state of the art public energy efficient buildings were also shown during the study site visit in Molise enabling one to appreciate and compare the different measures and the level of sophistication that has been applied to buildings in different regions to reach NZCO2EB. One of these buildings was the centre for regional sports programmes. Hence, one can see that even presumably unrelated sectors such as sports clubs and centres can indeed participate in energy efficient programmes. The visits helped one to visualise the positive change that energy efficient buildings have on indoor comfort.

2. **Lessons learnt from local stakeholders' feedback:**
   a. Some architects and engineers responsible of designing new public authority buildings were not aware of the EPBD near-zero energy target requirements that must be reached for new and renovated public authority buildings by 31st December 2018. Thanks to this project awareness was raised.
   b. Positive points, bottlenecks and opportunities of the current energy efficiency and renewable energy financial incentives were presented and discussed in a logical manner in the Policy Report PESTEL analysis. Public officers of policy makers have also understood that some current policies, which have not been updated for the past years (such as the roof insulation scheme, double glazing grant and solar water heating subsidy) deserve a revision to bring them up to date with the current research studies and to revive their relevance to today's status. A critical PESTEL analysis for each energy efficiency and renewable energy financial incentive is explained in detail in the report [5].
   c. The main lessons learnt from Stakeholder's feedback to questionnaires that concerned the drivers, barriers, and opportunities to retrofit to NZCO2EB included (refer to [3] and [4] for details):
      - The **main drivers** for retrofitting a public building to NZEB includes energy cost savings and financial incentives. The promotional aspect of advertising a building as environmentally friendly also scored a high importance rating. Tax rebates for contractors who opt to build more efficient buildings beyond the minimum energy requirements of Technical Document F were also mentioned by one of the stakeholders as a driver.
      - The issues of lack of financial instruments, lack of demonstration projects, the requirement for realistic NZCO2EB targets for buildings to be retrofitted (which should be specific for the different building types), the conflicting advice given by suppliers on energy efficiency and renewable energy, and the fact that there is low demand for NZCO2 public buildings, all rank high on the **barrier impact** rating. Maintenance issues of energy efficiency measures, difficulty to retrofit occupied buildings, expectation for short payback period and bureaucracy were other issues pointed out by stakeholders as barriers. Improved education on impacts of CO_2 emissions and mentality of non-monetary gain benefit when installing NZCO2EB technologies can help in countering some of these barriers.

- Due to such barriers, the stakeholders' feedback voiced their opinion that the following policy measures should be given priority:
  - ❖ Integrated Design (ID) approach training to architects and engineers.
  - ❖ Focus and incentivise measures targeted towards deep renovation.
  - ❖ Provide long term strategy and clear targets up to 2030/2050 – and avoid stop and go measures.
  - ❖ Ensure that measures incentivise energy efficient occupant behaviour and energy management.
  - ❖ Provide a one-stop shop for all financial incentive measures.
  - ❖ Encourage banks to calculate maximum loan limits for potential property buyers based on the energy performance of the property. This was given priority by a lot of stakeholders. However, some others do not feel this measure should be considered.
  - ❖ Put in place a system where purchasing property tax will depend on building energy performance certificate of the building was also regarded a priority by many stakeholders.
  - ❖ Training and more training.
  - ❖ Provide tailor-made NZCO2EB requirements / specific market-based on financial instruments.
  - ❖ Ensure that energy efficient opportunities are not missed during refurbishment.
  - ❖ Progressive update of minimum energy requirements.
  - ❖ Build more demonstration projects.
  - ❖ Ensure and enforce compliance with minimum energy requirements and building regulations.
  - ❖ Increase access to information on best-practice approaches in energy efficiency and renewable energies as applied to buildings.
  - ❖ Avoid mandating improvement of building stock through restrictions on sale and rent and fixing of renting rates depending on energy performance rating.
  - ❖ Consider mandatory LEED or BREEAM certifications for large projects such as large hotels and high rise building projects.
  - ❖ Organise educational campaigns starting from primary school and promotion of measures and education through popular media and social networks to be sustained over an extended period of time, to have a lasting impact.

2.3 Semester 3 (April 2017- September 2017)

Main semester events:

- 5th May 2017: Information Session for the Interreg 3rd Call organised by the Ministry for the Economy, Investment and Small Business in which the University of Malta was invited to give a talk on the ingredients that make a successful Interreg Europe Project. The good project practices adopted by the ZeroCO2 project were described in detail to the audience.

- 29th May 2017: A presentation on the project ZEROCO2 was carried out in an international conference organised by Paragon Europe and Climate-KIC– Towards a Zero Carbon Economy Beyond 2030, University Campus, Valletta, Malta
- 11th July 2017: Meeting with representatives from the Planning Authority to explain the aims of ZEROCO2 and encourage them to participate in the forthcoming regional seminar of 25th August 2017
- 25th August 2017: Fourth Regional Seminar; "*Policy-Technology-Action: Near Zero CO2 Buildings*", University Residence, Lija, Malta
- 7th to 8th September 2017: 4th Interregional partners meeting and study visit to Crete, Greece

Main Deliverables:

- **Presentation on technology options for achieving Near Zero CO2 Buildings**: Real Operational Results [10] by Dr. Charles Yousif. Performance studies of various energy efficiency options for the building envelope (insulation, shading, glazing), as well as performance of energy efficient technology options when tested in Malta including PVs, solar water heating, infra-red heaters, air to water heat pumps and solar-assisted thermodynamic heat pump water heating were presented during the regional seminar and the interregional meeting. This presentation has given a summary of all research studies relevant to buildings that were carried out in Malta during the past 20 years. Therefore, answers to frequently asked questions on the effectiveness of certain energy efficiency measures were provided.

- **Presentation on pushing the limits of Minimum Energy Requirements**: **A Case Study on a Shop, Restaurant and Hotel in Malta** by Ing. Maria C. Bartolo and Dr. Charles Yousif. It was shown that the most effective measures to reduce CO_2 emissions for restaurants and hotels are heat pump water heaters and solar photovoltaics.

- **Presentation on Shallow-Ground Geothermal Systems in Malta: A New Source of Renewable Energy and Lower Energy Bills** by Ing. Michael Grixti and Dr. Charles Yousif. Operational results from a shallow-ground geothermal system at the Institute for Sustainable Energy, Marsaxlokk, Malta were presented. A higher COP was recorded in both heating and cooling modes for the ground source heat pump when compared to the conventional air-source reversible-cycle inverter-type air-conditioner. This is a potentially new area of technology that can be utilised for space heating and cooling of buildings beyond 2020, to enable the achievement of nearly zero energy status.

Report on the Study of Energy Technology Options for Buildings with ZeroCO2 Emissions Due to Energy Use as applied to Malta's case. A report was presented on the potential of the various renewable energy sources used in Malta. Case studies of various renewable energy technologies from both technical and financial points of view were also presented. The ratings given to various technologies are based on feedback from the detailed questionnaires to stakeholders as identified below.

- A detailed questionnaire was prepared focusing on technology options and on policy measures that need to be implemented in Malta. Seventy-five percent of participants responded. The results of this questionnaire were presented during the Interregional meeting held in Crete, Greece, 7-8 September 2017 and are also uploaded on Youtube [10].

3. Lessons learnt from stakeholders' feedback:

- Table 1 below is reproduced from the study of "*Energy Technology Options for Buildings with ZeroCO2 Emissions Due to Energy Use as Applied to Malta's Case*". Different renewable energy options (PVs, solar water heating and heat pump water heaters) were rated according to different criteria by the stakeholders via questionnaires. The scores for the different technologies are depicted in Table 1. From the ranking, the best score for almost all criteria (except for efficiency) is for photovoltaics. Based on the current incentives, PV technology is the most cost effective, requires little maintenance and provides predictable savings with little user training/interventions required. On the other hand, it is clear that additional efforts need to be put to regain confidence in solar heating. The solar water heating grant should be revised upwards, and product quality better ensured. An internal report carried out by the Institute for Sustainable Energy in 2010 showed that a grant of 650 Euro for a solar heater would be more reasonable, given that the infrastructure and preparations for installing a solar heater are more complicated than a PV system. Solar water heating incentives for other residential buildings should also be highly considered e.g. homes for the elderly, as well as non-residential sectors with high hot water demand (hotels, sports complexes, etc.). A minimum share of solar heating should become mandatory for new buildings.
- Despite their lower scoring in the stakeholders' feedback, the importance of heat pump water heaters should not be underestimated. The rankings may unfortunately not reflect the actual truth, given that heat pump water heaters are quite new to the local market and there is little awareness about their benefits. There were stakeholders who got to know about water heat pumps for the first time during the seminar. In addition, the ranking was carried out prior to the new heat pump water heater grant incentive that was proposed as one of the much-needed measures to promote heat pumps. With satisfaction, Government has announced a grant of 40% up to a maximum of 400 Euro for heat pump water heaters in residential buildings in October 2017. Heat pump water heaters are easier to install than solar heaters and they can be fitted in small spaces such as internal yards, shafts, small roofs or garages, making them ideal for flatted dwellings, where there is no access to rooftops or have shaded roofs, making the use of solar heating impossible.
- Another technology which can also be considered as a renewable energy source are air to air heat pumps (VRF or split units). However, these were not evaluated, given that this technology is widely spread and require no support. Moreover, they are perceived as necessary to attain thermal comfort rather than reduce carbon emissions. Nevertheless, one should stress the importance of using bioclimatic building design to lower space cooling and heating demand and to reduce the capacity for HVAC equipment, which indirectly leads to lower capital costs.

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Table 1: Ranking of different renewable energy technologies (PVs, solar water heating, air to water heat pump) as rated by the stakeholders

		Score from 1 to 5 (1 is low, 5 is high) for **PVs**	Score from 1 to 5 (1 is low, 5 is high) for **Solar water heating**	Score from 1 to 5 (1 is low, 5 is high) for **air to water heat pumps**
1	Cost effectiveness of the total investment	3.92	3.79	3.22
2	Simplification of installation	3.77	3.53	3.37
3	Accessibility (authors' evaluation)	3.7	3.5	4.5
4	Easy to use -for end user (authors' evaluation)	4.5	3.5	3.5
5	Easy to maintain	4.24	3.06	3.28
6	Reliable	4.05	3.57	3.54
7	Efficient (authors' evaluation)	3.5	4	4
8	Power capacity and energy production	3.86	3.55	2.8
9	Social acceptable	3.91	3.9	2.53
10	Promotion by the government with financial or non-financial incentives (authors' evaluation)	4.2	3	1
	TOTAL scores	**39.45**	**35.4**	**31.74**
	Percentage score	**78.9%**	**70.8%**	**63.48%**

Figure 2 to Figure 6 below depict feedback on questionnaires from stakeholders regarding policies that should be considered and prioritised in the Policy Action Plan. The policies were divided into the following five categories

1) Policies from partner regions that can be adopted for Malta
2) Policies to be considered to address administrative and legislative barriers
3) Policies that deal with soft measures that involve training and awareness
4) Policies dealing with regulatory measures
5) Policies regarding technological options that should be made mandatory.

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1. Stakeholders' feedback regarding best policies that can be adopted from partner regions

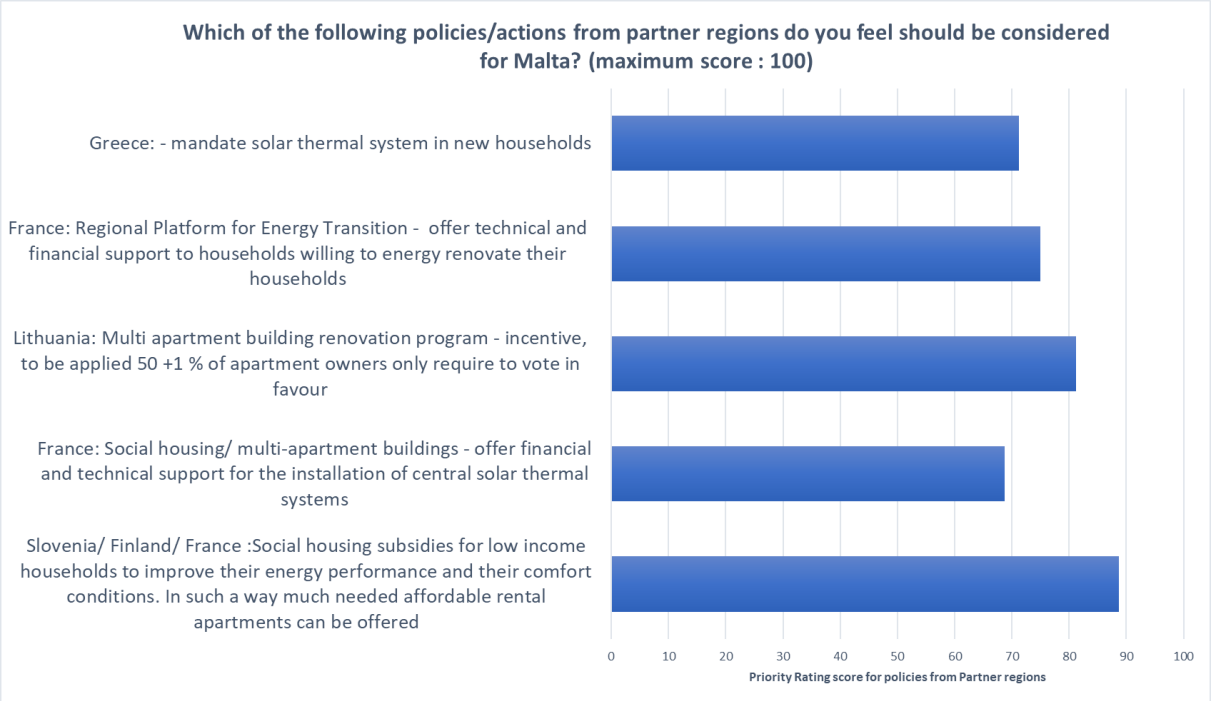

Figure 2: Priority scores for policies that can be adopted from partner regions

2. Stakeholders' feedback regarding measures that should be given priority to tackle administrative and legislative barriers

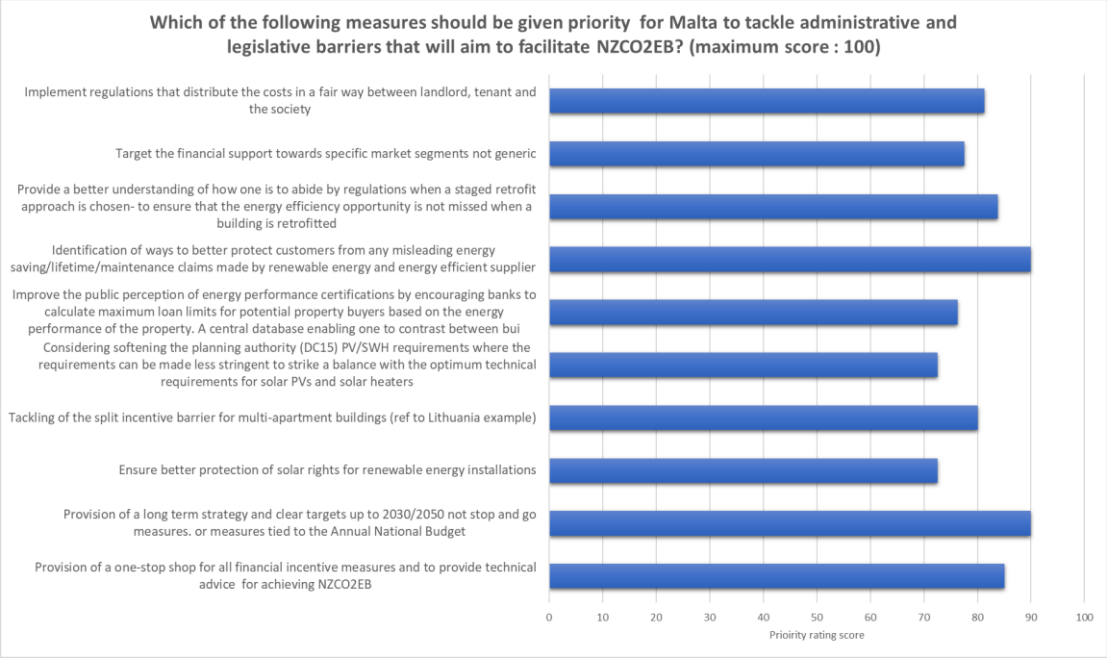

Figure 3: Priority scores for policies to tackle administrative and legislative barriers

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3. Stakeholders' feedback regarding soft measures (training and awareness) to be given priority

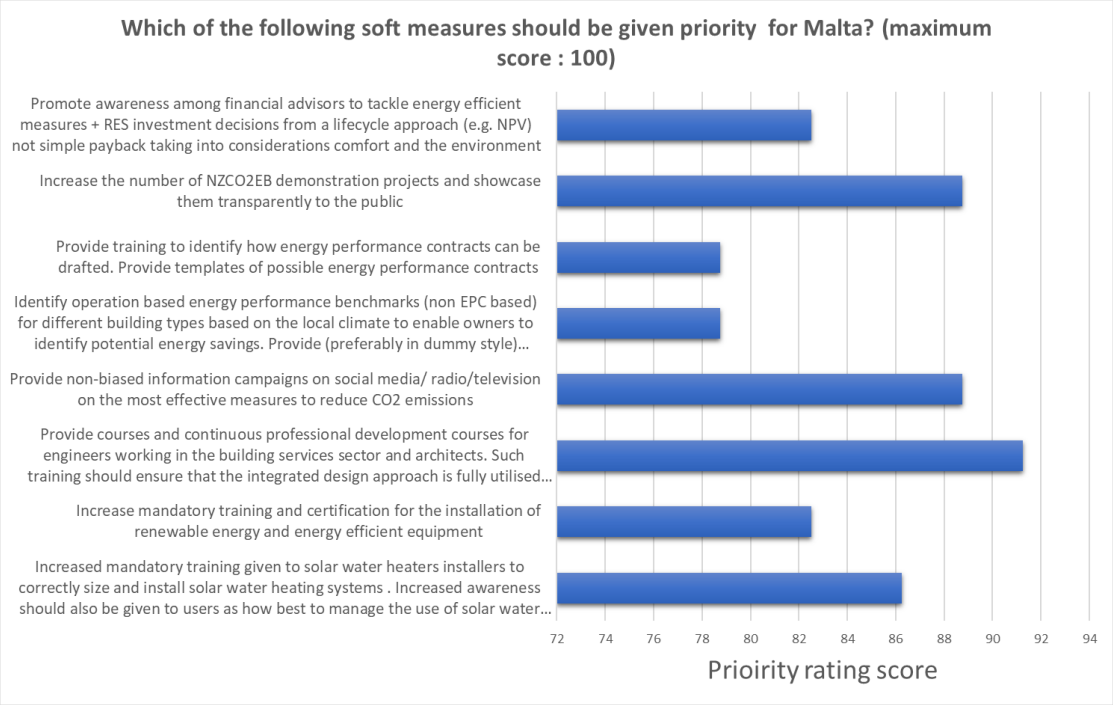

Figure 4: Priority scores for different soft policy measures

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4. Stakeholders' feedback re. regulatory measures to be given priority

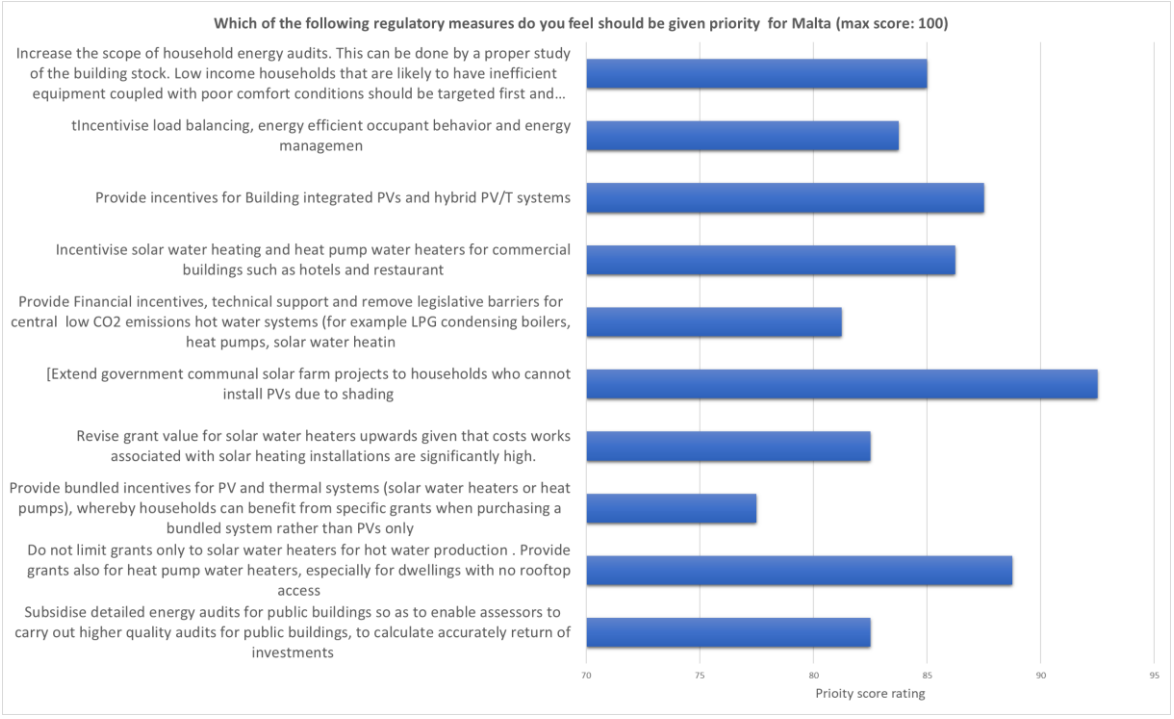

Figure 5: Priority scores for policies that deal with regulator measures to be given priority

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5. Stakeholders' feedback re. technology options to be made mandatory

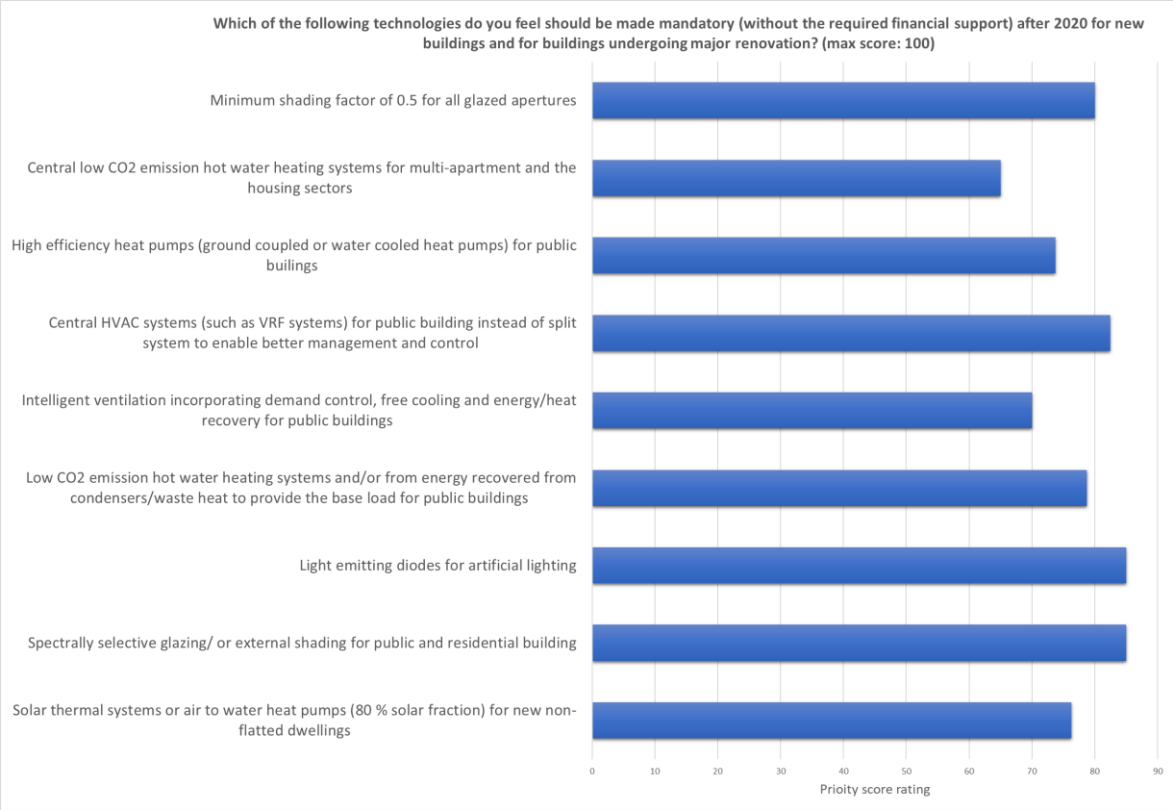

Figure 6: Priority scores for technologies that should be made mandatory

2.4 Semester 4 (October 2017 – March 2018)

Main semester events:

- 15th January 2018: High Level Meeting with Policy Makers in collaboration with The Funds and Programmes Division entitled: "Proposal for Policy Action Plan towards Near ZeroCO2 Buildings"
- 22nd – 23rd February 2018: Interregional Partner Meeting and Study Visit, Lapua, Finland.
- 28th March 2018: Final Regional ZEROCO2 Conference and Press Conference by Hon. Dr. Aaron Farrugia, Parliamentary Secretary for EU Funds and Social Dialogue, University Residence, Lija, Malta
- 21st – 22nd March 2018: Final International Conference, Ptuj, Slovenia

Main Deliverables

- The Market Need Report
- The Policy Action Plan

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Main Lessons Learnt

- The past two years of the project ZeroCO2 served as an eye opener to many aspects of collaborations at regional and interregional levels, and how these collaborations can bring about positive experiences and encourage one to take initiatives
- The path of achieving near zero energy and near zero carbon emissions is possible, as long as there is the good will from the side of experts and policy makers to work together in tandem for the benefit of the region and Europe as a whole.
- The involvement of non-policy makers in Interreg Europe projects gives a new flavour to cooperation between different entities, because it helps to mingle technical know-how with policy, in order to bring out the best of both worlds to push forward the implementation of the EU Directives on energy.
- The use of Memorandum of Understanding Documents between academic and policy maker entities helps to support collaboration and ease the interaction of concerned parties at all levels of the project.
- Monitoring of the implementation of the policy action plan over the next two years brings about new experiences and challenges for the policy maker and the partner in Interreg Europe projects to ensure a minimum level of success for such initiatives.

3 Policy Action Plan proposals

The policy action plan proposals are being divided into two categories. The first category deals with soft measures i.e. measures not requiring ERDF or national funding sources, while the second category concerns policy proposals requiring ERDF/national funding sources.

For both categories, the policy measures are listed in terms of priority, based on feedback received during and after a high-level meeting with policy makers on 15th January 2018. Note: The high-level meeting minutes are provided in Annex 2.

Not all measures listed in both categories will be carried out. However, it is being envisaged, that at least two measures from each category will be implemented within the next two years until March 2020. For the two measures from each category with the highest priority, all important information is provided including:

- the nature of the actions to be implemented;
- the timeframe;
- the players involved;
- the costs (if any) and funding sources (if any).

3.1 Soft measures

The following soft measures that scored high priority and can be implemented between now and 2020 are being suggested:

1. **Provide training and continuous professional development to architects, engineers and project managers on aspects of design, technologies, life cycle costings and energy performance certification of NZCO2EB.**

   a. **The background**

   During the various stakeholder meetings/seminars held throughout the project, a lack of awareness regarding EE/RE/NZEB targets to 2020 was evident even among public authority professional employees. In addition, the integrated design process required to achieve or renovate buildings to NZEB requires expertise which many engineers, architects and project managers' lack.

   Market needs satisfied: Increased awareness and improved technical expertise, reduced barriers and uncertainties, when undertaking energy performance contracting.

   b. **Action**

   A new study-unit to train professionals and project managers on Net Zero Energy building strategies will be designed by the University of Malta. The study-unit will also be offered by the University of Malta. Training will deal with various aspects including EPCs, envelope, systems, comfort, case studies and integrated building design and tools.

   c. **Players involved**

   The University of Malta Institute for Sustainable Energy will design and implement the study unit, in collaboration with a number of professionals from within and outside the University.

   d. **Timeframe**

   Foreseen implementation: Academic Year 2018/2019

   e. **Costs**

   Training will be offered to all eligible entities i.e. professionals (architects and engineers) and project managers against a nominal fee.

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2. **<u>Introduce a mandatory minimum renewable energy share in new and existing public buildings to be renovated</u>**

   a. **The background**

   During the various stakeholder meetings / seminars held throughout the project and the feedback received from questionnaires, various stakeholders saw the need that a minimum share of energy from renewables should be introduced for new and public buildings to be renovated, in order to allow ambitious targets for NZCO2EB to be achieved.

   Market needs satisfied: Measures achieving deep renovation / low CO_2 emissions, through the introduction of minimum renewable energy share for new constructions and for buildings undergoing major renovation.

   b. **Action**

   The Building Regulation Office is currently undertaking a number of cost optimal studies for non-residential buildings (dwellings, offices, hotels, restaurants, shops, schools, sports complexes and residential homes for the elderly) for the EPBD recast cost-optimal methodology. The mandatory share of renewable energy for a building category/ies will be determined based on the results of these studies. Minimum renewable energy compliance will be determined based on the Energy Performance Certification.

   c. **Players involved**

   The Building Regulation Office may consider updating the minimum energy requirements of Technical Document F [11][12], to introduce this minimum share of renewable energy for specific public building category/ies based on the results of the cost-optimal studies.

   d. **Timeframe**

   Foreseen implementation: 2019-2020

   e. **Costs**

   Not applicable

3. Provide a guide on best-practice methods to renovate public buildings according to their specific sector, such as schools, offices, health centres and housing blocks to facilitate their transition to NZCO2EB status.

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4. Provide non-biased information campaigns using social media on the most effective measures including energy management practices that can be applied for buildings in Malta to reduce CO_2 emissions. The campaign should also focus on the role of energy performance certification so as to improve the public perception on the certification and enhance their utilisation.

5. Provide a one-stop shop for all financial incentive measures and to provide technical advice to the general public who would like to achieve NZCO2EB.

6. Improve the public perception of energy performance certifications by encouraging banks to calculate maximum loan limits for potential property buyers based on the energy performance rating of the property.

7. Provide indicators for energy performance levels for different building categories, based on statistical analysis of actual registered EPCs, to enable one to compare between the EPC of a property and the prevailing benchmark.

3.2 Measures that require ERDF or national funds

The following policy proposals have been identified as priority measures for achieving NZCO2EB but they require allocation of ERDF or national funds to be implemented between now and 2020:

1. **Revise solar water heating grant to regenerate interest in solar water heating**

   a. **The background**

   A PESTEL analysis [5], [6] for photovoltaics, domestic solar water heating and energy efficiency schemes (insulation/ double glazing) has been carried out in detail. One of the findings from this PESTEL analysis following stakeholders' feedback shows that investment in new solar heating systems has seen a constant decline over the past few years, as PVs are being perceived to be more financially attractive [13]–[15].The domestic solar water heating grant, which has remained the same throughout the years should be reviewed in the light of current costs, in order to regenerate interest in solar water heating. Moreover, the preparatory mechanical works for installing a solar heater are costlier than those for photovoltaics and require financial support, if the solar thermal technology is to become cost effective. Given its storage capability, solar water heating is currently the only viable renewable energy source that provides an effective way to reduce peak loads at the power station. This proposed measure was also inspired from the region of Crete. In this region, that has a similar climate as Malta, there is a much higher penetration of this technology and there is a legal requirement for new buildings to install solar water heaters.

Market needs satisfied: Upgrade of unsuccessful schemes and target schemes towards most effective measures.

b. Action

The current financial support scheme is too low to encourage the installation of solar water heaters. A higher financial support scheme would be instrumental in releasing this impasse. The current support scheme provides a grant of 40% up to €400 and only considers the capital cost of the solar heater as an eligible cost. A study carried out by the Institute for Sustainable Energy [16] showed that in 2010, the cost of installation costs of thermo-siphon systems may account to between 21 to 62% of the total cost. If one had to consider the capital cost of a thermosiphon system to be € 1,600 excl. VAT (market prices as of 2017), the total installations costs to be 21 % of the total cost (most favourable scenario), then the total capital required would amount to € 2,284 incl. VAT. If the system offsets circa 2,200 kWh_e/year [16] at a cost of electricity of € 0.1298/kWh, and if one considers an annual maintenance cost of €60, the best possible simple payback would result to be 10.15 years. This payback period is more than double the manufacturer's warranty of 5 years offered by most systems and also exceeds the expected 10 years lifetime of such systems.

In order to re-generate interest, the proposed incentive should not exceed the 5-year manufacturer's warranty, and the minimum grant should cover 50% of capital and installation costs up to €1,000. Such a grant would put SWH at par with the grant given to PV and would sustain the market of solar heating.

c. Players involved

The Energy and Water Agency will provide the right policy direction so that the current scheme is updated. The Regulator for Energy and Water Services (REWS) will administer and regulate the scheme.

d. Timeframe

Foreseen implementation: 2018/2019

e. Costs

All costs associated with this measure will be nationally funded, as is the current solar water heating grant. It is unfortunate that the EU does not allow ERDF to be used for subsidising solar heating. The impression at EU level is that solar heaters are cost effective and do not require ERDF subsidies. In reality, this is definitely not the case in an island scenario, where solar heaters are imported and the market is small. However, new hopes may be rekindled, when the European Parliament votes for the revised renewable energy directive in February 2018 [17]. One of the most interesting proposals is to increase the share of solar thermal energy by 1% every year.

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2. Pilot project to renovate a public housing sector block to reduce its CO_2 emissions by 30 % or more by end of 2020.

a. The background

This project was inspired from policies related to the energy efficiency renovation of the housing sector as identified in the regional policies report of Slovenia, Finland, and France and as described in the Regional Policies and Best Practices common study [9]. In Malta, there are currently no schemes specifically targeting energy renovation of the housing sector. This sector is unlikely to have the necessary capital to invest in technologies to reduce CO_2 emissions. Such renovation shall also enable such housing communities to improve their thermal comfort and actively participate in increasing the number of high efficiency buildings in the country, thus leading by example.

Market needs satisfied: Schemes targeted towards the housing sector, public building / housing sector with no or shaded rooftops can achieve low operational CO_2 levels

b. Action

An energy inefficient housing sector block can be identified. Measures required for energy renovation will be identified. Application to ERDF funds will be made to implement the measures. All public procurement regulations will be respected. The pilot project aims to identify any barriers in renovating such housing stocks and provide a prototype of how the housing sector is to be renovated. Any schemes for the housing sector promoting energy efficiency can be based on the most effective and practical measures learnt from this project.

c. Players involved

The Housing Authority can apply for ERDF funds and manage the project.

d. Timeframe

Foreseen implementation: 2018 -2020

e. Costs

ERDF 2014-2020 funding is required with an estimated project cost of 1.5 to € 2 million Euro.

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3. Provide fiscal incentives or tax rebates for contractors who opt to build new buildings of high efficiency rating beyond the minimum energy requirements of Technical Document F.

4. Devise projects to improve the energy performance rating of public authority buildings, such as Ministries, public offices, health centres and public schools and sports complexes.

5. Provide grants to install solar water heaters and/or heat pumps for domestic hot water for the hospitality sector (hotels/ restaurants), residential people homes and sports complexes.

6. Provide bundled incentives combining two technological options such as PVs/SWH, PVs/Heat pump for existing buildings and incentives that combine envelope improvement with RES such as roof insulation/PVs or roof insulation/SWH or roof insulation and shading/heat pump for existing buildings to be renovated.

7. Provide incentives for solar shading and/or spectrally selective coatings and films for the commercial building sector.

8. Extend government/private communal solar farm projects to households who despite having a roof cannot install PVs due to solar shading. Another possibility can be to extend communal farms to commercial buildings (such as many restaurants) that do not own a roof top.

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NOTE ON THE ROLE OF GOVERNMENT POLICY ADVISORS IN THE ACTION PLAN

Since the beginning of the project in April 2016, a Memorandum of Understanding (MoU) was signed between the University of Malta and the two main stakeholders, namely, the Building Regulation Office and the Energy and Water Agency. The two entities are the official government advisors with regards to the Energy Performance of Buildings Directive and the Energy Efficiency and Renewable Energy Directives, respectively. It is worth noting that the letter of support for the participation of the University of Malta in the project was actually provided by the Energy and Water Agency.

The MoU served to:

1. Provide a high level of trust between all parties;
2. Empower pubic officers to contribute to the project ZeroCO2, with confidence and a spirit of collaboration;
3. Enable the participation of the stakeholders in all aspects of the project, including but not limited to participation in meetings and conferences, visits abroad and review of important documents and publications, to ensure that they accurately reflect the opinions and mandate of the policy advisors.
4. Create a win-win situation where all entities can get the support of other entities signatories of the MoU.
5. Enhance synergies between the different stakeholders.

The draft Policy Action plan was presented to all stakeholders, including the above main participants, in a high-level meeting on 15th January 2018. The feedback was amalgamated, and a final version of the action plan was then discussed with other project partners during the interregional meeting in Lapua, Finland 22-23 February 2018.

The final action plan was also officially sent to the Minister for Transport Infrastructure and Capital Projects and the Minister for Energy and Water Management, under which the above two main stakeholders affiliate. The feedback was positive and there was interest in the proposed policy measures.

Within a few weeks, some of these measures have already been implemented and this will be reported in the next project report on monitoring the action plan.

While endorsement of the action plan was not officially made by the Ministries, given that it was not considered as mandatory for the participation of the University of Malta in the project, the fact that its proposals are already being implemented at stages augur very well for the successful implementation of the proposed action plan in the coming two years until the end of the project in March 2020.

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4 References for the Policy Action Plan

[1] Damien Gatt and Charles Yousif, "ZeroCO2 Building - How low can we go: A Case Study of a Small Hotel in Gozo - Malta," 2016. [Online]. Available: https://www.youtube.com/watch?v=GtV-QUtoVxc&t=362s. [Accessed: 08-Feb-2018].

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Annex 1: Market need report

Malta Market Need Report

Project title: "Promotion of near Zero CO_2 emission buildings due to energy use"

Project partner 9: University of Malta

Ing. Damien Gatt & Dr. Charles Yousif

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1. Introduction

The Interreg Europe project entitled ‘‘Promotion of Near Zero CO2 Emission Buildings Due to Energy Use‘‘ (ZeroCO2) falls under Interreg Europe priority axis 3: ‘Low-carbon economy’ and spans over two stages between April 2016 and March 2020. The overall objective is to address policies, support actions and investments to increase the levels of energy efficiency in public buildings and the housing sector, as well as to raise the share of energy from renewable sources in the overall energy mix.

The Interreg Europe ZEROCO2 project within this priority axis specifically aims to:

- Define near zero CO2 emission buildings due to energy use (NZCO2EB) and present the various benefits which result from this type of building;
- Analyse the combination of different technologies and energy efficiency measures, which can be used in order to achieve the abovementioned target;
- Identify state of the art policies, which will aim at promoting NZCO2EB at the local, regional and national level;
- Present various financial tools in order to promote these types of buildings.
- Monitor the implementation of the policy action plan over two years.

The project's focus is on new and existing public buildings to be renovated, including the housing sector. By Public Buildings, one understands all buildings that are frequently visited by the general public.

In order to satisfy these objectives, like other Interreg Europe projects, the ZEROCO2 project follows an interregional approach, which links different policy makers and stakeholders to understand common challenges and share good policy practices among the project partner regions.

This work details the outcome of the **Market Needs Report** and analyses the current funding opportunities in Malta available for public buildings (including the housing sector), to finance renewable energy and energy efficiency measures enabling them to reduce their CO_2 emissions. The report complements the **Action Plan Report** for the Interreg Europe ZeroCO2 project [1] and identifies the market needs to facilitate the transition of new and public buildings to be renovated to reach NZCO2EB.

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2. Current Funding Opportunities

What are the funding opportunities, what kind of grants are available, which measures of energy efficiency and use of renewable energy sources are funded, what is the model of funding (public private partnership, subsidies, tax reliefs, etc), what is the availability of funds, what is the process to get funds, for whom it is intended, etc.?

The main funding sources for supporting national schemes that promote renewable energy and energy efficiency are:

1) National funds
2) ERDF (2014- 2020) funds

The following are the existing public schemes promoting energy efficiency and renewable energy sources in Malta:

1. **Promotion of renewable energy sources (solar photovoltaics)** – applicable to both residential (including the housing sector) and public buildings.

- **Two options for financial support exist:**

❑ Option 1: Feed-in tariffs (FIT) for 20 years with no capital grant

❑ Option 2: Feed-in tariffs for the first 6 years plus a 50% grant on capital cost up to a maximum of 2,000 Euro (residential sector only). The remaining 14 years will require that the PV generated electricity is sold at the spill-off electricity tariff rate (cost price of electricity), which could change from year to year.

Funds foreseen for the period up to 2020 include:

- Funds assigned from the Operational Programme 2014-2020;
- An estimated maximum of €140 million (over 20-year lifetime of systems) under the scheme notified to and approved by the Commission for systems larger than 1 MWp;
- An estimated maximum of €6 million per annum (active as from 2015, over 20-year lifetime of systems) for feed-in tariff for systems smaller than 1 MWp;
- An estimated €33 million in feed-in tariff scheme for systems in the residential sector (granted for a period of 6 years from installation of system).

Funds used so far

Part 1: Capital grant schemes for residential buildings issued by the Malta Resources Authority (MRA), which was then moved to the Regulator for Energy and Water Services (REWS). Between 2010 and 2015, a total of 39.1 million Euro was paid from ERDF. This figure only concerns PV systems installed in the residential sector that have benefitted from a grant administered by the REWS [2][3]

Part 2: ERDF 2007-2013 capital grant schemes for non-residential sector issued by the Malta Enterprise – Between 2009 and 2013, a total of 11,405,188 Euro were given as grants to industry and commercial entities for investing in energy efficiency and renewables [4].

Part 3: ERDF 2007-2013. By end of 2012, capital grants issued by the Planning and Priorities Coordination Division (PPCD) for various EU funded projects (under both OP 2007-2013 and 2014-2020) – PA4 Climate Change and Resource Efficiency amounting to 2,807,183 Euro [5].

Part 4: Feed-in tariff expenditure for PV: 2010: 0, 2011: 0, 2012: 623,421 Euro, 2013: 5,000,000 Euro, 2014: 5,000,000 Euro, 2015: 7,000,000 Euro [6].
The scheme (currently open) requires applicants to have unshaded rooftop space available to install PVs.

A scheme was also available for residential households with no access to rooftops to benefit from PVs via **a communal solar PV farm scheme (1 MWp**) built on top of a large water reservoir. The scheme was a first-come first-served basis and has been fully subscribed. Households had the opportunity to invest up to a maximum of 3 kW_p. The communal PV farm at Fiddien, Rabat was meant to act as a pilot project to demonstrate market demand for such a product, whilst fulfilling one of the electoral manifesto proposals – the idea being for the Government of Malta to spearhead the initiative, so that the private sector would then follow suit. In this regard and for the time being, it is not the intention of the Government to engage in constructing another solar farms, because this can be fulfilled by the private sector. The government is therefore encouraging the private sector to follow its example and offer similar opportunities to households and enterprises.

2. **Grant scheme for domestic solar water heating** – applicable only to residential buildings. The current national scheme provides a grant of 40% on capital cost of solar heating system up to a maximum of 400 Euro and this is not restricted by any social criteria. It is primarily financed by national funds.

   Foreseen funds: Approximately 0.25 million Euro per annum
   Funds used so far: Approximately 3.5 million Euro (end 2015) from national funds

3. **Promoting financial instruments for energy efficiency**- applicable only to residential dwellings. The scheme is funded through national funds and applies to roof thermal insulation material and double-glazed windows or doors. Eligible expenditure for roof insulation is capped at €60 / m^2 of insulation material and €150 / m^2 for the double-glazed material excluding the frame.

   Foreseen funds: Approximately 50,000 Euro per annum
   Funds used so far: Approximately 350,000 Euro (end 2015)

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4. **Heat pump water heater scheme:** applicable only to residential dwellings. The National Scheme provides a grant on capital of 40% up to a maximum of 400 Euro.

   Foreseen funds: Budget allocated for 2018 is 450,000 Euro
   Funds used so far: scheme started in October 2017 and no data is available as yet.

5. **Investment aid for high-efficiency cogeneration:** Issued by Malta Enterprise in 2016 for the purpose of incentivising high-efficiency cogeneration that shall fulfil the following criteria [7]:

   a. Production from cogeneration units shall provide a calculated primary energy savings rate of at least 10% compared with the references for separate production of heat and electricity.
   b. Production from small-scale and micro-cogeneration units providing primary energy savings may qualify as high-efficiency cogeneration.

   For new equipment, the eligible cost shall be the extra investment costs for the equipment needed for the installation to operate as high-energy efficiency cogeneration equipment, when compared to conventional electricity or heating installations of the same capacity.
   Or
   For upgrades, the extra investment cost to upgrade the equipment to a higher efficiency when an existing installation already meets the high-efficiency threshold.

   The costs not directly linked to the achievement of a higher level of energy efficiency shall not be eligible.

   A minimum investment of €15,000 is required. **The aid shall be granted in a form of a tax credit**. The capping will not exceed the following percentages of the eligible costs: Small system (65 %), medium system (55 %) and large system (45%). The scheme has a budget of 5 million Euro. The scheme will run until March 2019

   Funds used so far: None

6. **MHRA BEST scheme for hotels (to be launched in 2018)**

- The Malta Hotels and Restaurants Association (MHRA) has launched the Benchmarking Energy Sustainability Targets (BEST) Scheme [8], compliant with state aid rules, which includes a benchmarking and ranking system that awards points to participating hotels according to:
  I. Their Energy Efficiency Key Performance Indicators (KPIs)
  II. Energy Efficiency Projects undertaken during the previous year

Hotels that rank above an established threshold within their category shall be awarded a credit, which can be used to finance eligible future energy efficiency related projects. A cap of €30,000 will be applicable per property per calendar year. The fund for each hotel can be used to cover between 30 % and 50 % of the cost of any approved energy efficiency project depending on the category of the hotel size, as defined by the EU parameters for Small, Medium and Large enterprises.

Foreseen funds for the MHRA BEST scheme: Budget allocated for 2018 is € 800,000

- The Malta Enterprise had issued a scheme for the hospitality sector between 2011 and 2016. It focused on energy efficiency measures for the hospitality sector [9]. Licensed hotels, guesthouses, hostels, farmhouses, snack bars and restaurants could all benefit from a loan financed by Malta Enterprise. Loans approved under this incentive may not exceed €400,000 or 80% of the total investment, as approved by the Enterprise. The loan has to be repaid within 5 years at an advantageous interest rate of 1.5% over the discount rate charged by local commercial banks. Unfortunately, no assistance has been awarded under this support measure for the duration of the incentive. The reason may be due to the long payback period of various retrofitting measures, given Malta's mild climate and low electricity tariffs. Also, when loans are applied to finance investments, payback periods further increase due to interest rates.

7. **Energy Audit Voucher Scheme (January – June 2017)**

The Energy Audit Voucher Scheme [9] launched by the Malta Enterprise allows undertakings that have their annual energy consumption between 10,000 and 75,000 kWh, to engage an Energy Auditor to carry out a high-level energy review of their activity.

Through the energy audit, the business would identify actions and investments that may be carried out to reduce energy consumption. The scheme was not fully subscribed as only two beneficiaries have received support under this Scheme for the period indicated. The total amount awarded was of € 500.

The low uptake may be due to lack of awareness about the scheme and about the benefits of undertaking energy audits. More promotion on such schemes is required to increase public awareness.

8. **ERDF Energy Grant Scheme (Closed Measure)**

The ERDF Energy Grant Scheme [9] supports enterprises to invest in energy saving measures and alternative energy sources.

Projects benefiting from this incentive should be completed within 18 months of the issue of the Letter of Approval from Malta Enterprise. For an application to be considered for co-funding, the minimum project value (based on eligible expenses) must be at least 25,000 Euro and must not exceed 200,000 Euro. The resultant minimum grant value per project is 12,500 Euro.

Energy Saving Measures
Investments for the implementation of energy saving solutions and lighting, such as the installation of intelligent lighting systems, solar heating, thermal insulation, building management systems and energy-saving lighting are all eligible.

Alternative Energy Sources
Investments in renewable energy solutions, such as the installation of energy generating solutions based on the use of solar power and wind power are also eligible.

ERDF Energy Grant Scheme – [Programming Period 2007-2013]

No. of entities applying for the scheme

Call No.	Call 1	Call 2	Call 3
Applications	90	107	246

Number of Beneficiaries that were awarded with a Grant Agreement]

Call No.	Call 1	Call 2	Call 3
Grant Agreements Awarded	44	59	90

Total amount awarded as per Grant Agreements indicated above: 14.9 million Euro

The most common energy saving and alternative energy measures financed from the ERDF grant schemes

ERDF Energy Grant Scheme:
Alternative Energy -PV Systems
Energy Saving Measures – Power Factor Correction, Rooftop Insulation and Solar Water Heaters

Estimated site energy or CO2 emissions savings from the ERDF grant schemes
ERDF Energy Grant Scheme: 22,420.945 MWh/annum achieved

9. Funding for renewable energy and energy efficiency investment projects:

Ministries, Government Departments, Central Government Authorities and the Public Sector Companies are eligible to apply for ERDF funds (under Priority Axis 4) '*Shifting towards a low-carbon economy*' for investment projects related to renewable energy and energy efficiency. Currently the public buildings listed in section 4.0 are benefitting from these funds to reduce their CO_2 emissions.

10. **(Private) funding opportunities for renewable energy and energy efficiency:**

- **Green loans:** The main banks in Malta (including HSBC [10], APS [11], BOV [12], [13] and BNF [14]) all offer green loans to households and/or businesses at competitive / preferential interest rates for energy efficiency and renewable energy technologies.
  One of the popular schemes is the Personal Loans scheme to assist individual households investing in photovoltaic systems. Since inception of the Government Grant Schemes to individual households over the past couple of years, the Bank of Valletta (BOV) has assisted over 2,500 households with total loan of circa 20 million Euro.

  However, the BOV "Joint Assistance Initiative for Maltese Enterprises (JAIME)" scheme that can be used to finance energy efficiency and renewable energy measures for Small and Medium Sized Enterprises (SME) has not been as popular, due to clients having to choose between either government incentives or the BOV JAIME financing package due to EU funding / state aid rules.

The Malta Developers Association (MDA) has also launched a loan scheme for renewable energy technologies [15].

- **Energy performance contracting (EPC):** Energy Performance Contracting is identified at EU level as a key instrument to finance and implement ambitious energy efficiency investments. However, its roll out faces numerous barriers including a lack of understanding and information, distrust in suppliers, high transaction costs, inadequate accounting and procurement rules, different procedures in each country and problems accessing financing. A consultative exercise regarding EPCs has been carried out by the Energy and Water Agency and can be found in [16]. The EPC model uptake in Malta seems to have limited potential and is still at its very early stages.

3. Policy Background

Based on which strategy, policy the funds are granted (e.g. based on a long-term strategy for investment in the energy renovation of buildings)? What are expected results for region (e.g.: total renovation of xxx m^2 floor area in public buildings, annual renovation of public buildings, etc.)?

The policy background is focused at enabling Malta to reach the EU 2020 targets related to renewable energy (10 % target) and energy efficiency (27 % of primary energy consumption) as set out in the National Renewable Energy Action Plan [17] and the National Energy Efficiency Action Plan [18], respectively. Policies are also directed to ensure Malta compliance with the EPBD recast [19] requirements both in terms of the cost-optimal and NZEB energy performance requirements [20] for new buildings and for buildings undergoing major renovation, as well as to achieve the 3 % annual renovation rate for public authority buildings.

Malta is also committed to a reduction in its GHG emissions by up to 5% on 2005 levels by 2020 as detailed in Malta's low carbon development strategy [21].

4. Current Local and Regional Investment Projects

List three ongoing investments in the field of energy efficiency and renewable sources in public sector and the measures, type of funding and model of funding.

The following are energy efficiency and renewable energy projects currently being co-financed under ERDF 2014-2020:

1) ERDF.04.0070 - The upgrading and energy retrofitting of the Administration Centre, Victoria Gozo with a total investment of 1,323,750 Euro.

   Carbon dioxide emission reduction measures have been taken into consideration by:

   I. Replacing the current split-type air conditioning systems with a centralised more efficient VRF systems;

   II. Introducing a mechanical ventilation system with heat recovery to provide fresh air into office spaces;
   III. Introducing a monobloc heat pump for hot water production;
   IV. Replacing the current lighting system with LED luminaries;
   V. Installing a building management system (BMS) to help manage, control and monitor the building's technical services (HVAC and lighting) and the energy consumption of devices used by the building;
   VI. Insulating the rooftop of the Ministry for Gozo using polyurethane spray on foam. This was topped up by a roof screed layer with appropriate gradient in order to collect maximum rainwater surface run off, for re-use;
   VII. Replacing the current single glazed apertures with double glazed apertures filled with argon and complete with an aluminium frame, a 4-mm thermal break and a UV reflective film.

   The Ministry for Gozo already also has a PV system comprising of 108.01 kW_p installed on its rooftops.

2) ERDF.04.0069 - Investing in an energy efficient system for St. Vincent de Paul Residence (a respite home). The project seeks to invest in an energy efficient lighting system together with heating, ventilation and air-conditioning (HVAC) systems that will reduce the carbon footprint and minimise energy demand for the residence.
   Total investment: 2,057,921.18 Euro

3) ERDF.04.0067 – Malta Information Technology Agency (MITA) Data Centre: Photovoltaic Grid-Connected System.
Total investment: 12,749.22 Euro

5. Policy / Funding Compatibility

What condition have to be fulfilled to get funding? Are there any difficulties to fulfil this condition (e.g. time consuming; first come, first served basis, etc.)?

Each of the public schemes highlighted in Section 2 require different conditions and submittal of different application forms to be fulfilled. Application forms and conditions for the PV, domestic solar water heating, domestic hot water heat pumps and insulation/double glazing can be found and are detailed in the REWS website[22]. Planning Authority regulations also have to be fulfilled for solar installations as detailed in [23]. The conditions for the Investment Aid for High-Efficiency Cogeneration are found in the Malta Enterprise website [7], while the conditions for the BEST scheme conditions for hotels are detailed in [8]. The applications are generally time consuming to fill up and can involve various entities. A one-stop shop for all schemes is currently non-existent for energy schemes. However, the idea of a one-stop shop is not new to Malta, as it has been applied for other sectors such as Government Services to the general public (Servizz.gov.mt). Funding for energy schemes is generally on a first-come first-served basis until the set quota is reached.

Application of ERDF funding is a long and time-consuming process both at application and execution stage. All awards of ERDF must comply with European Union competition law (including State Aid Law and Government procurement in the European Union). Failure to follow these legal requirements may result in irregularity rulings, which carry financial implications.

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6. Market Need

Questions to be answered: Should new funds be created, should tax incentives be created to stimulate investment in ZEROCO2 buildings, how much support is available (funds, support from policy maker to implement ZEROC2 building in to the policy). Could the ZEROCO2 concept be implemented in all kind of buildings? Should there be only focus on public buildings, and if yes, which types (social housing, hospitals, schools, sports facilities or local government offices)? Is it possible to finance ZEROCO2 buildings with private money, public-private partnership or trough crowdfunding?
Could ZEROCO2 buildings help to reach regions target (reduction of CO2, etc)? And in what scale?

The above sections have detailed the current funding opportunities available for public buildings (including the housing sector) to invest in energy efficiency and renewable energy and facilitate their transition to NZCO2EB.

As depicted from Section 2, national scheme measures are available for both the housing sector and public buildings. It can be seen, that there is a good mix of incentive mechanisms that vary from grants, to feed-in tariffs and tax incentives. Following discussion with various stakeholders throughout the project and based on lessons learnt from project partners, the following main proposals have been identified to facilitate the market's transition of public buildings to NZCO2EB in Malta.

A. One-stop shop

One of the most important requirement to make the funding process for national schemes more efficient is to ease the administrative barriers of such funding via a one-stop shop. A one-stop shop can simplify the process of making interested entities more aware of the different funding mechanisms available for renewable energy and energy efficiency. A website detailing all funding opportunities is currently non-existent. The application process also involves dealing with various entities. A one-stop shop should enable the applicant to deal with only one entity throughout the application process thus reducing bureaucracy and administrative burdens.

B. Improving the photovoltaic, domestic solar water heating and energy efficiency (insulation/ double glazing) schemes

A PESTEL analysis for the photovoltaics, domestic solar water heating and energy efficiency schemes (insulation/ double glazing) has already been carried out in detail in [24]. The main findings from this PESTEL analysis following stakeholders' feedback showed that:

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I. Statistics show that investment in new solar heating systems has seen a constant decline over the past few years as PVs are being seen to be more financially attractive. The domestic solar water heating grant, which has remained the same throughout the years and never considered the added costs of physically connecting the solar heating system to the hot water setup, has to be revised upwards so as to regenerate interest in solar water heating. Solar water heating, given its storage capability, is currently the only viable RE source that provides an effective way to reduce peak electricity loads at the power station (About 90% of households still use electric boilers for water heating);

II. Heat pumps provide a good alternative to solar water heaters in public buildings and the housing sector, where the rooftop may not be sufficiently large to cover a high percentage of electricity demand using solar PV panels or is already occupied by other services;

III. A heat pump water heater grant for residential dwellings has been introduced for the first time in October 2017. Grants should however be extended to install solar water heaters and / or hot water heat pumps for the hospitality sector (hotels / restaurants), residential people homes and sports complexes, where hot water consumption is much higher. Despite the fact that these technologies always feature in cost optimal studies for new and renovated buildings, they are not yet cost effective and would require strong incentives;

IV. Fenestration enhancement should not focus on double glazing alone. Various studies [25] [26] have shown that double glazing should not be high on the priority list for energy savings given Malta's mild climate. Incentives should focus on solar shading and / or spectrally selective coatings and films for the commercial building sector. Although such technologies result to be cost optimal in most cases they are generally not yet cost-effective;

V. Bundled incentives combining two technological options such as PVs / SWH, PVs / Heat pump for existing buildings and incentives that combine envelope improvement with RES such as roof insulation / PVs or roof insulation / SWH or roof insulation and shading/heat pump for existing buildings to be renovated should be considered to further reduce CO_2 emissions.

VI. Government communal solar farm projects can be extended to households who despite having a roof cannot install PVs due to shading from adjacent obstacles or buildings. Another possibility can be to extend communal PV farm schemes, to allow commercial entities (such as many restaurants) that do not own a roof top, to participate in them.

C. The housing sector

From the schemes shown in Section 2, there are currently no open schemes for the housing sector. Such sector is unlikely to have the necessary capital to invest in technologies that reduce CO_2 emissions. One suitable policy would be to renovate 5 % of the public housing sector to reduce their CO2 emissions by 30 % or more by end of 2020. Such deep renovation shall also enable the housing communities to improve their thermal comfort.

D. (Private) funding opportunities for renewable energy and energy efficiency

Provision of green loans by private banks and the Malta Enterprise is a suitable measure for public buildings that do not have the initial capital to invest in energy efficiency and renewable energy. However, such loans may not be so popular with beneficiaries, due to the increase in payback period caused by the added repayment of interest. Furthermore, many energy efficient measures do not have favourable short payback periods given Malta's mild climate and cheap electricity tariffs. An alternative measure to encourage one to invest in energy efficiency and renewable energy and which will in addition improve the public perception of energy performance certifications would be to encourage banks to calculate maximum loan limits for potential property buyers based on the energy performance rating of the property.

Energy Performance Contracting is identified at EU level as a key instrument to finance and implement ambitious energy efficiency investments. In order to reduce the barriers and uncertainty factors for such financing models and to make such models more popular in Malta, the following actions may be considered:

- Government should take the lead and implement such a model to perform energy renovation on existing public authority buildings. All calculations, lessons learnt and energy savings should be made transparent.
- Provide training and standard template/s for energy performance contracts.
- Provide a guide on best-practice methods to renovate public buildings according to that specific sector, such as schools, offices, health centres and housing projects to facilitate their transition to NZCO2EB status. The guide should quantify typical savings from various measures and aim to quantify any uncertainty factors.
- Provide training and continuous professional development to architects, engineers and project managers on aspects of design, technologies, life cycle costings and energy performance certification to facilitate the transition to NZCO2EB.

E. MHRA BEST scheme

The scheme is a very good initiative by the MHRA to motivate hoteliers to invest in renewable energy and energy efficiency and can be extended to other sectors. The system of awarding points and eventually, funding to hotels who already have the best energy performance makes good sense from an economic point of view. Once the low hanging fruit i.e. measures that can be easily accomplished are carried out, it becomes more technically and economically challenging to further improve the energy performance. However, it should also be made sure that the low hanging fruit is not missed by other public building owners, who lack motivation in carrying out energy saving measures.

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Awareness on social media of the importance for energy saving can be carried out by providing non-biased information campaigns on the most effective measures, including energy management practices. The campaign should also focus on the role of energy performance certification so as to improve the public perception on the building's energy performance certificate and enhance its utilisation.

F. Use of ERDF funds for public authority buildings

Public authority buildings should have a high energy performance and serve an example and aspiration to the general public and as a model for other buildings. This means that projects should be devised to improve the energy performance rating of public authority buildings, such as Ministries, public offices, health centres, public schools and sports complexes from ERDF funds.

Priority to such ERDF funds should not be given to low hanging fruit but for technologies and measures that carry a degree of uncertainty and have yet to be proven and studied in our local climate. Such projects should serve as a learning curve for contractors and installers and to reduce the costs and uncertainties for such measures and technologies, that can reduce CO_2 emissions and make energy performance contracting more successful.

G. The role of NZCO2EB

The Maltese islands are currently undergoing a construction boom, which means that putting in the right policy framework to enable the transition to reach NZCO2EB has never been more urgent, so as to reduce CO2 emissions due to operational energy use from the building stock. It is also now the right time to consider introducing a mandatory minimum renewable energy share in new constructions and buildings that will undergo major renovation.

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7. Conclusions

Based on section 6, the market needs to enable the transition of public buildings to NZCO2EB can be summarised as follows:

1. Reduced bureaucracy through one-stop shop;
2. Targeted support schemes towards specific sectors;
3. Upgrade of unsuccessful grants and schemes and target them towards most effective energy efficiency measures;
4. Increased public acceptance and good use of Energy Performance Certificates and their accompanying recommendation reports;
5. Provide incentives, tax rebates or schemes to allow public building / housing sector with no or shaded rooftops to achieve low operational CO2 levels;
6. Reduced barriers and uncertainties when undertaking Energy Performance Contracting;
7. Provide support schemes targeted towards the public housing sector;
8. Public authority buildings to serve as exemplary buildings;
9. Introduce minimum mandatory renewable energy share for new constructions and for buildings undergoing deep renovation;
10. Promote measures achieving deep energy renovation / low CO_2 emissions as opposed to shallow renovation;
11. Increased awareness & improved technical expertise.

The measures to satisfy these market needs identified in section 6 are divided into soft measures and measures that require ERDF / national funding in the action plan. As of January 2018, 55 % of the current funding under ERDF 2014-2020 Priority Axis 4 (amounting to € 25,370,934.05) has not yet been allocated. This gives the opportunity to allocate a portion of these unallocated funds to the ZEROCO2 action plan, so as to aid the transition of public buildings to reach NZCO2EB.

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Annex 2: Presentation and meeting minutes of the NZCO2 high level meeting

ZEROCO2: PROMOTION OF NEAR ZERO CO2 EMISSION BUILDINGS DUE TO ENERGY USE
Fourth Semester (October 2017 – March 2018)

Minutes of the High-Level Meeting with Policy Makers in collaboration with

The Funds and Programmes Division

Proposal for Policy Action Plan towards Near ZeroCO2 Buildings

Institute for Sustainable Energy, Marsaxlokk, Malta

15th January 2018 09:30 – 12:00

Prepared by: Charles Yousif

Preamble:

The fourth semester of the Interreg-Europe project ZeroCO2 represents the culmination of the project and the need for preparation of a policy action plan and a market needs report for Malta. It was deemed necessary that the policy action plan gets as much consensus as possible from policy makers before going public in March 2018. Consequently, it was appropriate to hold this meeting with high level personalities at the level of chief executive officers or their representatives to discuss the draft policy action plan. Also, the coordinator Ms Tea Potocnik has specifically advised in her e-mail of 6th December 2017 to ensure that the policy makers are involved (Appendix A).

Programme

09:30 – 09:35	Introduction of Participants and coffee
09:35 – 09:45	FPD Representative: Interreg-Europe 2014-2020 Programme, *Ms. Caroline Debattista, FPD*
09:45 – 10:00	Overview of the Interreg-Europe Project: ZeroCO2, *Eur. Ing. Dr. Charles Yousif, ISE*
10:00 – 10:30	Draft Proposal for Policy Action Plan towards Near ZeroCO2 Buildings, *Ing. Damien Gatt, ISE*
10:30 – 11:30	Open discussion on the Policy Action Plan Proposal Proposals from participants on the Way Forward Conclusions
11:30 – 12:00	Light mid-day reception

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Attendance Sheet

ZEROCO2: PROMOTION OF NEAR ZERO CO2 EMISSION BUILDINGS DUE TO ENERGY USE

High Level Meeting with Policy Makers

In collaboration with The Funds and Programmes Division

Proposal for Policy Action Plan towards Near ZeroCO2 Buildings

Institute for Sustainable Energy – Marsaxlokk, Malta

15th January 2018, 09:30 – 12:00

NAME	SURNAME	ENTITY	ROLE	PHONE	EMAIL	SIGNATURE
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15th January 2018, 09:30 – 12:00

NAME	SURNAME	ENTITY	ROLE	PHONE	EMAIL	SIGNATURE
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NAME	SURNAME	ENTITY	ROLE	PHONE	E-MAIL	SIGNATURE
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As can be seen, a number of chief executive officers, chairmen, directors and other representatives have attended the meeting. The participating entities covered all the necessary and relevant ministries and government departments, namely:

- Funds and Programmes Division (FPD) – responsible for Interreg-Europe programme
- Planning and Priorities Coordination Division (PPCD) – responsible for ERDF
- Ministry for Education and Employment (MEDE) – responsible for renovation and building of schools
- Planning Authority (PA) – responsible for building permitting
- Malta Industrial Parks (MIP) – responsible of all industrial building zones
- Ministry for the Economy, Investment and Small Business (MEIB) – responsible for schemes for industry and commercial sectors
- Energy and Water Agency (EWA) – responsible of formulating and implementing Government's national policies in the energy and water sectors
- Regulator for Energy and Water Services (REWS) – responsible for managing schemes
- Housing Authority (HA) – responsible of public housing projects and buildings
- Building Regulation Office (BRO) – responsible for the administration of building regulations and building control regulations made in accordance with the Building Regulation Act

Three presentations were made. The first one was delivered by Ms Caroline Debattista, FPD, where she explained the main aims of any Interreg Europe project. She stressed on the importance of the second stage of any project in this programme, whereby the proposed policy action measures are expected to be implemented by the policy maker and will be monitored by the project partner.

The second presentation was delivered by Eur. Ing. Dr. Charles Yousif, where he explained the aims of the Interreg-Europe project ZeroCO2 and the main developments over the past three semesters. He explained why it is important to get feedback from the policy makers in this consultative stage.

The third presentation was delivered by Ing. Damien Gatt, where he presented the market needs report and the policy action plan, in details. The action plan is divided into two sections, namely that of soft measures that require no funding and the fiscal measures that may require dedication of ERDF resources.

Following the three presentations, a discussion ensued on different points with respect to the proposed policy action proposals. A number of interesting points can be summarised as follows:

- PV communal farms was a one-off initiative for government to lead by example. It is envisaged that private entities to follow suit.
- It was emphasised that Energy Performance contracting was difficult to implement in practice due to measures giving insufficient energy savings.
- It was important to be aware of any state-aid funding issues with any measures agreed upon.
- Renovation of 5% of housing blocks is a very interesting idea to pursue. A meeting will be organised between ISE and HA.

- A meeting has been organised with PPCD to provide more specific details on the current funding allocation of ERDF 2014-2020 PA 4, including the way forward for measures that will be agreed on.
- Raising awareness and training is considered as important and should be addressed.

At the end of the meeting, a questionnaire was announced, which will be sent through Google Forms. The feedback will enable ISE to prioritise the proposed policy action measures

Questionnaire

Draft Proposal for Policy Action Plan towards Near ZeroCO2 Buildings - Policy makers' feedback

This questionnaire follows on the high level meeting held with policy makers in collaboration with the Funds and Programmes Division. The meeting was held on 15th January 2018 at the Institute for Sustainable Energy, Marsaxlokk, Malta.

As was discussed during the meeting, the main aim of the ZEROCO2 Interreg Europe project is to identify the best policy measures to achieve Nearly Zero CO2 emissions due to energy use in public buildings (including the housing sector).

The ZeroCO2 project is nearing the end of Phase 1, and the aim of this questionnaire is to identify which of the policy measures discussed during the meeting should be given priority and included in the policy Action Plan for Malta within the ZEROCO2 project. Some of these measures on the action plan are expected to be implemented during phase 2 of the project i.e. the period April 2018 to March 2020.

The questionnaire is divided into the following 3 sections:

Section 1 deals with soft measures – i.e. measures not requiring ERDF funding

Section 2 deals with measures requiring ERDF funds

Section 3 deals with other questions on the proposed measures discussed during the meeting

Email address

Section 1: SOFT MEASURES

Kindly rate each soft measure from 1 (lowest priority) to 10 (highest priority). Ideally, your choices should be as wide as possible. In other words, please try to use the full range of the rating from 1 to 10 for the 8 proposed measures. For further details on each measure, please refer to the presentation provided to you.

1. Provide training and template/s of how energy performance contracts should be put in place2. Provide a one stop shop for all financial incentive measures and to provide technical advice to the general public who would like to achieve NZCO2EB

3. Provide training and continuous professional development to architects, engineers and project managers on aspects of design, technologies, life cycle costings and energy performance certification to facilitate the transition to NZCO2EB.

4. Provide a guide on best-practice methods to renovate public buildings according to their specific sector, such as schools, offices, health centres and housing blocks to facilitate their transition to NZCO2EB status.

5. Provide non-biased information campaigns using social media on the most effective measures including energy management practices that can be applied for buildings in Malta to reduce CO2 emissions. The campaign should also focus on the role of energy performance certification so as to improve the public perception on the certification and enhance their utilisation.

6. Provide a central database for EPCs enabling one to contrast between buildings having different ratings.

7. Improve the public perception of energy performance certifications by encouraging banks to calculate maximum loan limits for potential property buyers based on the energy performance of the property.

8. Consider introducing a mandatory minimum renewable energy share in new and renovated buildings.

Section 2: MEASURES REQUIRING ERDF FUNDS

Kindly rate each measure from 1 (lowest priority) to 10 (highest priority)

1. Provide fiscal incentives or tax rebates for contractors who opt to build new buildings of high efficiency rating beyond the minimum energy requirements of Technical Document F

2. Revise solar water heating grant to regenerate interest in solar water heating

3. Provide bundled incentives combining two technological options such as PVs/SWH, PVs/Heat pump for existing buildings and incentives that combine envelope improvement with RES such as roof insulation/PVs or roof insulation/SWH or roof insulation and shading/heat pump for existing buildings to be renovated

4. Provide grants to install solar water heaters and/or heat pumps for domestic hot water for the hospitality sector (hotels/ restaurants), residential people homes and sports complexes

5. Provide incentives for solar shading and/or spectrally selective coatings and films for the commercial building sector

6. Extend government communal solar farm projects to households who despite having a roof cannot install PVs due to solar shading. Another possibility can be to extend communal farms to commercial buildings (such as many restaurants) that do not own a roof top

7. Renovate 5 % of the public housing sector to reduce their CO2 emissions by 30 % or more by end of 2020

8. Devise projects to improve the energy performance rating of public authority buildings, such as Ministries, public offices, health centres and public schools and sports complexes

Section 3: Other questions

Kindly provide a short answer to each of the below questions

1. Are there any other measures that you feel should be included in the action plan?

2. Do you foresee any measures that cannot be implemented in practice?

3. Are there any measures that should be absolutely removed?

4. How do you see this project useful to support certain needs in your Ministry/Department?

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Photographs of the event

Caroline Debattista, FPD delivering the first presentation

Charles Yousif, ISE delivering the second presentation

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Damien Gatt, ISE delivering the third presentation

High level participants in the meeting.

Damien Gatt, Luciano Mule' Stagno (ISE Director) and Charles Yousif

Food and catering purchased for the event

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Appendix A

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Charles Yousif <charles.yousif@um.edu.mt

RE: ZEROCO2 - PP contribution

1 message

Tea Potocnik <tea.potocnik@lea-ptuj.si> 6 December 2017 at 15:2

To: boglarka.toth@um.edu.mt, ieva.kripiene@krs.lt, Benjamin Daumiller <b.daumiller@eifi.eu>, c.ashe@eifi.eu, c.letourneur@avitem.org, "charles. yousif@um. edu. mt" <charles.yousif@um.edu.mt>, czurlo.cte@regione.molise.it, Damien Gatt <damien.gatt@um.edu.mt>, George Angelakis <angelakis@maich.gr>, Lea Hämäläinen <lea.hamalainen@thermopolis.fi>, mario <ialenti.mario@mail.regione.molise.it>, "matti.alakoskela" <matti.alakoskela@thermopolis.fi>, pace.pierluigi@mail.regione.molise.it, Patrick CREZE <p.creze@avitem.org>, sandra.scarlatelli@regione.molise.it, Stefano Audifredi <s.audifredi@avitem.org>, vourdoubas@chania.teicrete.gr, zeroco2@mail.regione.molise.it, grazina.cepuliene@krs.lt, ruta.snarskiene@krs.lt, Janez Petek <janez.petek@lea-ptuj.si>, d.glen@eifi.eu

Dear all,

As you know, one of the main outputs of this semester is **Market need report**. I know some of you have external help for this task, some of you are already preparing it. But for those that don't know how to start, what to include in the report, please see in the attachment the template. For the purpose of the project we don't have to use the common approach - when preparing the report, you have to think about your regional specifics, the stakeholders you want to reach, your regional legislation, etc. The template should be only your guidance. And of course you can add something and adjust it to your need. I advise you to ask your policy makers and other stakeholders for their contribution to the market need report.

The deadline for the delivery is February 2018!

Secondly, at the moment the on-line system for good practice submission is not working. But still, you have to upload good practices in to LIN-A.

Third, please keep in mind the international conference next year in March. At this point we are waiting for the confirmation of participation from commission energy team and policy learning platform. But still, we would like to have more high level speakers. Do you have any suggestions or contacts?

We were thinking of having a project skype meeting to discuss the conference more specifically (and of course other project matters). Because of the tight schedule we could have the skype on 18, 19 or 20th of December. I suggest to have it at 1pm (CET). Please let me know your availability here: https://doodle.com/poll/v5hdnz72fffegv7i . It would be most suitable that all partners are present at the skype meeting. If this will not be possible, we will arrange the skype at the beginning of January.

Kind regards to all,

Tea

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