ENI CBCMED
Cooperating across borders in the Mediterranean

Project funded by the EUROPEAN UNION

REGIONE AUTÒNOMA DE SARDIGNA
REGIONE AUTONOMA DELLA SARDEGNA

Med-EcoSuRe

MED beX.Live webinar

MED beX live

Mediterranean Cross Border Living Lab
live the experience of university building environment

Topic: **How can cost -effective energy efficiency and high-tech renewables take place in isolated zones/towns?**

Date: **28-07-2020**

Host:

Spanish Solar Energy & Energy Efficiency Cluster - SOLARTYS

University of Sevilla - US

Med-EcoSuRe

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Med-EcoSuRe Project

Project Title	Mediterranean University as Catalyst for Eco-Sustainable Renovation
Project acronym	Med-EcoSuRe
Funding scheme	European Union under the ENI CBC Mediterranean Sea Basin Programme 2014-2020
Start date	September 1st, 2019
Duration	36 months

Med-EcoSuRe is a project funded by the European Union, under the ENI CBC MED programme 2014-2020. The programme is managed by the Autonomous Region of Sardinia (Italy) and aims to promote cross-border cooperation in the Mediterranean region.

The main objective of the project is to propose and implement innovative and eco-sustainable energy renovation solutions for Mediterranean university buildings and introduce an active collaborating approach for decision support, among key actors involved, in the framework of a Living Laboratory: MED beX.Live (Live the eXperience of university building environment).

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1. Target audience

- Energy managers and technicians from solar companies.
- Decision-makers/managers of energy efficiency in public buildings.
- Professors and students interested in effective energy efficiency and high-tech renewals.
- Key Actors in the (experts, auditors, manufacturers, architects, etc.) with activities related to energy management in buildings.

2. Invited speakers

- George E. Georghiou from the University of Cyprus - Berlin Project funded by the European Union, under the ENI CBC MED programme 2014-2020
- Marilena Lazopoulou, Mini-grid Specialist in TTA (Trama Tecnoambiental)
- Miquel de la Mano, Technical expert in Prosume Solutions

3. Med-EcoSuRe PROJECT Presentation – Alba Álvarez

Ms. Alba Álvarez started the event by thanking all the participants and speakers for attending the webinar. Then, she spent few minutes presenting the organization hosting the event and where she held the position of Cluster Manager.

Solartys is a non-profit organization working since 2009 for the development and implementation of solar energy solutions at every level of society. Solartys counts with more than 100 members mainly SMEs that work along the whole value chain of solar energy, notably Photovoltaics (PV). Furthermore, they have a long period experience participating in projects at both national and international level.

After this short presentation, Ms. Alba continued with an overview of Med-EcoSuRe project idea, presenting all the partners involved in the consortium and offering a summary of the main achievements reached during the first year of the project.

Med-EcoSuRe project is rooted in the key role that Mediterranean universities have to play in contributing to environmental sustainable development and combating climate change. It also foresees to bring together researchers, decision makers and stakeholders to build a common understanding of the eco-sustainable building renovation issues in a collaborative "living lab". Finally pursue to value innovative energy renovation solutions and foster sustainable science and policy progress, starting by the university's immediate neighborhood, which is the university building.

The main findings of the first year of the project has been: an energy audit performed at the An-Najah National University; the Kick of Meeting held in Tunis; the establishment of a database of stakeholders, the survey for sustainable building rehabilitation solutions performed; the launch of the Mediterranean Cross Border Living Lab; the launching of the Newsletter; the call for web designers for the creation of an ICT platform and finally the call for tenders for a supply and installation of a grid-rid PV power plant at An-Najah University.

Finally, Ms. Alba introduced the rest of participants and gave the floor to Prof. George E. Georghiou from BERLIN project.

4. BERLIN PROJECT Presentation – Prof. George E. Georghiou

BERLIN project was selected among the projects funded in the same programme as Med-EcoSuRe, in order to detect some synergies between both.

Prof George E. Giorghiou, Project Coordinator, kindly accepted our invitation and made a summary presentation about the project objectives and present status.

The idea of the project is to refurbish existing buildings into smart and resilient nanogrids using storage. Ideally, that would fit from one to several dozens of buildings, increasing the use of Renewable Energies (RE), fighting energy poverty, and contributing to the sustainable socio-economic development.

Three main components are integrated in a nanogrid: PV, Energy Storage System (ESS) and Demand Side Management (DSM). Validation of the concept is being made in 8 pilot buildings in some of the partner's countries.

Expected project outcomes in the Pilot actions in buildings in 4 countries, are:

- Optimal integration of 3 cost effective technologies in public buildings (PV, ESS, DSM).
- Tools Development for renovating public buildings with PV+ESS+DSM.
- Stimulating the uptake of PV+ESS+DSM hybrid technology through country specific recommendations
- Case studies involving the PV+ESS+DSM hybrid technology
- Creation of Intelligent Utilization of PV Technology in the MED region (IUPVMED) hub & approval of strategies

As conclusion: The combination of PV with battery storage and effective demand side management in a nanogrid setting can transform public buildings into intelligent entities that can assist towards the energy transition. BERLIN Project aims to pave the way and demonstrate the above

5. BLOCK 1: High-tech renewables in public buildings: AVRA & University of Sevilla – Prof. José Luis Molina

Prof. Molina made this presentation on behalf of AVRA (The Andalusian Housing and and Rehabilitation Agency) whose representative was unable to attend the webinar due to a scheduling conflict. He first introduced the most interesting data on the expertise of both institutions, AVRA and Grupo de Termotecnia, respectively, long term experience in public building management and long term experiment in research and development projects on the topic of energy and buildings.

As an example of joint research and development projects, that are being actually built, and whose results will be available in few months, the Mengíbar Project was shown. It consists of the Integration of natural sink into a climatic adaptive building envelope: The project site is located in the south of Spain, with 8400 m^2 of residential buildings; in addition to conventional retrofitting substitution of windows, insolation in façades ,conventional solar thermal system, we will install an Innovative active roof of more than 2500 m^2. This is one of the first real experiences in the world and will include smart control system in function of climatic and Energy needs predictions. Expected improvements in terms of indoor comfort will reduce the number of degree hours combined with temperature from 2583 to 204. This would make possible to exclude the conditioning due to the energy poverty in most of the building occupants.

Details of the thermal performance of the building (by simulation) showed a very good performance. The results illustrated includes constructive details, flow patterns and the plan of introduction in the buildings, including the identification of four geometrically different cases which were designed and are being built at present time in the buildings.

At the conclusion, Prof. Molina stated the recommended procedure for high tech component integration in any type of building

1st Develop the high tech concept and how to build them in actual buildings;

2nd Modelling…

3rd Assess them via simulation eventually optimization of design parameters;

4th Construction of prototype;

5th Evaluation and impact verification

6. BLOCK 2: Technical cases:

- **Energetic communities & Blockchain – Mr. Miquel de la Mano, Technical expert in Prosume**

PROSUME is a blockchain-based platform that, thanks to its own decentralized and self-regulated monitoring system, guarantees an autonomous, independent and digitized smart place that allows users to energy coming from green or traditional energy sources, promoting and accelerating new energy community models.

Mr. Miquel explained the amazing opportunities that this technology could bring to every step of the energy value chain: in generation, transport and consumption. The energy model must evolve to boost local energy communities, collective self-consumption and Peer-to-Peer (P2P) trading. That will help to contribute to the implementation of decarbonization policies; it will improve the operational performance of the power network and will offer tools to certify the renewable origin of the energy.

As the Clean Energy Package states: "Member States shall ensure that final customers, in particular household customers, are entitled to participate in a RE community while maintaining their rights or obligations as final customers, and without being subject to unjustified or discriminatory conditions or procedures that would prevent their participation in a renewable energy community, provided that for private undertakings, their participation does not constitute their primary commercial or professional activity."

Finally, Mr. Miquel shared a European project they participate in: NESOI (New Energy Solutions Optimized for Islands) – European Islands Facility.

- **Rural mini-grids with PV/hybrid generation: Case studies – Ms. Marilena Lazopoulou, Mini-grid Specialist in TTA**

Mr. Xavier Vallvé from the SME Trama Tecnoambiental (TTA) presented two cases of rural mini grids with PV/hybrid generation and the case of Qabrikha (Lebanon) and Lake Volta islands (Ghana). Since its establishment, TTA has focused all its efforts on changing the way energy is used, through substituting fossil and nuclear fuels with renewable energy, transforming the design criteria of buildings to promote energy independence, and making universal access to electricity possible in the most disadvantaged areas.

Over the years TTA has been at the forefront of the RE sector and through its leadership has contributed to the creation of a favorable environment for clean electricity generation.

As for Qabrikha (Lebanon) case, their problem was that the community was connected to an intermittent grid. In the country, blackouts reach 12-20 hours/day, during which households use back-up gensets, with 16% paying more than 10% of their income on energy.

Furthermore, in Qabrikha there are two grids in parallel: Utility grid by EDL (energy fee) and community genset from municipality (flat rate fee).

The final outcomes were that they became the first community in the area with a net-metering project, the establishment of Energy Committees and procurement of dedicated billing software.

As for Lake Volta islands (Ghana) they had high electrification ratio compared to other Sub Saharan African (SSA) countries (84% with 67% in rural areas). They developed the first pilot project of mini-grids in Ghana. It was commissioned in 2016 and expanded in 2018. The role of TTA was to carry out a turnkey project and 2 years of Operation and Maintenance (O&M). The final outcomes were that Government used this pilot's lessons learned to mainstream mini-grids to the National Electrification Scheme.

7. Discussion and Q&A

After such interesting and enlightening presentations, a round of questions and answers was foreseen. Nevertheless, time was up so the webinar came to an end by thanking all participants and inviting them to know more about the project through the project website.

Annexes

1. Agenda

2. Webinar news

http://www.enicbcmed.eu/med-ecosure-oragnises-series-webinars-launch-its-bexlive-ll

http://www.enicbcmed.eu/med-ecosure-med-bexlive-webinar-series-wrap-cost-effective-energy-efficiency-and-high-tech-renewals-isolated

https://www.solartys.org/es/eventos/webinar-medecosure/

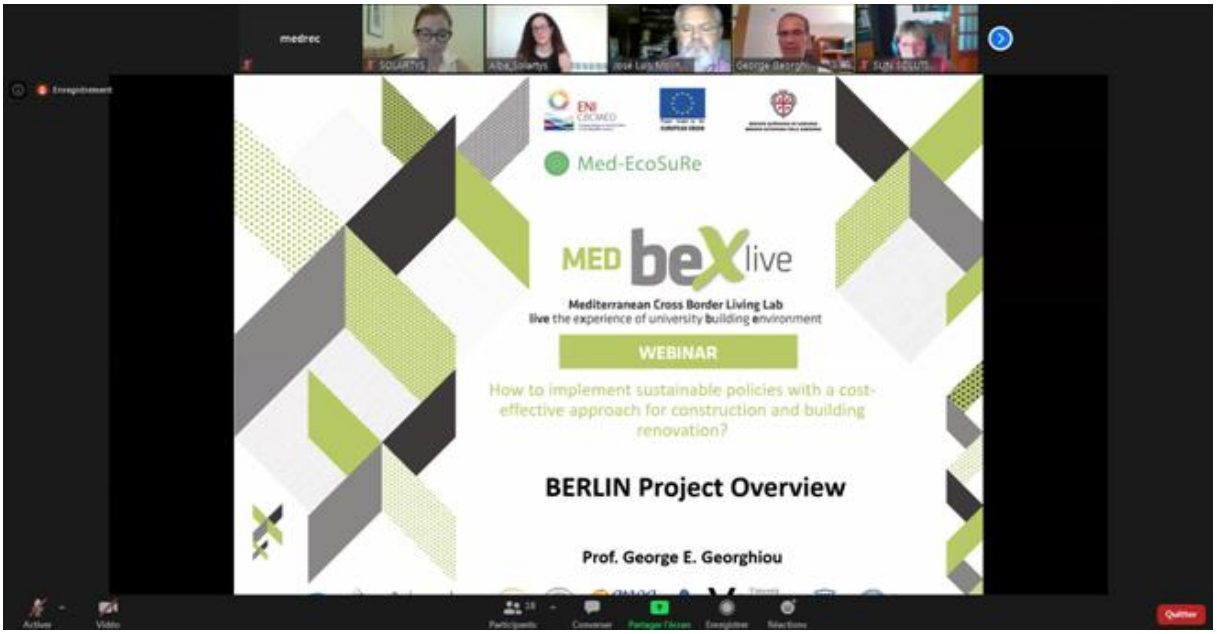
3. Presentations

https://drive.google.com/drive/folders/1bibmVbKrQ-EvBJkEj4ZQmbI2BEiiGj1x?usp=sharing

4. Webinar Recording

https://drive.google.com/file/d/13jPjIj-MG0D8wueJUAmN7LUqGhTL2HSt/view?usp=sharing

5. Photos



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SOLARTYS
Alba_Solartys
George Geor...
José Luis Molin...
Aicha Ben Smida
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WEBINAR
How can cost-effective energy efficiency and high-tech renewals take place in isolated zones/towns?
BLOCK 1 – High-tech renewals in public buildings
Real case – Social Housing of AVRA
S. Álvarez, J. Sánchez, J. L Molina
Grupo Termotecnia – University of Seville
Participants (20)
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Alba_Solartys (Co-hôte)
Aicha Ben Smida
Aida Darghouth Asli-JTS ENI CB...
Alessia
Daniel Castro
Elia Zichi
George Georghiou
Konstantina Ioannou, Deloitte
lakeridou.michelle@ucy.ac.cy
Leticia Gómez_Domotys
MCarmen GD
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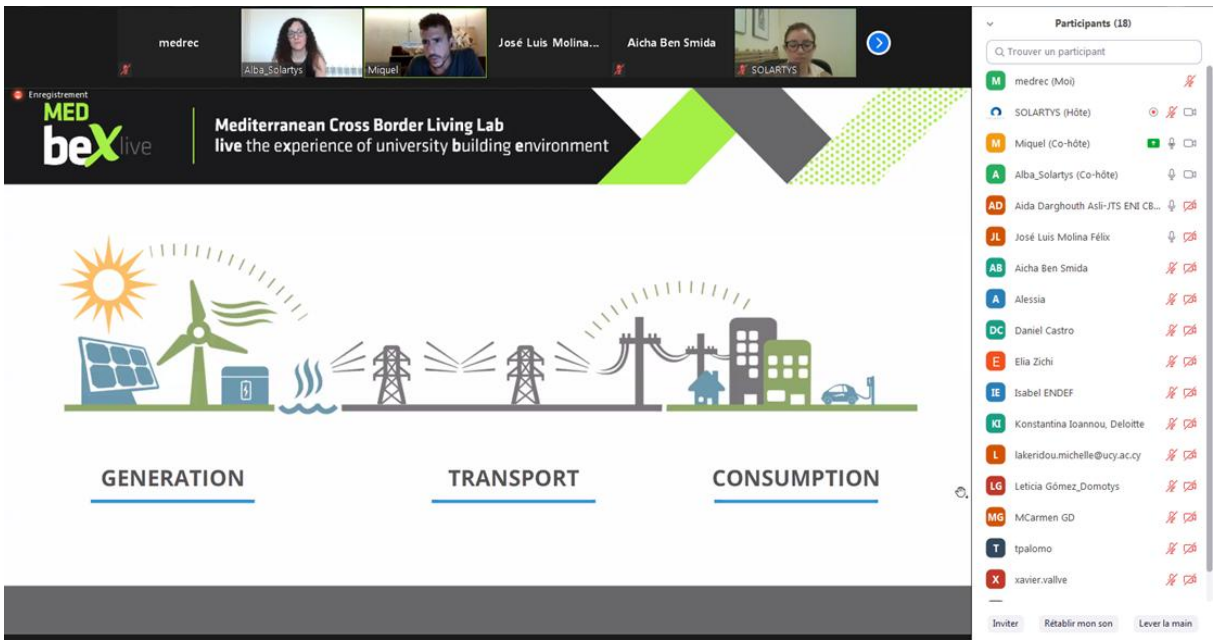
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GENERATION
TRANSPORT
CONSUMPTION
Participants (18)
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Daniel Castro
Elia Zichi
Isabel ENDEF
Konstantina Ioannou, Deloitte
lakeridou.michelle@ucy.ac.cy
Leticia Gómez_Domotys
MCarmen GD
tpalomo
xavier.vallve
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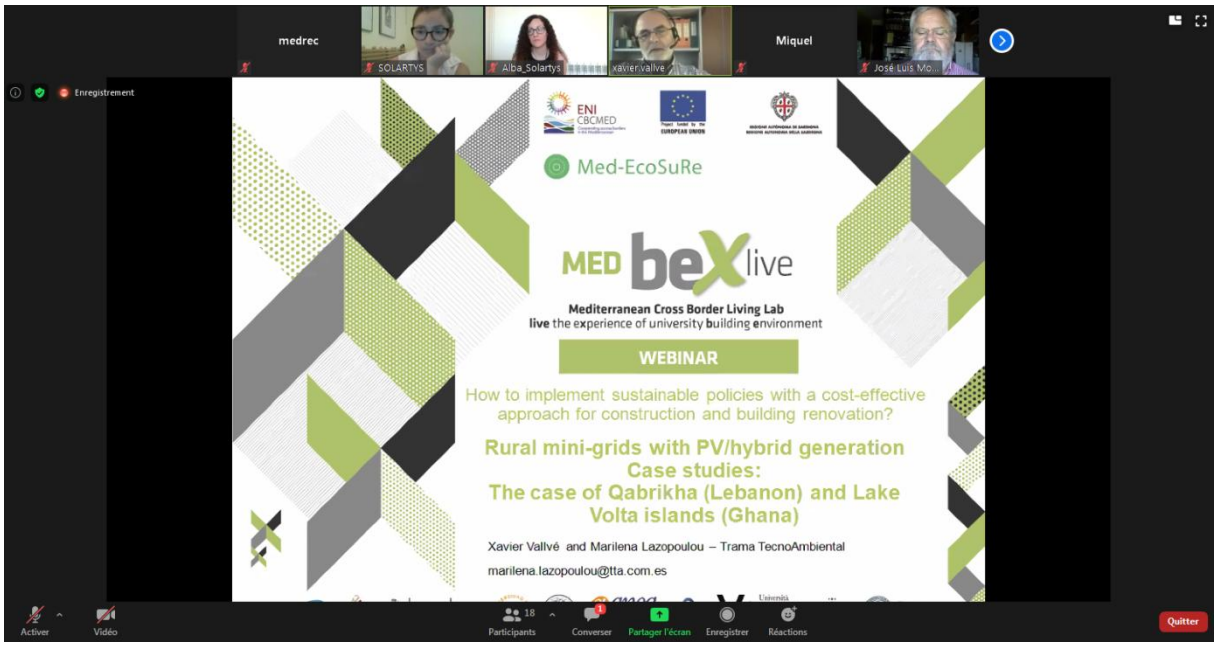
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WEBINAR
How to implement sustainable policies with a cost-effective approach for construction and building renovation?
Rural mini-grids with PV/hybrid generation
Case studies:
The case of Qabrikha (Lebanon) and Lake Volta islands (Ghana)
Xavier Vallvé and Marilena Lazopoulou – Trama TecnoAmbiental
marilena.lazopoulou@tta.com.es
Activer
Vidéo
Participants
Converser
Partager l'écran
Enregistrer
Réactions
Quitter