



INTERVIEW WITH SORINA MORTADA, THE LEBANESE CENTER FOR ENERGY CONSERVATION



Full Name
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Position and organisation
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LEBANON

"The BEEP project will make a huge difference as a direct application of Building Information Modelling (BIM) for Energy Performance Contracting (EPC). This would lead to enhancing Energy Efficiency practices in public buildings".

Dr. Sorina Mortada

What is the main role of your organisation in the BEEP project?

The LCEC is a partner in the BEEP project responsible for the preparation of Energy Performance Contracting (EPC) guidelines. Being the national energy agency in Lebanon, LCEC's mission is to lead the efforts of Lebanon in the development of Energy Efficiency and Renewable Energy to increase energy security and de-carbonization levels. We proactively develop policies, implement projects, and shape the market in harmony with the global sustainable energy transition. Within this role, the LCEC promotes the energy rehabilitation of buildings as a main major in reducing Lebanon's energy bill. Within BEEP, the LCEC has selected two case studies to test the innovative methodology in rehabilitating public heritage buildings.



Which pilot building has been chosen as a case study in Lebanon and why?

Two pilot buildings were selected in Tripoli city: the Municipality of Tripoli and the Rachid Karami Municipal Cultural Center.



Drone picture of the Municipality of Tripoli



Rachid Karami Municipal Cultural Center



What retrofitting scenarios are envisaged for the case study?

Case study 1: the Municipality of Tripoli

In the short term it is proposed to repair the heating, ventilation & air conditioning system, replace the fluorescent lamps with LED lamps, install a solar water heater and add photovoltaic panels. In the long term it is proposed to install double glazing. In addition, it is suggested to replace the equipment with efficient ones.

The energy savings from different combinations of the above measures have been analyzed and the results are shown in the table below:

Energy Savings (thermal and electrical) per proposed Scenario at Municipality of Tripoli Building

Scenario	Measures	Energy Savings (kWh/Year)
Short Term Scenario	• Repairing the HVAC System	
	• Replacement of fluorescent lamps with LED lamps	154,868
	• Adding Solar Water Heater	51,544
Long Term Scenario	Double Glazing	395
Combined Short and Long term scenarios	• Repairing the HVAC System	
	• Replacement of fluorescent lamps with LED lamps	177,213
	• Double Glazing	51,544
Additional Scenario	Replacement of Equipment with efficient ones	123,728
Combined Short and additional scenarios	• Repairing the HVAC System	
	• Replacement of fluorescent lamps with LED lamps	278,747
	• Adding Solar Water Heater	
	• Replacement of Equipment with efficient ones	51,544
	Adding PV Panels	

Case study 2: the Rachid Karami Municipal Cultural Center

Similar measures are proposed for the second case study. In the short term it is proposed to replace the fluorescent lamps with LED lamps and to add photovoltaic panels. In the long term it is proposed to install double glazing. In addition, it is suggested to replace the equipment with efficient ones. The energy savings from different combinations of the above measures have been analysed and the results are shown in the following table:



Energy Savings (thermal and electrical) per proposed Scenario at Rachid Karami Municipal Cultural Center

Scenario	Measures	Savings (kWh/Year)
Short Term Scenario	Replacement of fluorescent lamps with LED lamps	24,476.39
	Adding PV Panels	68,626.80
Long Term Scenario	Double Glazing	81.50
Combined Short and Long term scenarios	Replacement of fluorescent lamps with LED lamps	24,476.99
	Adding PV Panels	68,626.80
	Double Glazing	81.50
Additional Scenario	Replacement of Equipment with efficient ones	12,047.70
Combined Short and additional scenarios	• Replacement of fluorescent lamps with LED lamps	
	• Efficient Equipment	36,546.13
	Adding PV Panels	68,626.80

What opportunities does the BEEP project offer to your region?



BEEP project promotes an innovative technology that uses BIM for renovating historical buildings. Until now in Lebanon, BIM is being used by architects on the national level however it was never combined with any energy measure nor EPC types of contracts.

This is challenging for the Lebanese case however, if the financing, awareness raising and capacity building measures are implemented and enforced, there would be definitely a way to promote this practice.

What results of the BEEP project would you highlight?

The BEEP project output will make a huge difference as a direct application of BIM for EPCs which will be disseminated on a national level. This would lead to enhancing Energy Efficiency and Renewable Energies practices in public buildings.



How will your organisation exploit the results of BEEP after the end of the project?

The development of EPCs was detailed in the second National Energy Efficiency Action Plan (NEEAP 2016-2020) as a major initiative to be enforced in the country. The plan included the development of EPC templates and the development of the legal framework adequate for its implementation which would boost the ESCOs market in Lebanon. Based on the BEEP project outcomes, the LCEC will disseminate and promote the importance of EPCs in Lebanon's overall energy solutions. It will as well capitalize on these outcomes in the SEACAP 4 SDG capitalisation project funded by the ENI CBC MED programme.

In addition, BEEP allowed the identification of legal and technical constraints that refrained the development of EPC in Lebanon. The LCEC will be working with the relevant national stakeholders such as the Ministry of Energy and Water on proposing the adequate legal and technical solutions to promote and enforce EPCs. Besides, the methodology proposed within BEEP (BIM with EPCs) will be as well disseminated as a solution for the rehabilitation of public heritage buildings. Replicating BEEP results will be definitely on LCEC's list of activities on the national level.

THE TEAM

Lebanese Center for Energy Conservation (LCEC): BEEP partner

LCEC is the national energy agency for Lebanon. LCEC's mission is to lead the efforts of Lebanon in the development of Energy Efficiency and Renewable Energy to increase energy security and de-carbonization levels. We proactively develop policies, implement projects, and shape the market in harmony with the global sustainable energy transition.



COLOPHON

About the BEEP project:

BEEP project aims at strengthening the use of Building Information Modelling (BIM) to enhance energy efficiency in buildings. The testing of this emerging technology on built heritage will be performed to demonstrate its scalability to the entire building stock. The project will provide public administrations with a powerful method for the energy rehabilitation of public buildings to be supported with private funds through the Energy Performance Contracting (EPC). The project main outcome will be an innovative methodology based on the integration of emerging technologies tested on 9 heritage public buildings located in Italy, Spain, Cyprus, Jordan, Palestine, Lebanon, and Egypt.

The BEEP project, which started in September 2019, has a duration of three years, and counts with a total budget of € 1,934,184.51 of which 90% is funded by the EU under the ENI CBC Med Programme.

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