

BUILD_ME

ACCELERATING 0-EMISSION BUILDING
SECTOR AMBITIONS IN THE MENA
REGION

EXTENSION

Project presentation
Focus on pilot projects

25 February 2020

OUTLINE

1. Introduction

1.1 Navigant

1.2 IKI

1.3 BUILD ME PROJECT (I + II)

2. Energy efficiency a free source of energy

2.1 German Case Study

2.2 MENA Case Study

2.3 Key take aways

3. Join the BUILD_ME project

3.1 Benefits of pilot projects

3.2 Our expectations of project developers

3.3 Next steps

4. Conclusion

5. Contacts

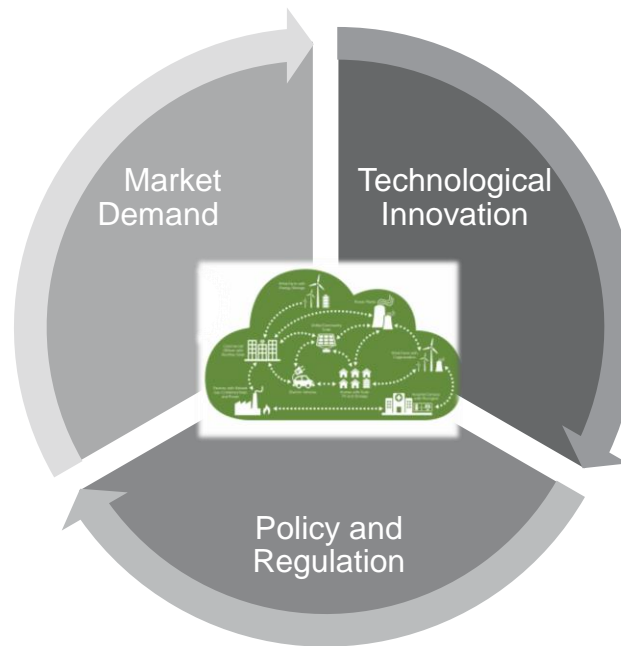


INTRODUCTION

WE SUPPORT CLIENTS IN MANAGING THE ENERGY TRANSFORMATION

NAVIGANT OVERVIEW

- **600 experts** in more than 20 offices in Europe, USA, Middle East and Asia
- **More than 30 years of experience** in developing and evaluating policies, sustainability strategies, and scenarios for companies and sectors provides us with deep knowledge of the market.
- **Our strength lies in our strategic understanding** of complex energy and climate transition issues: We connect the dots within the triangle between governments, relevant companies and end-users.



WHO ARE WE

WE HELP YOU HANDLE THE DRIVING FORCES
OF TRANSFORMATION

WHO WE WORK WITH

FUND

INTERNATIONAL CLIMATE INITIATIVE (IKI)

The IKI fund of the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMU) finances projects in the following areas of:

- Mitigating greenhouse gas emissions
- Adapting to the impacts of climate change
- Conserving natural carbon sinks with a focus on reducing emissions
- Conserving biological diversity.

In 2016, Navigant was awarded to lead the project of “Accelerating Zero-Emission Building Sector Ambitions in the MENA Region” to help the relevant ministries and stakeholders in MENA region to promote the use of climate-friendly heating and cooling technologies.



INTERNATIONAL
CLIMATE INITIATIVE (IKI)



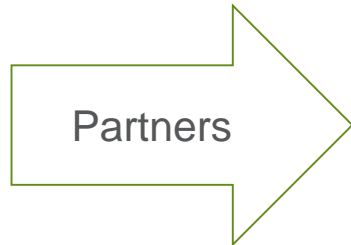
Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

Source: <https://www.international-climate-initiative.com/en/about-the-iki/iki-funding-instrument/>

ORIGINAL PROJECT [2016-2018] IN A NUTSHELL



Location



Partners



PROJECT IN A NUTSHELL

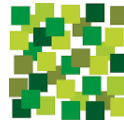
- Prepared macroeconomic analysis focusing on the energy sector overview.
- Managed a policy dialogue with the concerned stakeholders to improve the political framework for energy efficiency in the building sector.
- Supported pilot projects to increase use of energy efficiency heating and air conditioning systems in new multi-family residential buildings.

EXTENSION PROJECT [2019-2021] IN A NUTSHELL

Same Location



New additional
Partners



JORDAN GBC
المجلس الأردني للأبنية الخضراء
Jordan Green Building Council



NEW SCOPE IN A NUTSHELL

- Support the implementation of EE/RE measures in pilot projects (all new building types)
- Develop tools to enhance the transparency of EE Buildings (calculation tool, classification scheme)
- Assist the financing of low energy buildings and train relevant stakeholders



**ENERGY
EFFICIENCY: A
FREE SOURCE
OF ENERGY**

ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

GERMAN CASE STUDY – ETRIUM, COLOGNE I

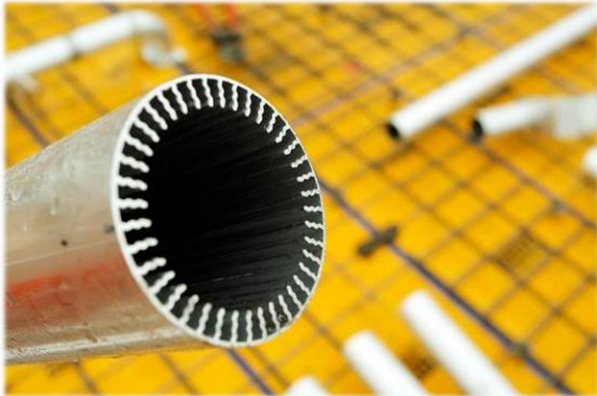
Passive house approach applied to Etrium

- Treated floor area: 3,361 m²
- U – values wall: 0.09 – 0.17 W/m²K
- U_w – values windows: 0.76 W/m²K
- Percentage of glazing: 35-40%
- Lighting capacity: 8-10 W/m²
- Maximum heat load: 40 kW
- Maximum cooling load: 43 kW
- Maximum ventilation volume: 4,600 m³/h
- Air speed: 2-3 m/s (max. 8 m/s)
- Annual heat consumption: 10 kWh/m²a
- Primary energy consumption: 116 kWh/m²a



ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

GERMAN CASE STUDY – ETRIUM, COLOGNE II

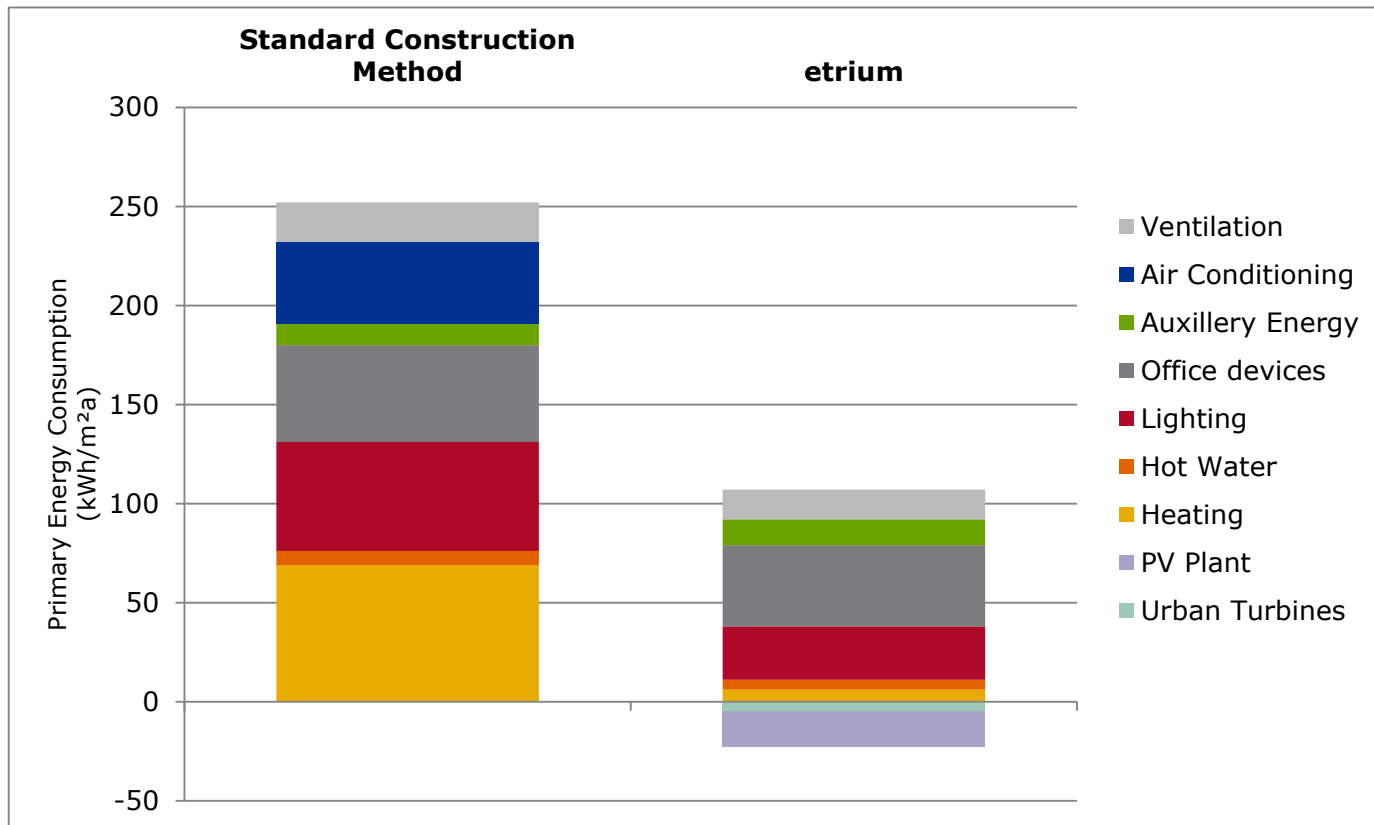


Dargestellter Typ 64 BT 01/Sockelrahmen und flexible Anschlussstutzen als Zusatzausrüstung erhältlich

ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

GERMAN CASE STUDY – ETRIUM, COLOGNE III

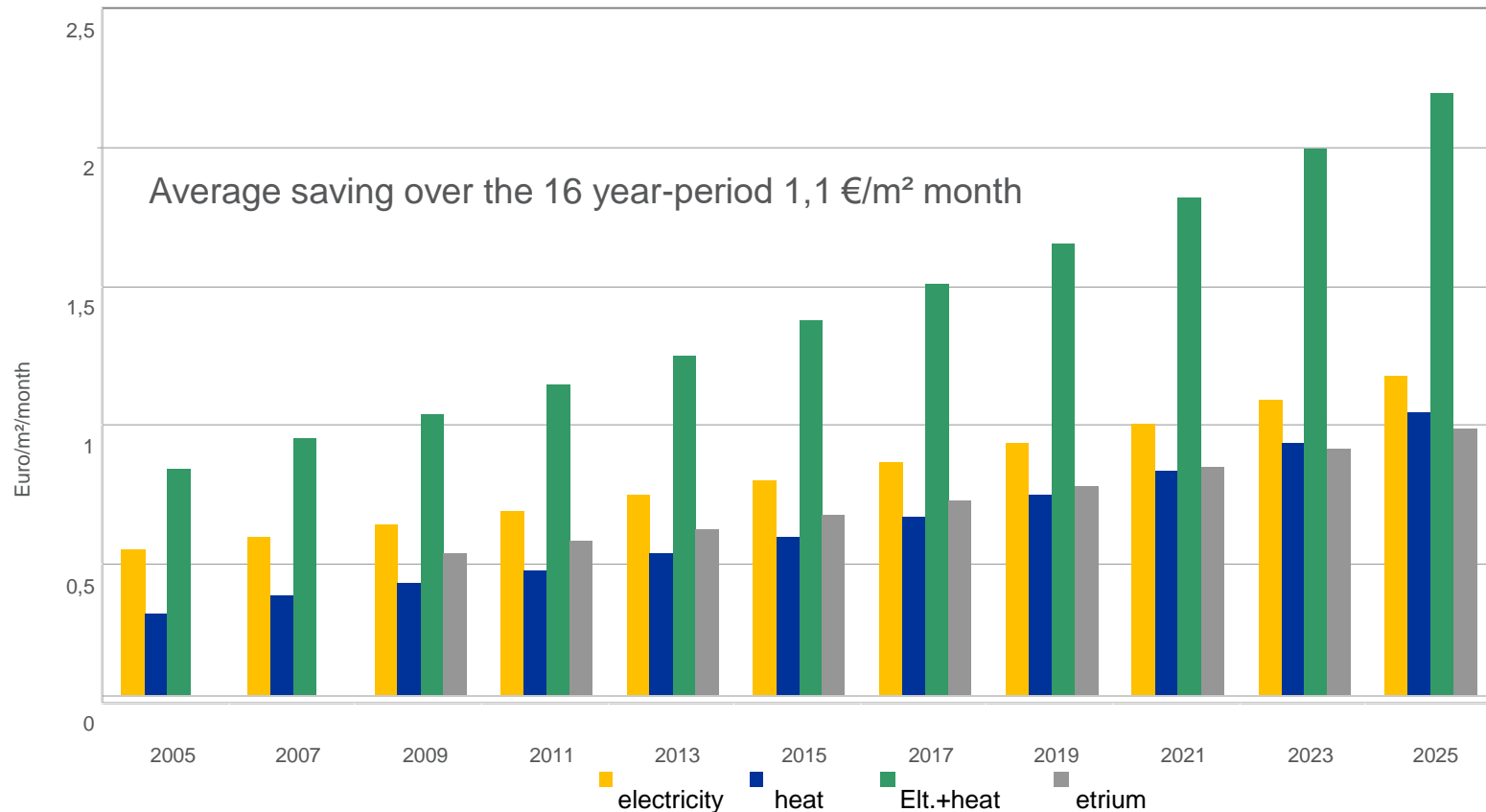
Comparison of energy consumption



ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

GERMAN CASE STUDY – ETRIUM, COLOGNE IV

Comparison of energy costs



ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

CASE STUDY MENA, MEASURES OF EGY PILOT PROJECT

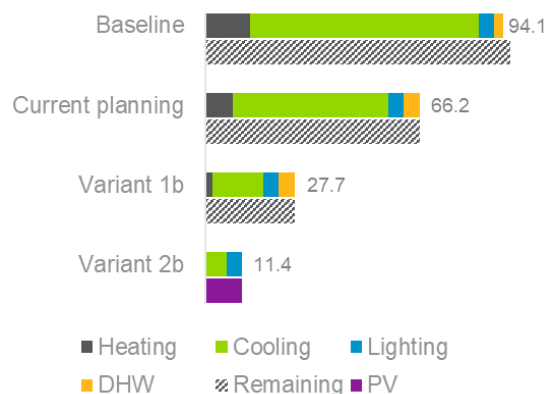
Recommended measures for Pilot Project in Egypt, BUILD_ME Phase 1

Measure	Variant 2B
Roof insulation (U-Value)	0.36 W/m²K
Wall insulation (U-Value)	0.4 W/m²K
Floor insulation (U-Value)	3 W/m ² K
Windows (U-Value; G-Value)	Triple 0.8 W/m²K; 0.3
Window fraction	Ø 20%
Shading	No (solar glazing)
Heating systems	Reversible split unit 5
Cooling systems	Reversible split unit 5
Hot water	Solar Thermal (tubes)
Ventilation systems	Natural
Lighting systems	LED
Renewable energy	Photovoltaics
Set temperature cooling/heating	26°C/20°C

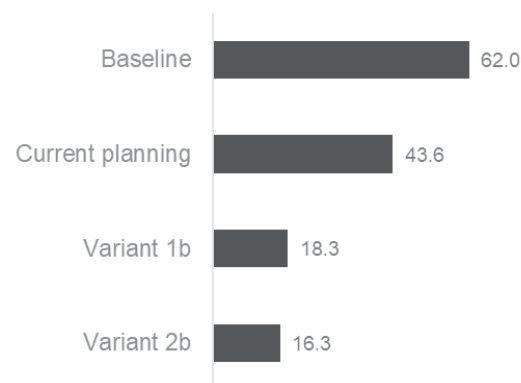
ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

CASE STUDY MENA, RESULTS OF EGY PILOT PROJECT

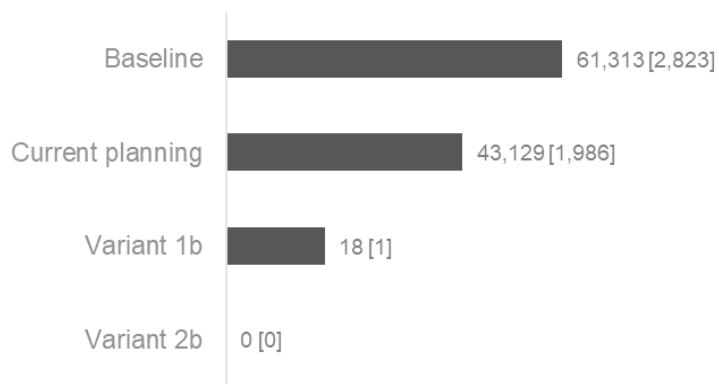
Specific final energy demand [kWh/(m²*a)]



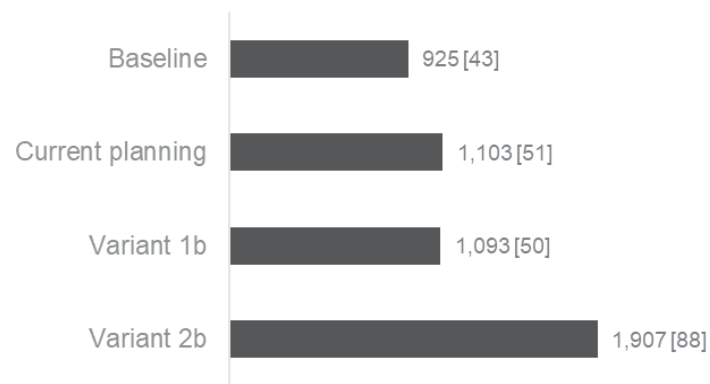
Specific emissions [kg CO₂e/(m²*a)]



Specific energy costs EGP/(m²*a) [EUR/(m²*a)]

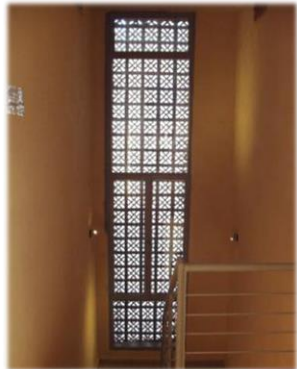
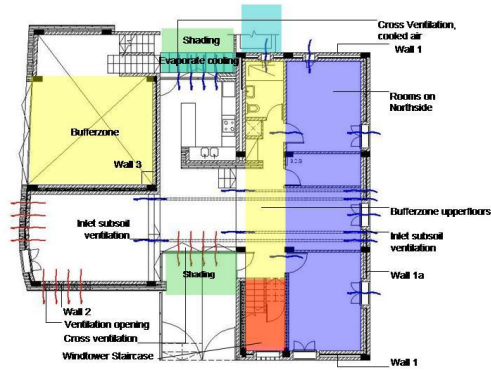


Specific investment costs EGP/(m²*a) [EUR/(m²*a)]



ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

CASE STUDY MENA (JOR) – IMAGES OF MEASURES



ENERGY EFFICIENCY: A FREE SOURCE OF ENERGY

KEY TAKE AWAYS

Energy security

Blackouts intensify in Egypt as consumption soars, production lags

Power cuts have increased this week in Egypt as production capacities fall and – the government says – terrorists target electricity pylons

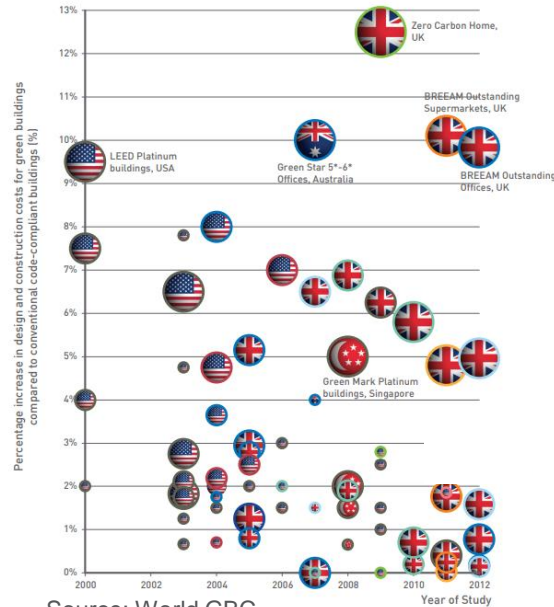
Marwa Hussein, Tuesday 19 Aug 2014 Views:3949



The Agouza neighborhood, background, is seen during a power cut, in Giza, Egypt (Photo: AP)

- 2010 to 2015 : electricity blackouts.
- Demand is increasing, actions need to be taken

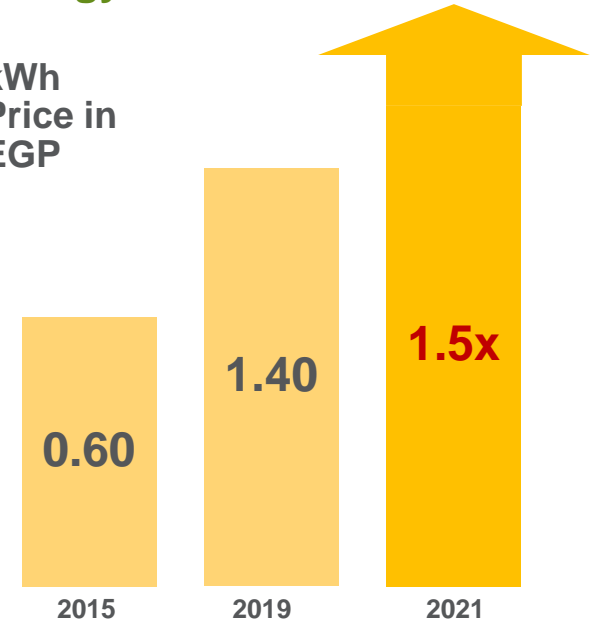
Green Marketing



- Increase of asset value
- Reducing operating costs
- Enhancing levels of comfort
- New strategy of marketing

Energy Cost

kWh
Price in
EGP



- Electricity prices increased by 50%-200% and expected to be more after removing subsidies.



**JOIN THE
BUILD_ME
PROJECT**

BENEFITS OF JOINING THE BUILD_ME PROJECT



Free technical assistance

- Economic assessment including cost-benefit analysis
- (Optional) Dynamic thermal simulation
- Support the Implementation, on site checks



Potential financial support

- Calculation of economic performance
- Support with application to funds
- Partnering with EBRD: offering loans and grants



Bridge your needs to policy decision maker

- Identify barriers while implementing EE/RE measures
- Discuss with decision maker
- Conceive jointly instruments to improve the overall framework

JOIN THE BUILD_ME PROJECT

COLLABORATION WITH PROJECT DEVELOPERS

- ▶ **MoU:** Agree on the collaboration and the work plan.
- ▶ **Participation:** Take part in several workshops, events and activities.
- ▶ **Support:** Provide the team with information to facilitate the provided support.
- ▶ **Dissemination:** Allow BUILD ME team to publish and disseminate the results.
- ▶ **Implementation :** Implement measures to reach at least 30% of primary energy savings in comparison with baseline case of construction.

JOIN THE BUILD_ME PROJECT

NEXT STEPS



Evaluation of potencial pilot projects by BUILD ME team



Eligible projects will be approached by BUILD ME local experts



Discussions with projects developers and agree on collaboration (MoU)



Assessment of the project to improve its energy performance



Create a work plan to support the design and construction phases

JOIN THE BUILD_ME PROJECT

TIME PLANNING

Year	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WP2: Support the implementation of pilot projects												
Act. II.3 Update the evaluation matrix												
Act. II.4 Identification of suitable pilot projects												
Act. II.5 Technical support												
Act. II.6 Summary of activities												

JOIN THE BUILD_ME PROJECT CONCLUSION

Free technical assistance



Potential financial support



Enhance your visibility



YOUR CONTACTS

NAVIGANT

RIADH BHAR

Managing Consultant

+49 221 65032-522

riadh.bhar@navigant.com

ESLAM MAHDY

Senior Consultant

+49 30 726210200

eslam.mahdy@navigant.com

LCEC – GHADA RAHAL

Energy Engineer

+961(1)389189

Ghada.rahal@lcec.lb