

# How to develop a baseline to assess climate friendly buildings

in Egypt, Jordan and Lebanon



May 31, 2022





# Outline

**1** | Problem statement

**2** | Solution approach

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# Problem statement

The lack of a baseline hindering the assessment of low energy buildings in the BUILD\_ME countries

Lack of enforcement and/or availability of EEBCs

Lack of data about “Business as Usual” BaU constructions

No benchmarking of buildings’ energy performance

**NO**

energy consumption baseline

**Bottleneck**

To finance energy efficient buildings

# Our Integrated Solution

## Define own baselines and develop tailored energy labelling scheme for new buildings

- Data from real constructions not older than 3 years
- At least 5 cases per building type covered in each country building typology
- Data from subsidy programs, literature, interviews with relevant stakeholders, permits documents etc.
- BEP tool based on ISO 52016, fed with local data used as calculation engine.
- Researched buildings in building typology represents baseline, which is shown in the BEP Tool as default value.

### Reference Buildings and Building Typology

**Building typology database**

Country: Lebanon Region: Village

This buildings typology database depicts representative reference buildings in Egypt, Jordan, Lebanon, and the United Arab Emirates. These are buildings in the building stock (new and existing buildings) that represent a specific building type (e.g. free-standing single-family house) and reflect the local architecture and technical building systems. The photos shown are generic photos for that category and the technical specifications that can be found within the database. Some of the photos are also general for that category, meaning they do not correspond exactly to the specific buildings in the photos.

**Typology**

Multi Family House (MFH) - Small (≤1000m<sup>2</sup>) - detached

Single Family House (SFH) - detached

**Construction period**

New and recent constructions (after 2015) Existing building: 1980-2015 Existing building: before 1980

### BUILD\_ME Building Energy Performance Calculation tool

Home Tools Knowledge base

My database

**PROJECT**

Project Name: [input]

**LOCATION**

Country: Jordan

Reference city (representative climate for the selected climate region): Amman

Specify region (e.g. urban): Amman-East

**BUILDING TYPE**

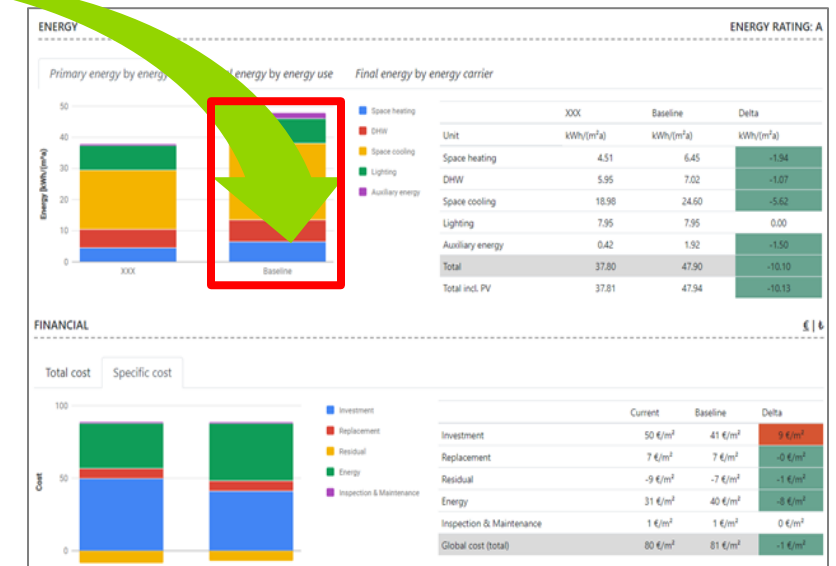
Select building type: MFH (Multi family house/Apartment block)

Age group: New construction (after 2010)

New construction or renovation project: New building

**SYSTEM SELECTION 1**

### Classification of buildings compared to baseline





# Building Typology | Egypt

## Results



### Building type

- Multi-family house
- Single-family house
- Education
- Retail/Trade
- Office
- Mixed-use
- Hospital
- Hotels

1950  
—  
1980  
—  
2000

### Age group

- New and recent constructions (after 2015)
- Existing building: 1980-2015
- Existing building: before 1980



### Regions

- National
- Cairo
- Alexandria
- Aswan

[Link to the typology on BUILD\\_ME website](#)

Typology	Construction period		
	New and recent constructions (after 2015)	Existing building: 1980-2015	Existing building: before 1980
Multi-Family House (MFH) - Small (< 1000m <sup>2</sup> ) - detached			
Single Family House (SFH) - detached			
Hotel / Trade			
Office			
Multi-Family House / Apartment block - Large (> 1000m <sup>2</sup> ) - detached			
Single Family House (SFH) - attached (row houses / townhouses) (with terrace)			

# Logic of the BEP tool

Customisable, transparent, adapted to the MENA region



**Performance of  
energy efficiency  
measures & RE**



**Calculation of  
monetary savings**



**Free web application**



**Proven methodology**

# Online Web App – Results detail

## 1| Quick overview

The main facts.

## 2| Output selection

4 tabs to select the energy performance indicator.

## 3| Overview chart

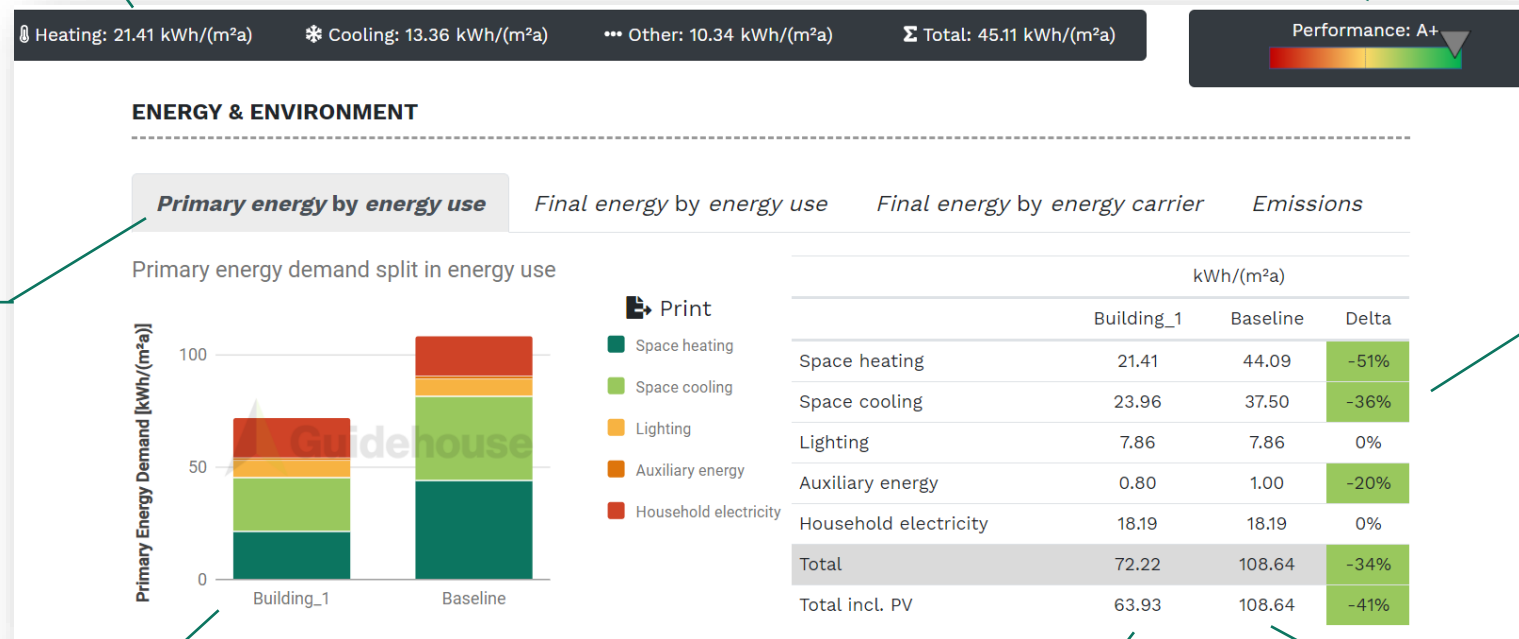
Comparison to the baseline building.

## 7| Performance rating

C = equal to baseline

## 6| Comparison

Difference to the baseline buildings.



## 4| Results table

Detailed results in numbers.

## 5| Baseline building

Detailed results of the baseline building.

# Overview of achievements



BEP tool is ready to use and well perceived by main stakeholders in government, private sector and financial institutions due to several benefits



More than 150 persons were trained on the BEP tool and are already experienced users



Proven approach to optimize energy performance of real estate projects as 13 pilot project tested approach



EBRD interested to use BEP tool, when approach is integrated in national classification schemes, Concepts for national classification schemes in Egypt, Jordan and Lebanon have been prepared



Board of GGF (Green for Growth Fund) approved BEP tool to assess eligibility of projects for financing in AUG 2021



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