



# Introduction of the BUILD\_ME Project and the BEP Tool



Mitigation Enabling Energy Transition in the MEDiterranean region  
Together We Switch to Clean Energy

MED SEI Forum |  
National Roundtable in Egypt |  
February 7, 2023





# Outline

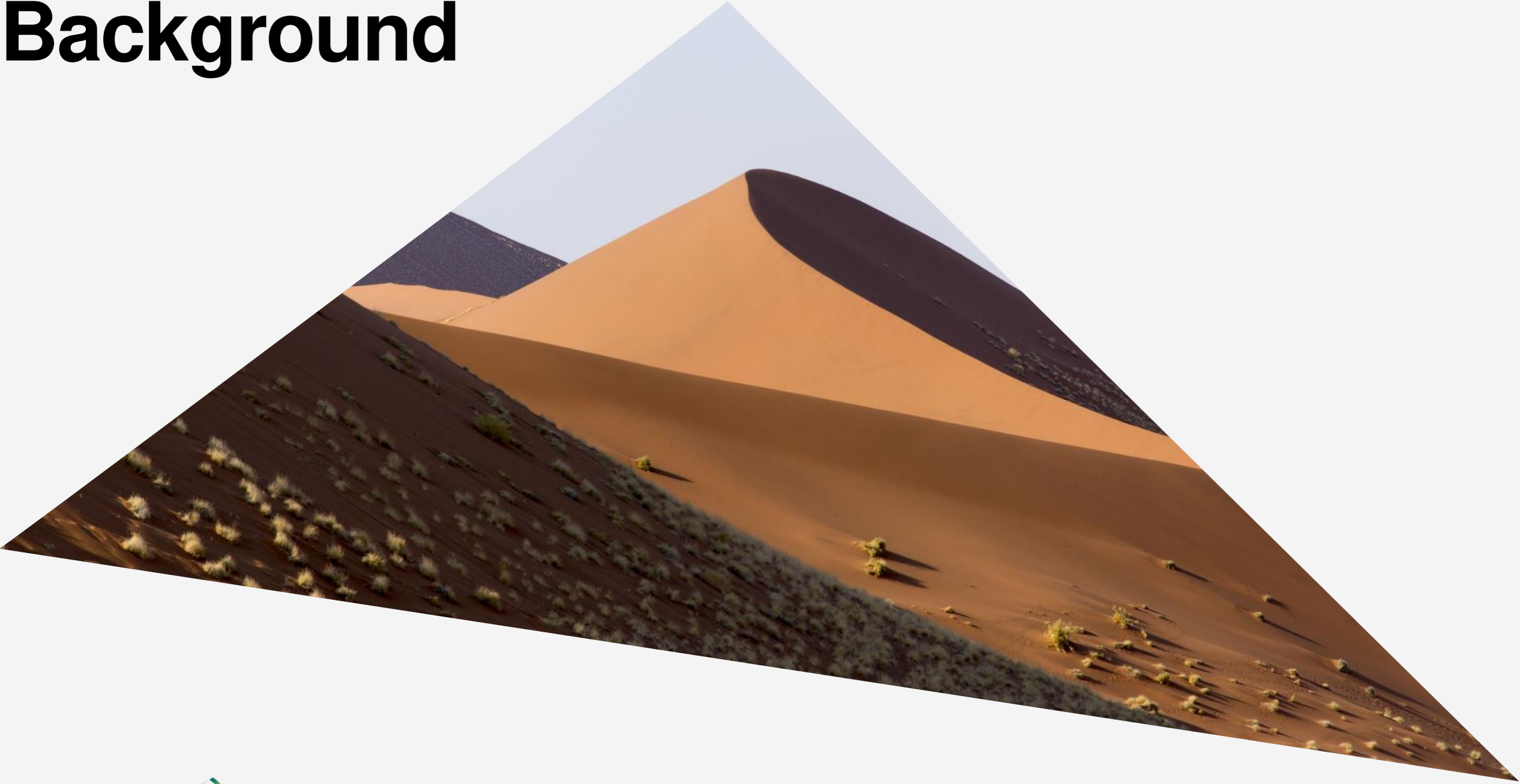
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**3** | BEP Tool

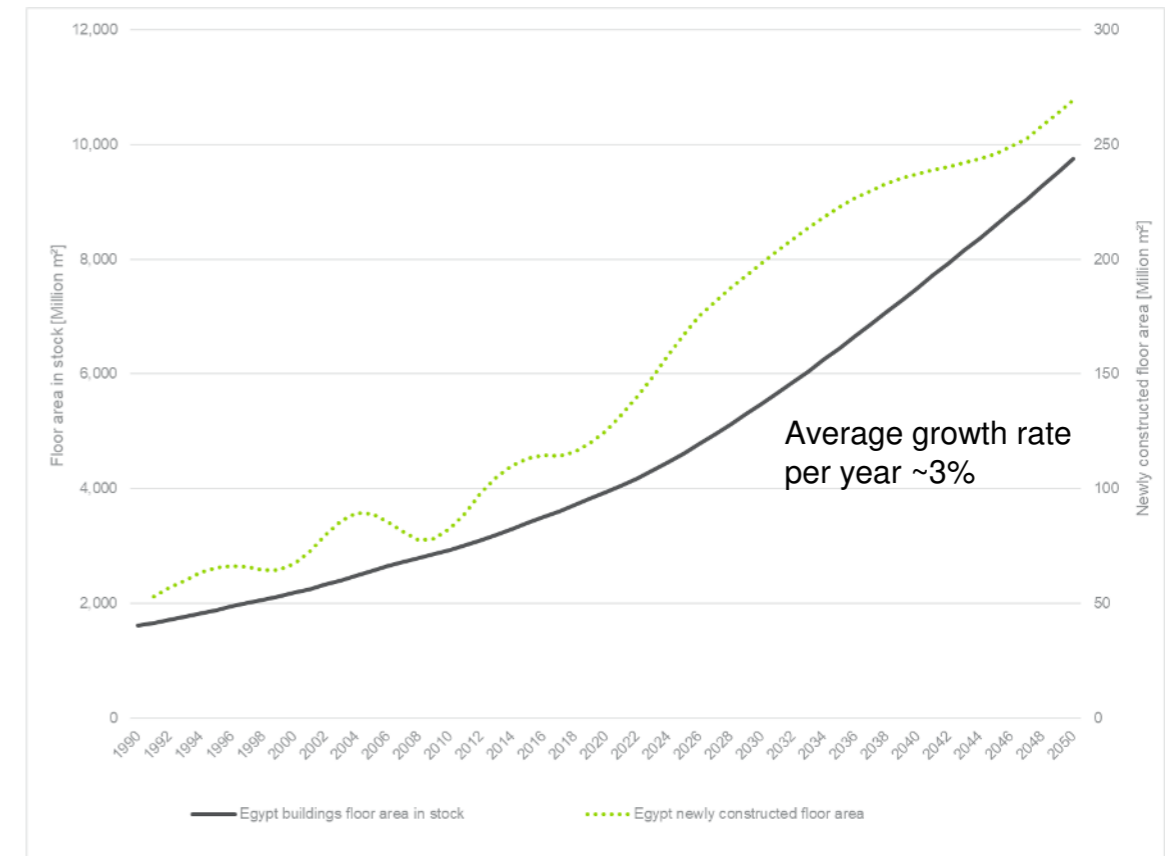
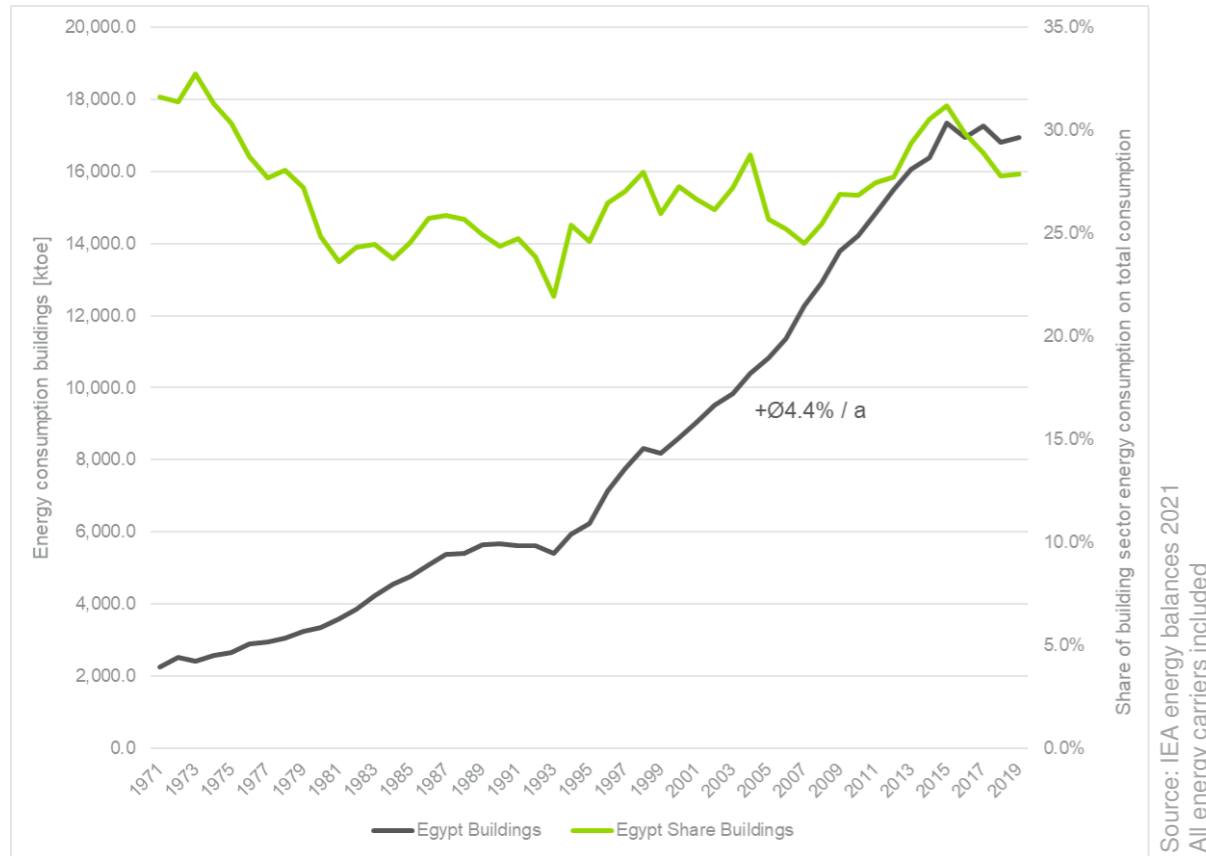
**4** | Conclusion

# Background



# Huge construction activity and increasing energy demand

The energy consumption of the buildings sector in Egypt is and will stay highly relevant



**30%** share for the building sector (energy consumption)

**4%** yearly increase of energy consumption

**3%** future yearly growth of new buildings

# Why are climate-friendly buildings relevant for financial institutions?

Green buildings becoming more and more a billion dollar market

“Green buildings represent a major global investment opportunity, with buildings making up the largest segment of the **US\$ 231** billion energy efficiency market.”



“ During the next decade, green buildings represent a significant low-carbon investment opportunity in emerging markets **\$24.7 trillion** by 2030.”...



“ Global green building materials market size is expected to reach **\$377,029 million by 2022 from \$171,475 million** in 2015 with a CAGR of 11.9% from 2016 to 2022....



# Lack of baseline and enforced EE building codes

Creates a bottleneck for FI's to finance climate-friendly buildings

Lack of enforcement of EEBCs

Lack of data about BaU constructions

No benchmarking of buildings' energy performance

**Lack of**  
energy consumption baseline

**Bottleneck**  
To finance energy efficient buildings

# Introduction of the BUILD\_ME Project



# Introduction to the BUILD\_ME Project





# The main objectives of the BUILD\_ME project



1. Easier access to financing for energy efficient buildings



2. Support the reform & transitions of political frameworks



3. Support the implementation of EE measures in pilot projects



4. Increase awareness and capacities [EE/RE in Buildings]

# The main objectives of the BUILD\_ME project



**1. Easier access to financing for energy efficient buildings**



**2. Support the reform & transitions of political frameworks**

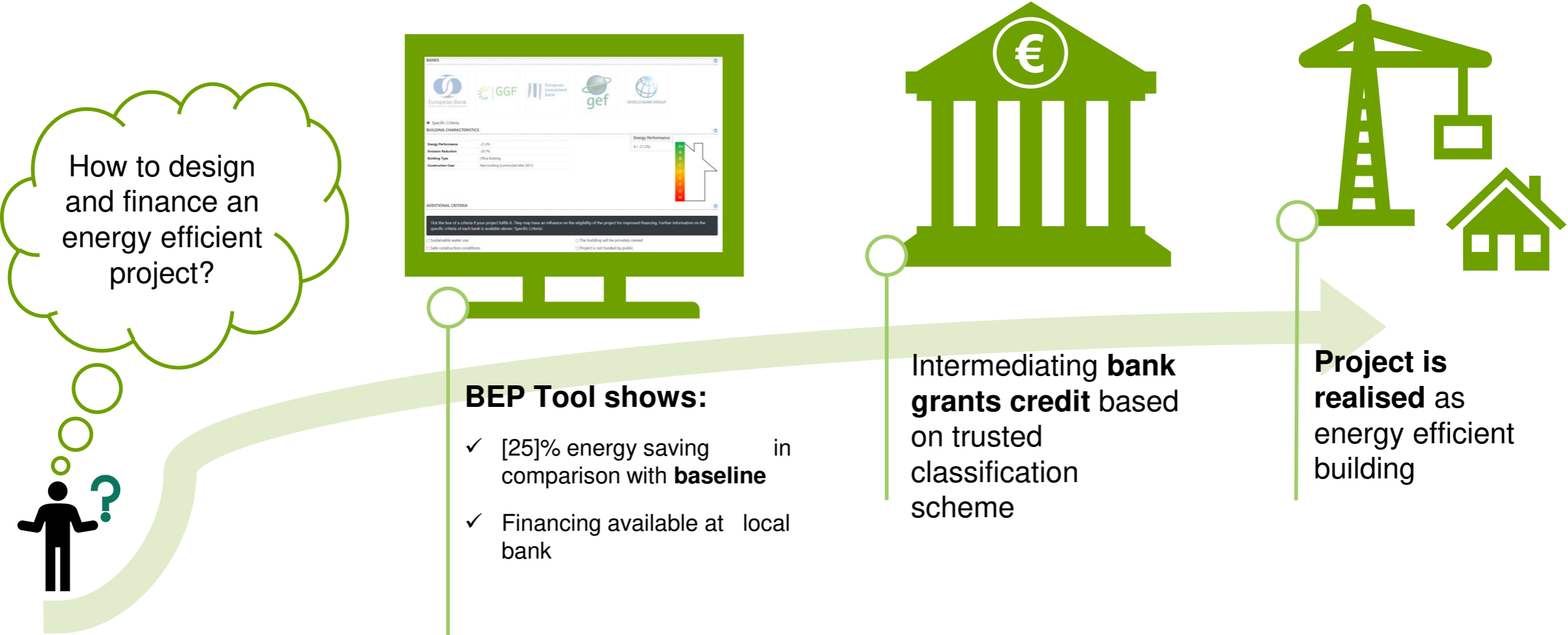


**3. Support the implementation of EE measures in pilot projects**

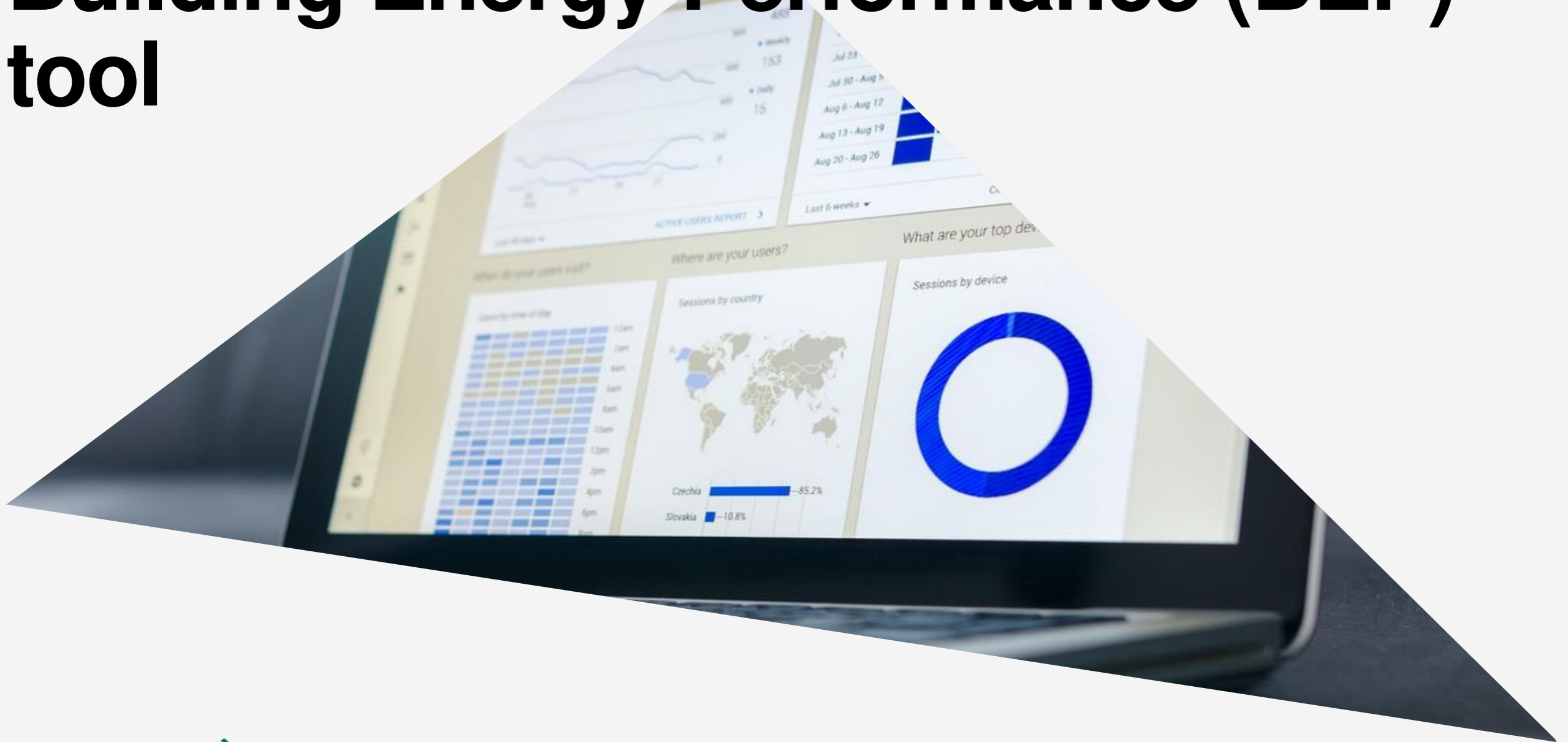


**4. Increase awareness and capacities [EE/RE in Buildings]**

# 1. Easier access to financing for energy efficient buildings



# Building Energy Performance (BEP) tool



# Logic of the BEP tool

Customisable, transparent, adapted to the MENA region



## Performance of energy efficiency measures & RE

- Calculate **energy demand** of building
- Compare it to the **country's baseline** buildings or other personal projects
- Determine the **energy savings** of single or multiple efficiency measures and the use of renewable energies



## Calculation of monetary savings

- Identify **cost savings** resulting from the energy efficiency measures and get the **cost-optimal** case
- **Local market data** is already available for Egypt, Jordan and Lebanon (investment cost, energy prices) ...
- ...or enter the real investment cost and energy prices of the specific project (*not in beta*)



## Free web application

- Tool is **free to use as browser application**
- Optimized for **mobile devices**
- Provides **default input values** for faster application, but also **advanced mode** for experienced user



## Proven methodology

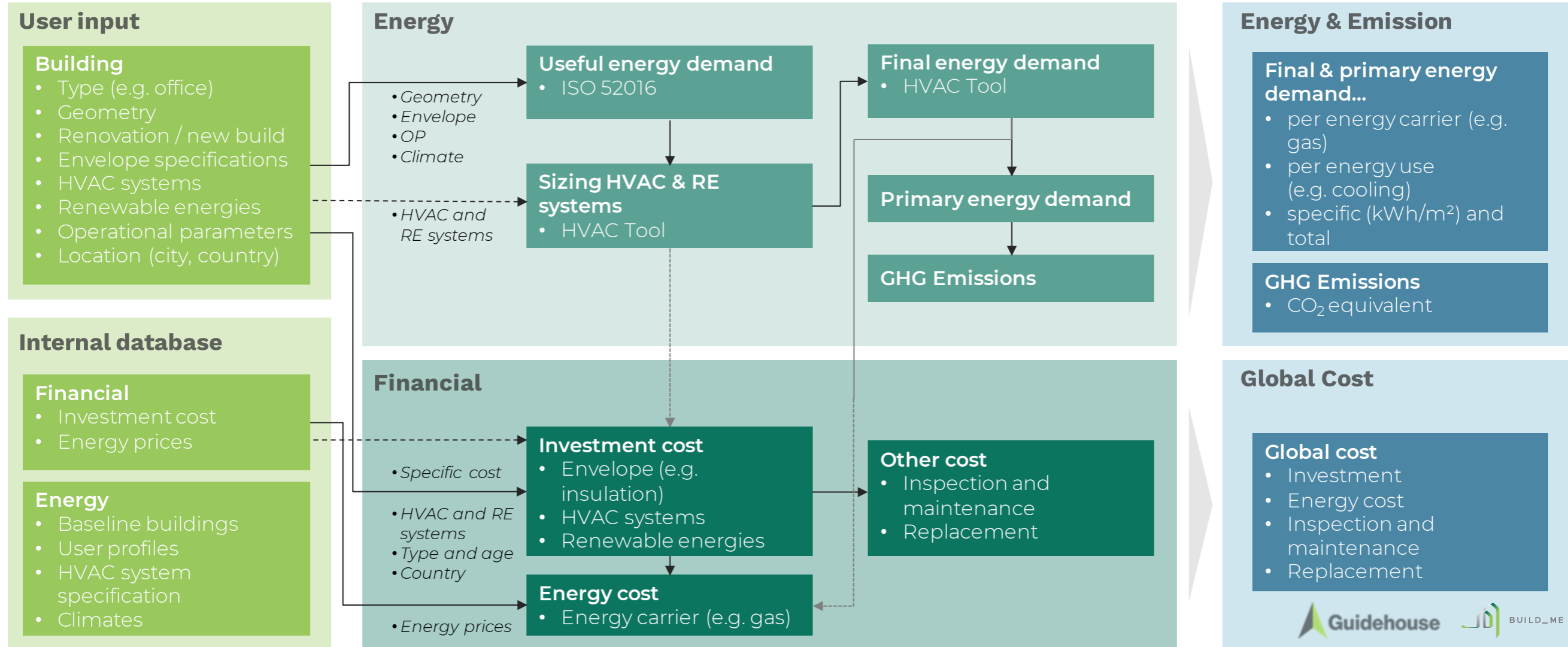
- Energy calculation is based on the **international norm** for modelling thermal building performance (EN ISO 52016)
- The BEP-Tool was already **successfully applied** in various projects and countries
- **Full transparency** with a detailed user manual, incl. all calculation steps and internal assumptions.

# Calculation methodology

## Input

## Calculation engine

## Output



# Online Web App - Input

1

General Information   Input   Results

version: 1.0.9.3   Previous   Next

**PROJECT** ⓘ

Project Name

**BUILDING TYPE** ⓘ

Select building type

Age group

**LOCATION** ⓘ

Country

Reference city (representative climate for the selected climate region)

Specify region (e.g. urban)

2

General Information   Input   Results

version: 1.0.9.3   Previous   Next

**GEOMETRY-RELATED PARAMETERS** ⓘ

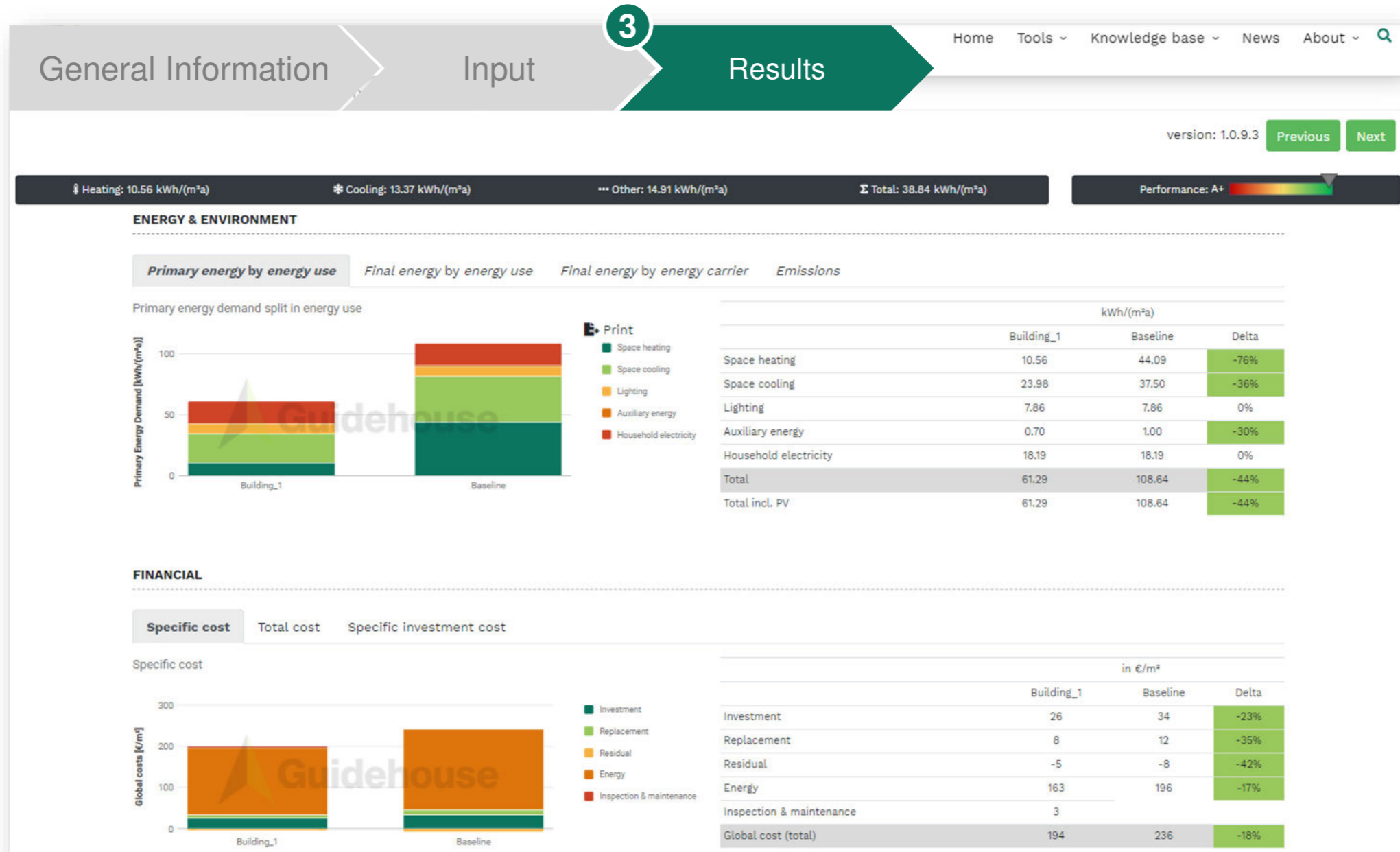
Building levels (floors)	<input type="text" value="5"/>	-
Number of dwellings	<input type="text" value="5"/>	-
Net floor height (Floor to ceiling)	<input type="text" value="2.70"/>	m
Net floor area (i.e. living area)	<input type="text" value="770.00"/>	m <sup>2</sup>
Roof area opaque	<input type="text" value="154.00"/>	m <sup>2</sup>
Façade area opaque (excluding windows)	<input type="text" value="734.00"/>	m <sup>2</sup>
Window area (Total = transparent + frame)	<input type="text" value="225.00"/>	m <sup>2</sup>
Area floor slab (ground plate)	<input type="text" value="154.00"/>	m <sup>2</sup>

**WALL** ⓘ

Wall renovation	<input type="text" value="No"/>	-
Type (material)	<input type="text" value="Single wall"/>	-
U-value (wall)	<input type="text" value="0,5"/>	W/(m <sup>2</sup> K)

**ROOF** ⓘ

# Online Web App – Results





# 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.

## 4| Results table

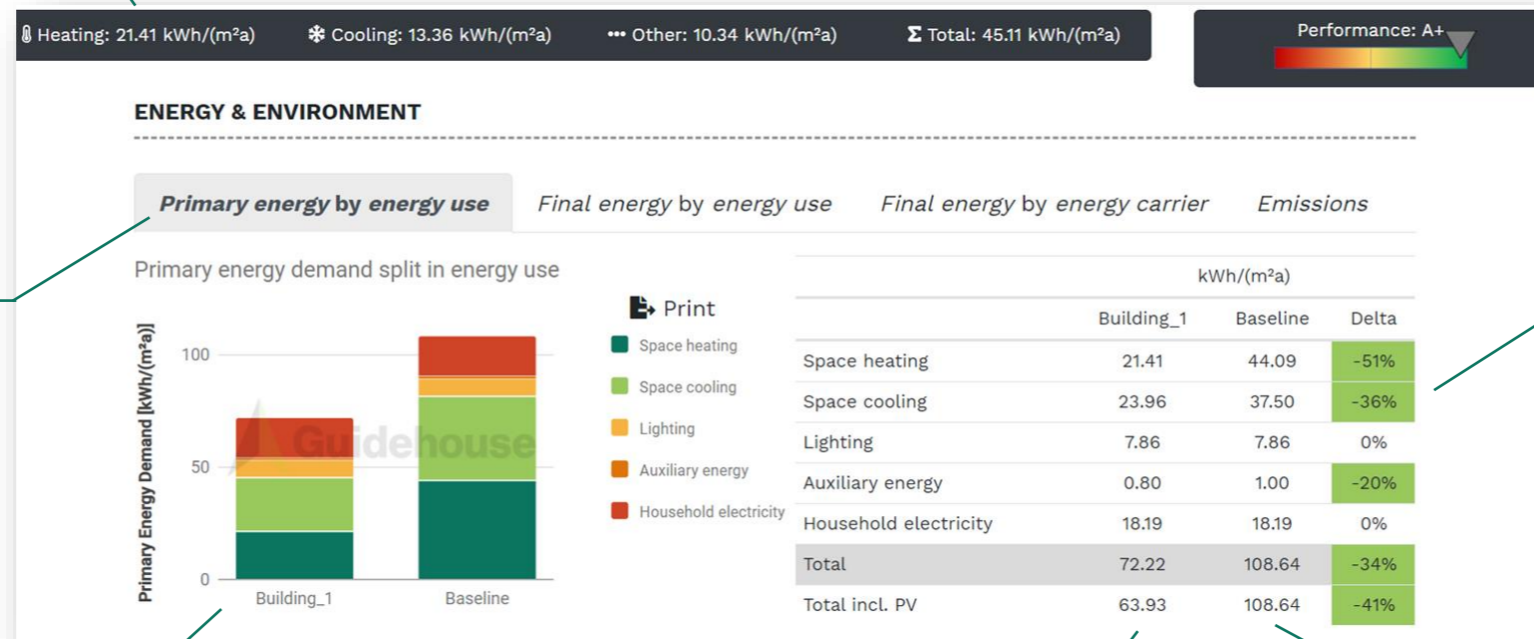
Detailed results in numbers.

## 7| Performance rating

C = equal to baseline

## 6| Comparison

Difference to the baseline buildings.



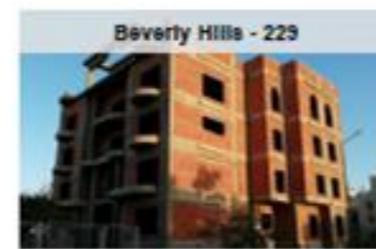
# Tested BEP Tool with 13 supported pilot projects

Project developer confirmed convincing result illustration and user friendliness

## Lebanon



## Egypt



## Jordan

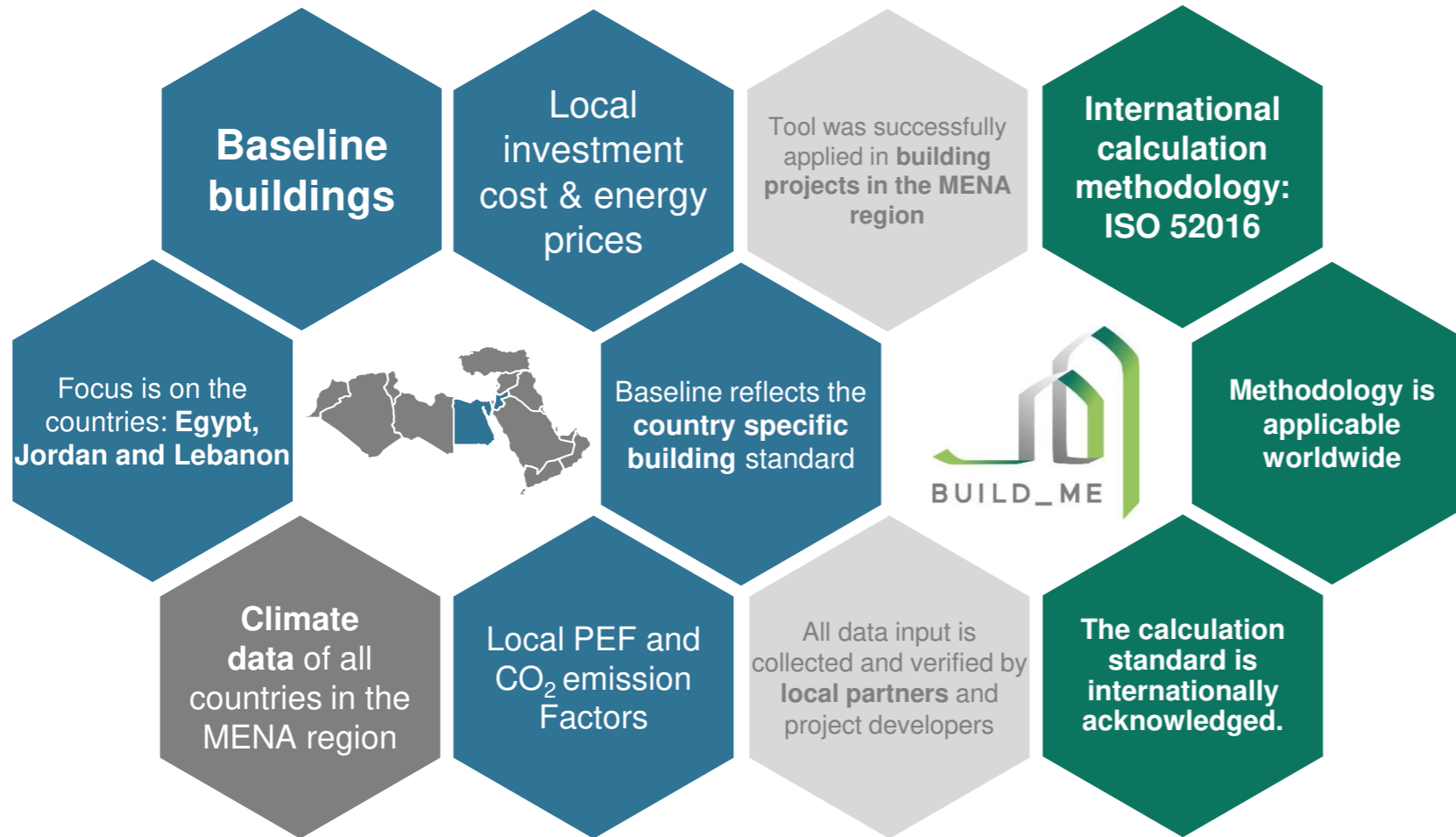


# Conclusions



# Conclusion of BEP Tool

Database from **local partners** & **international** calculation methodology



Internal market data is **collected from local partners** for Egypt, Jordan and Lebanon.



**International energy calculation methodology.**



**Country specific climate data**, incl. multiple climate zones within each country.

# Final discussions

## Feedback and ideas



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# Contact

**Riadh Bhar**

Riadh.Bhar@guidehouse.com

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**Eslam Mahdy**

Eslam.Mahdy@guidehouse.com



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