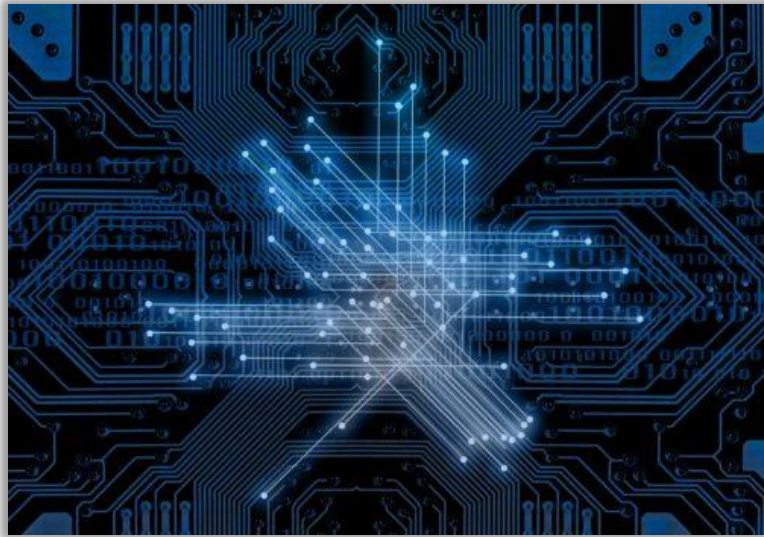


METABUILDING 1st GROW / HARVEST CALL : MEET THE WINNERS !



Unleashing the Innovation Potential of EU Construction SMEs

Construction + ICT Challenge



- Monitoring and managing building energy / comfort / health performance in buildings
- New BIM and digital tools for SMEs



METABUILDING Project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 873964. The sole responsibility for the content of this document lies entirely with the author's view. The European Commission and the European Innovation Council and SME Executive Agency (EISMEA) are not responsible for any use that may be made of the information it contains.

METABUILDING 1st GROW / HARVEST CALL : MEET THE WINNERS !

NEMESIS

A digital tool for the estimation of a building's Smart Readiness Indicator (SRI) using information from BIM tools, combined with Building Management Systems (BMS)

SECTORS INVOLVED : Construction · Digital Industry



"Energy@Work is an innovative Italian SME active in the development of IoT and AI-based technologies for energy efficiency and smart buildings. With Nemesis we aim to integrate SRI and best practices for building energy efficiency with BMS providing to the building stakeholders support to improve SRI by maximising as much as possible smart readiness of building together with energy efficiency in consideration of the user comfort."

Giuseppe Mastandrea
Energy@Work · R&D Leader



"IsZEB focuses on Smart and Zero Energy Buildings, providing innovative solutions for the construction sector through the development of methodologies and applications that leverage existing and new technologies / methodologies such as EPCs and the SRI methodology. An important asset of IsZEB is the SmartHome, an nZEB Building that will be used as a test bed facility."

Asterios Tzirgas
IsZEB · DIH Coordinator

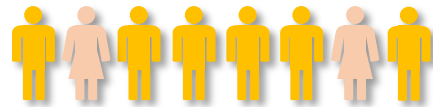


The Consortium

Companies Presentation

Involved in integration of Investment Planning and BMS Extension

E@W is an innovative Italian SME, in the form of a non-profit cooperative company, active in the development of ICT and Artificial Intelligence based technologies for smart manufacturing and energy efficiency in buildings and energy grids. E@W usually **leads exploitation and market uptake.**



R&D unit composed by 8 researchers

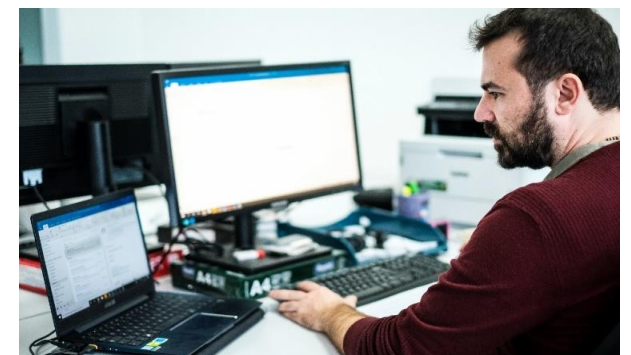
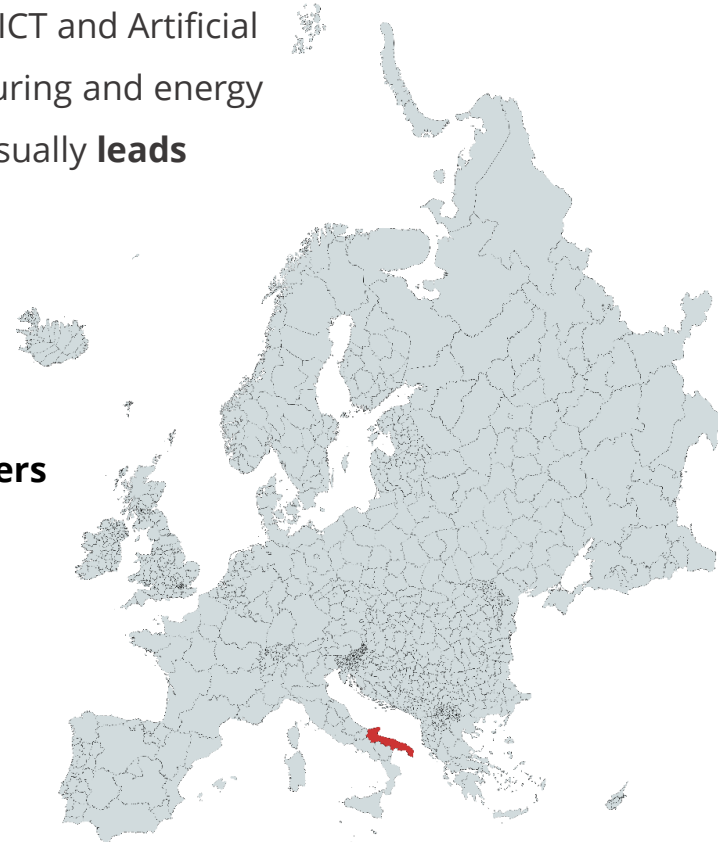


Ongoing

7 Horizon 2020 projects

1 Life 2027 project

4 pilot experimentation under H2020 project OCs



Involved in integration of SRI calculator and BMS integration on pilot site

IsZEB (Intelligent Solutions for Zero & Positive Energy Buildings)

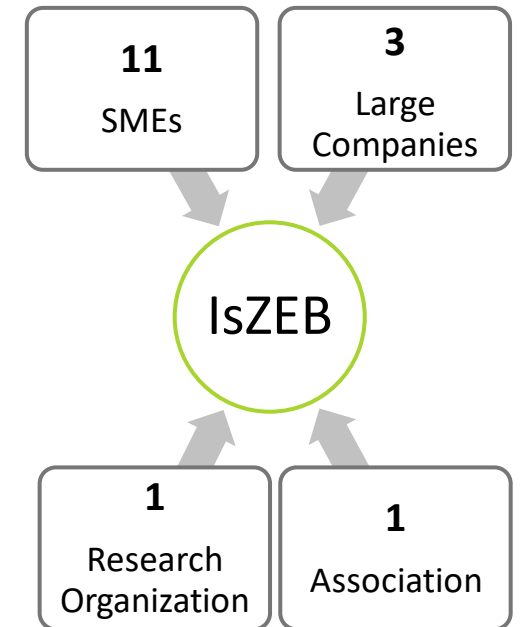
is a newly found Cluster that incorporates the leading Greek companies and authorities in the field of Smart and Energy Efficient Buildings.

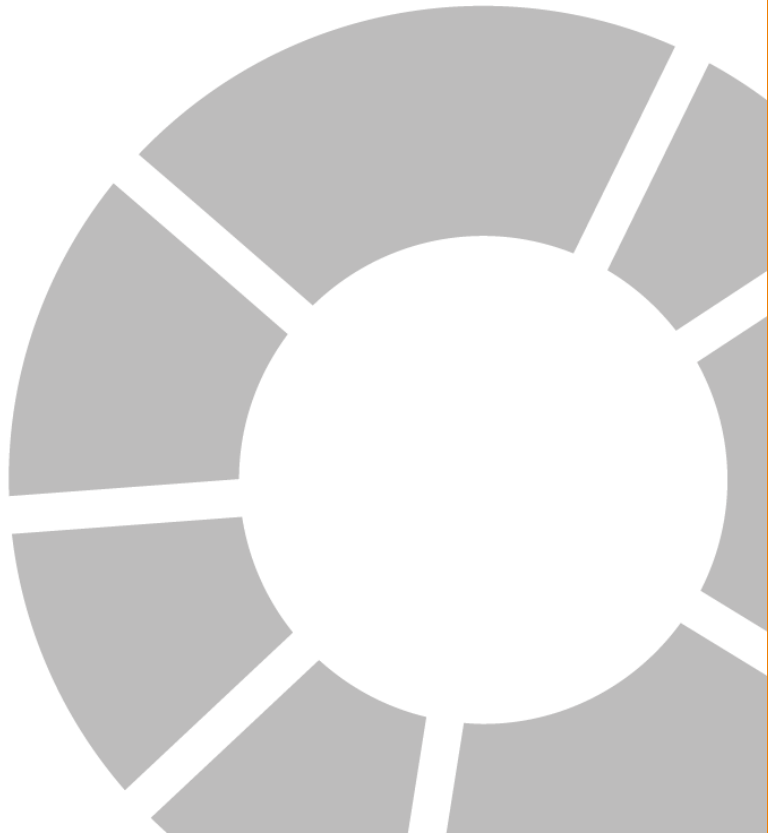
IsZEB aims to explore in depth how **smartness** (i.e. SRI) and **energy efficiency** can be combined through a unified label.



Ongoing Projects:

- **9 EU-funded** Research Projects
- **1** Research Program funded by the **Region of Central Macedonia**
- **3 Internal** Research Projects, including a novel energy performance assessment methodology

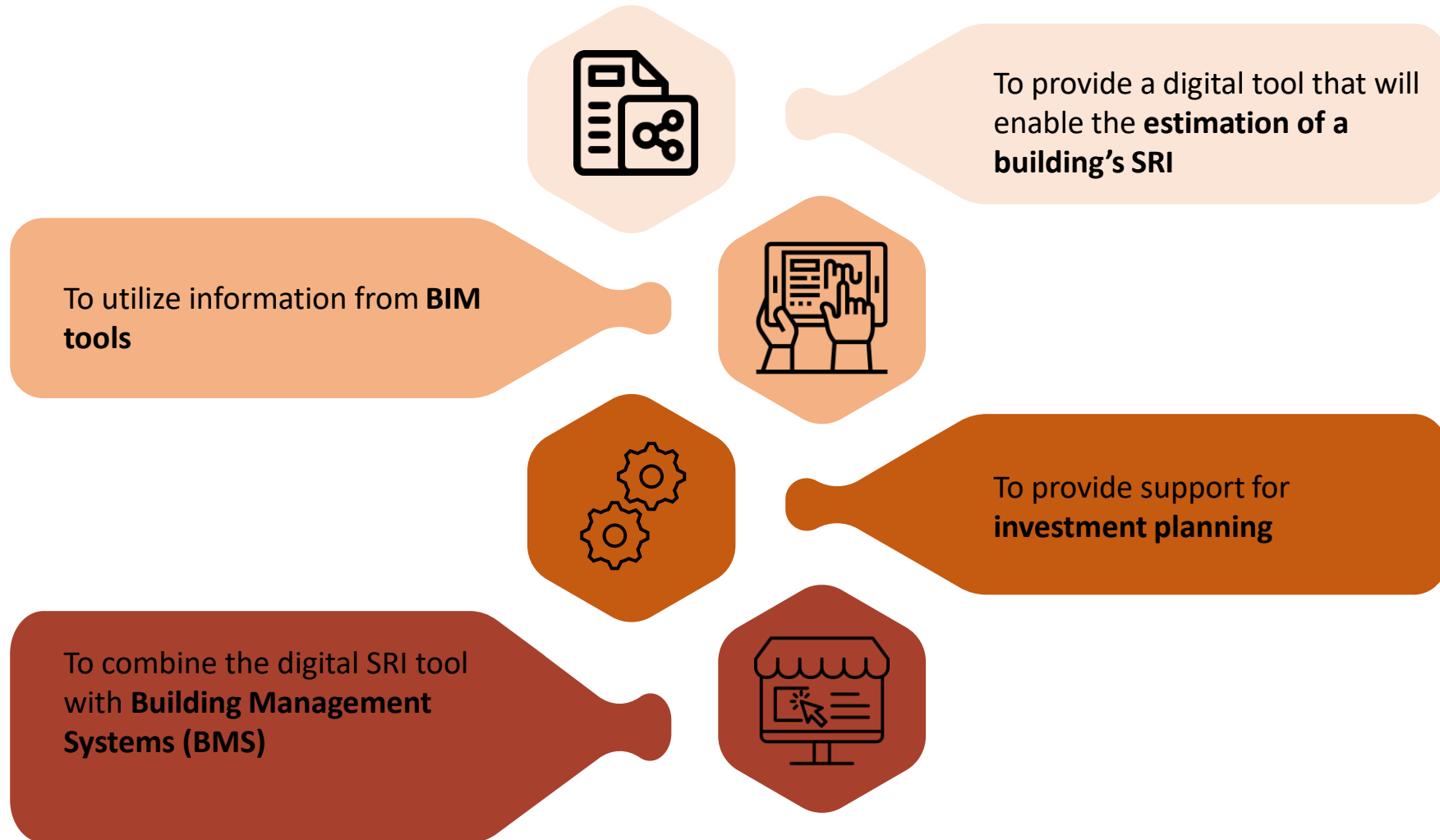




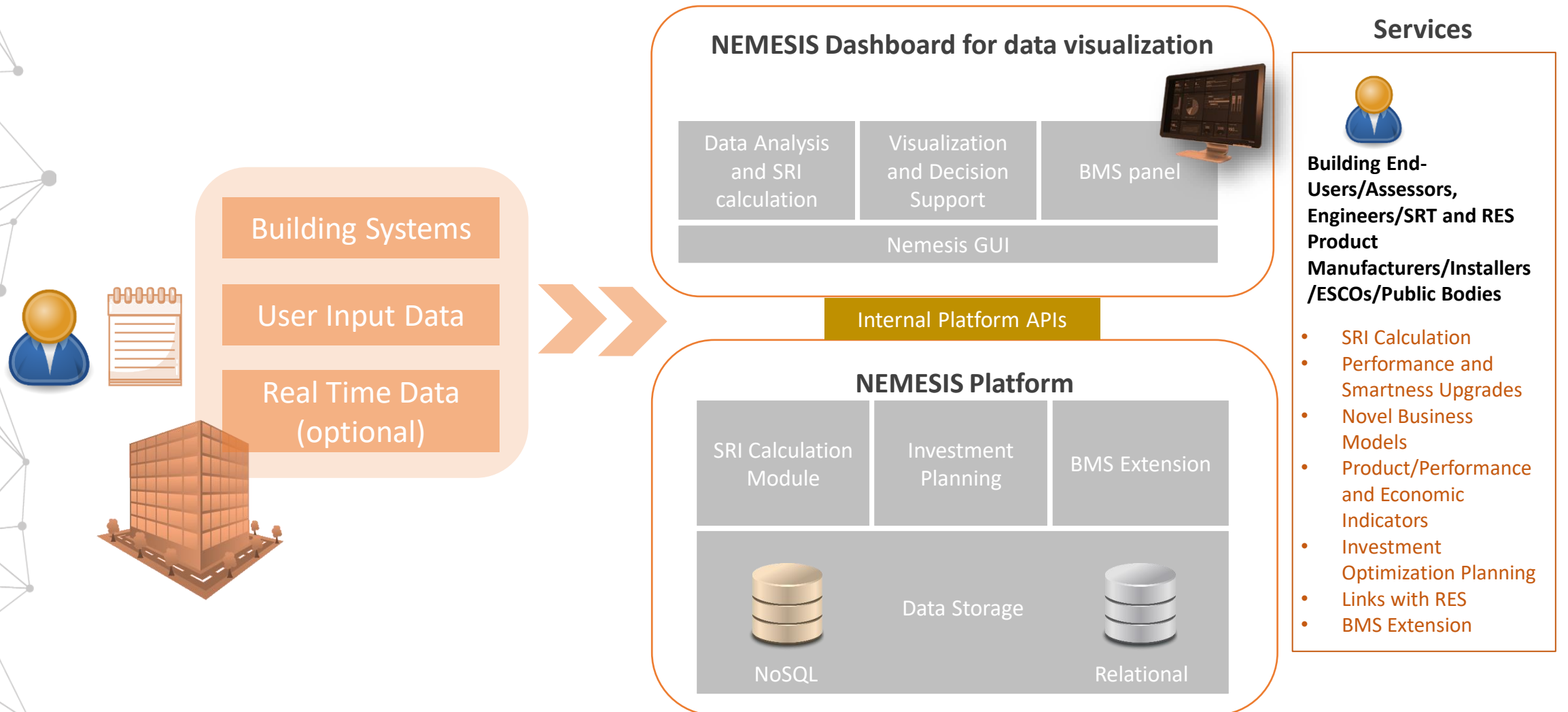
The NEMESIS Project

NEMESIS has received funding in the framework of the METABUILDING project funded through the H2020-INNOVATION programme directed by the European Innovation Council and SMEs Executive Agency (EISMEA)

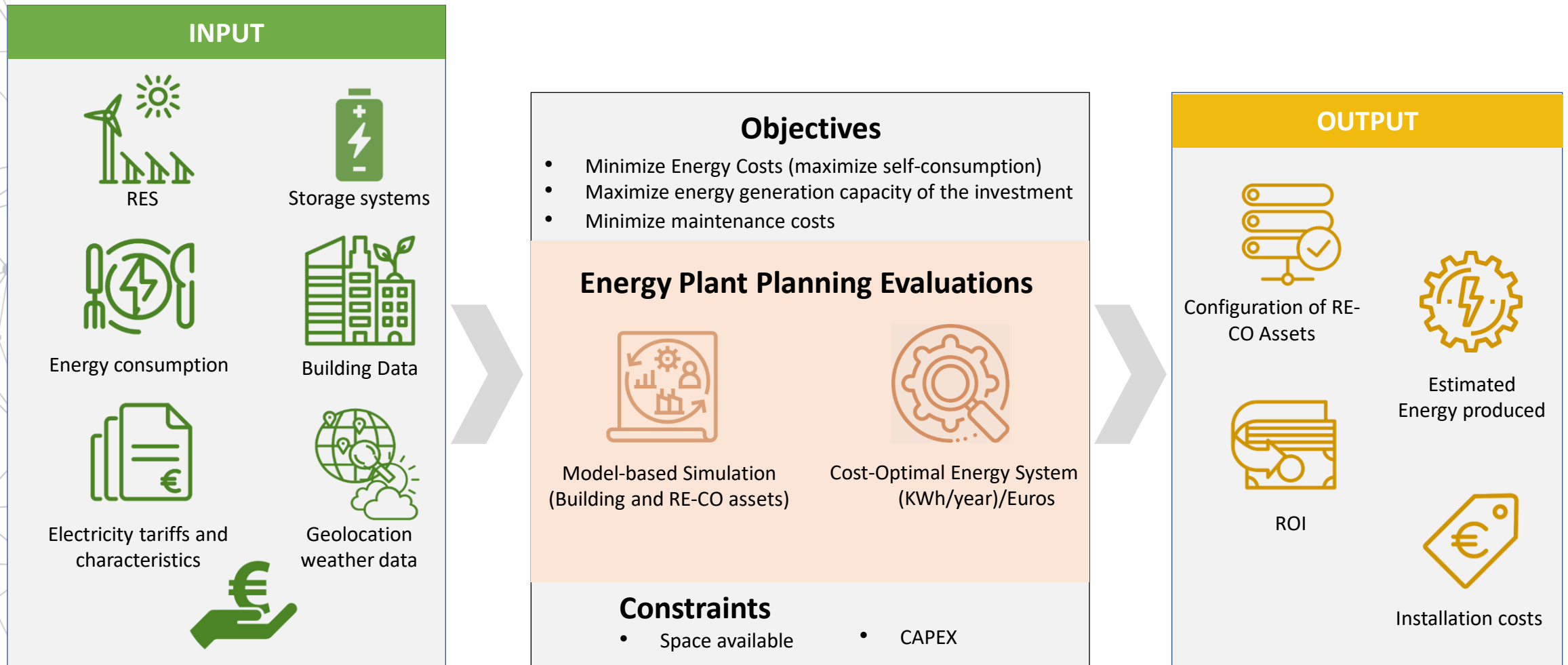
Objectives



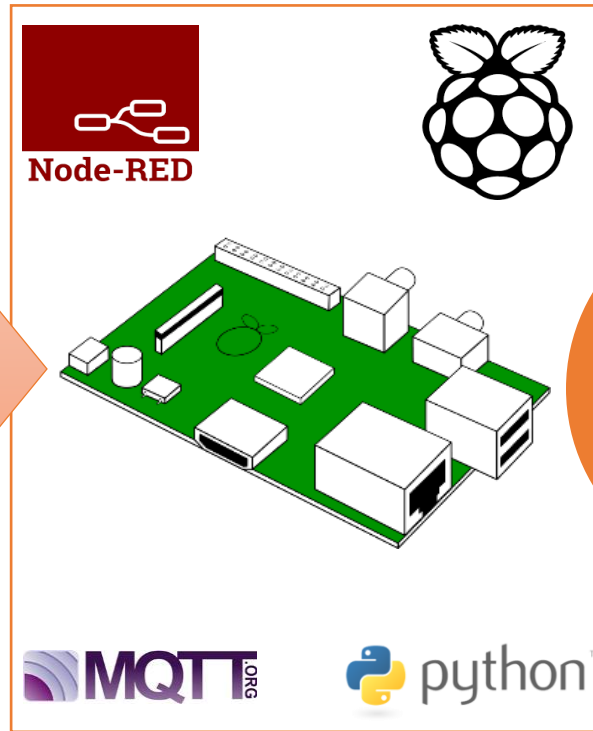
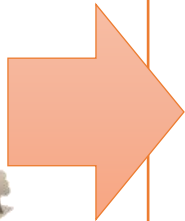
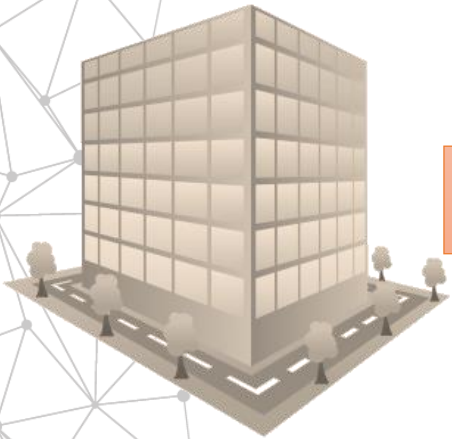
Conceptual Architecture



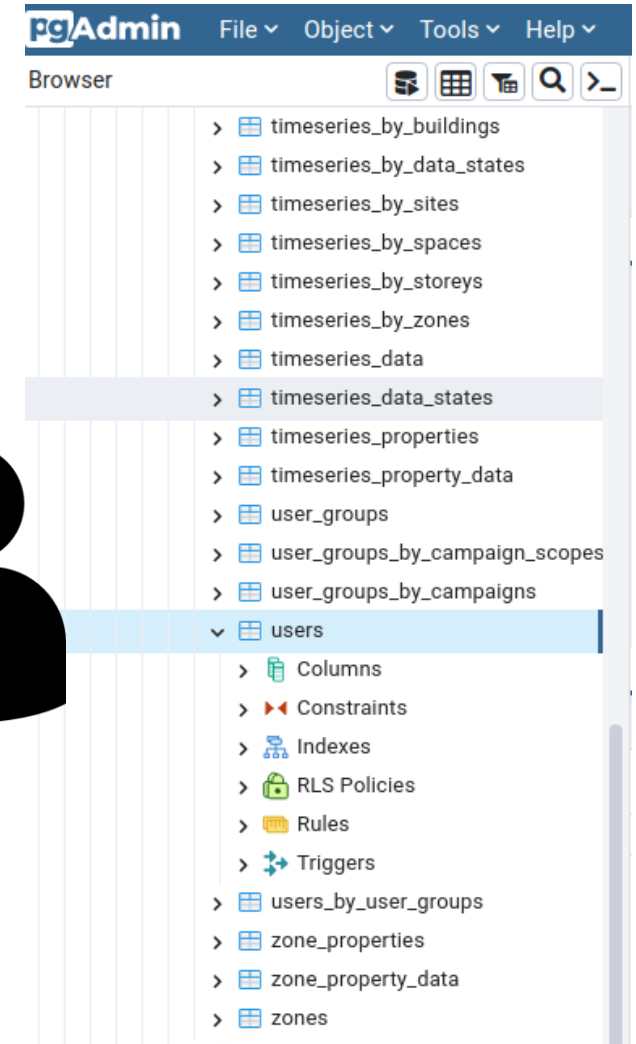
Investment Planning Module



BMS Extension



BEMServer
APIs



SRI calculator

IsZEB develops a novel computational tool to perform **SRI** assessments for buildings, according to the **SRI Methodology**

Heat emission control

<input type="text" value="50"/>	%	<input checked="" type="checkbox"/>	FL0 - No automatic control
<input type="text" value="0"/>	%	<input type="checkbox"/>	FL1 - Central automatic control (e.g. central thermostat)
<input type="text" value="0"/>	%	<input type="checkbox"/>	FL2 - Individual room control (e.g. thermostatic valves, or electronic controller)
<input type="text" value="50"/>	%	<input checked="" type="checkbox"/>	FL3 - Individual room control with communication between controllers and to BACS
<input type="text" value="0"/>	%	<input type="checkbox"/>	FL4 - Individual room control with communication and occupancy detection

Domain Scores

Heating system	38,75%	<div style="width: 38.75%;"></div>
Cooling system	39,85%	<div style="width: 39.85%;"></div>
Domestic Hot Water	49,07%	<div style="width: 49.07%;"></div>
Controlled ventilation	0,00%	<div style="width: 0%;"></div>
Lighting	61,32%	<div style="width: 61.32%;"></div>
Electricity: renewables & storage	20,75%	<div style="width: 20.75%;"></div>
Electric Vehicle Charging	13,11%	<div style="width: 13.11%;"></div>
Dynamic Envelope	11,10%	<div style="width: 11.10%;"></div>
Monitoring & Control	12,15%	<div style="width: 12.15%;"></div>

- The assessor chooses the proper Functionality Level for each technical domain service.
- The Catalogue of services is automatically updated based on the Mechanical, Electrical and Plumbing (MEP) systems present in the building.
- Technical Domains and Impact Criteria scores calculation

Experiment Status and Validation KPIs

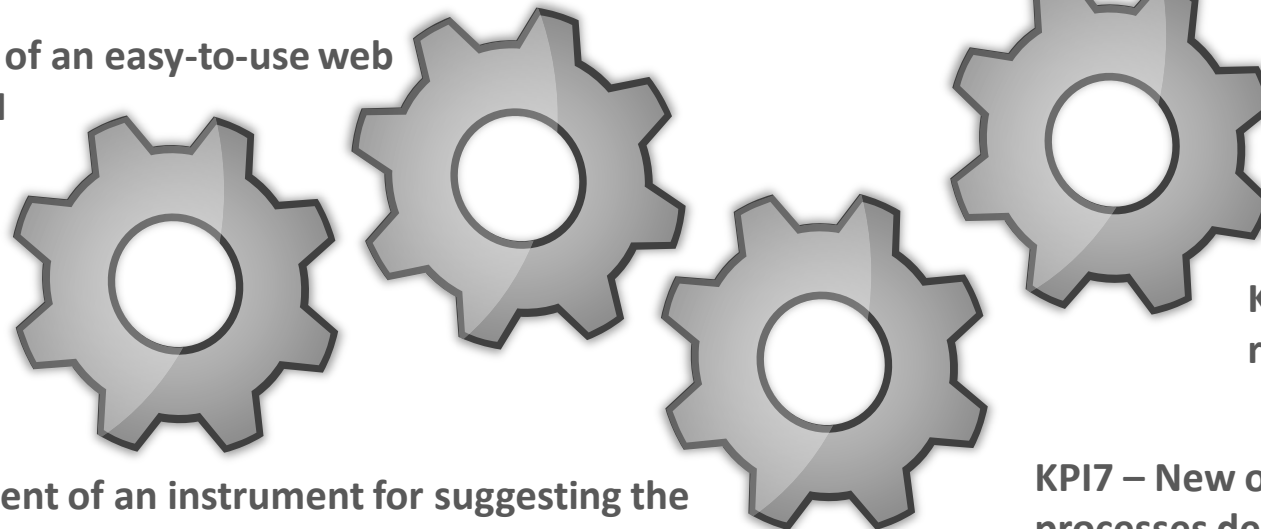
		M1	M2	M3	M4	M5	M6
A1	Elicitation of User & System requirements & Framework definition	█	█				
A2	Delivery of the Tools (Digital SRI tool & extensions for BMS)		█	█	█	█	
A3	Deployment and validation to IsZEB Smart Home / Italian testbed				█	█	█

KPI1 – Number of the use cases considered: 3

KPI4 – Utilization of open interfaces enabling compliance with most BMS

KPI2 – Development of an easy-to-use web tool for assessing SRI

KPI5 – Number of countries reached by SRI assessments during the project: 2



KPI6 – Deployment and validation in relevant environment

KPI3 – Development of an instrument for suggesting the best combination of RES installation and intervention according to the expected investment costs

KPI7 – New or improved products or processes developed: 2

Benefits for Stakeholders

Coupling of the SRI calculation tool with BMS



Automated procedure for SRI assessments

Recommendations for optimising building performance and smartness



Enhanced SRI estimation, taking into account information stemming from BIM tools



Possibility to combine SRI with the EPC to improve the energy performance and smartness of existing buildings



Raise awareness about the benefits of smart buildings



Relevance of METABUILDING for the Project

METABUILDING has enabled the combination of new concepts through the cooperation of teams with different expertise from different countries

We are METABUILDERS because...

- *We are contributing to the digitalization of the building construction sector*
- *We develop new services and approaches that combine smartness assessment with Building Management, energy efficiency and production systems in the construction sector*



Thank you for your kind attention

Project :

www.metabuilding-project.eu



Platform :

www.metabuilding.com



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