

PLURAL **project**

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<https://www.plural-renovation.eu/>

Introduction



Context

Design, validate and demonstrate a palette of versatile, adaptable, scalable, off-site prefabricated “Plug-and-play” solutions that take into account User needs named Plug-and-Use” kits



Goals

Optimize the PnU performance for different building types, climates and socio-economic conditions



Approach

Select and incorporate renewable energy technologies, in prefabricated façade components



Demonstration



- 3 residential demos in **Greece, Spain, Czech Republic**
- 3 “virtual” demos in **Switzerland, Germany, Sweden**

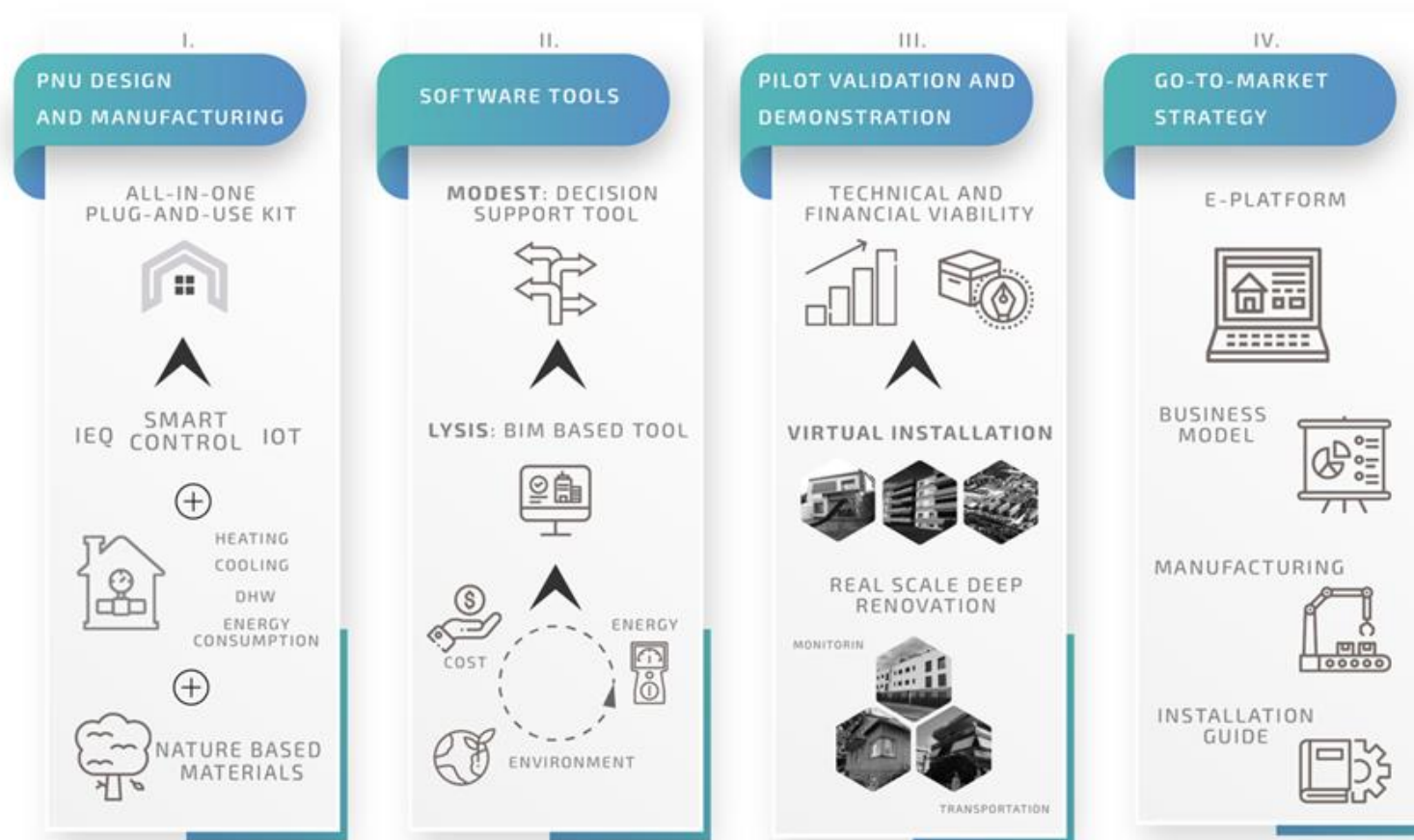


Team



Pillars

Fast and adaptable deep renovation towards NZEB



Relevant Results

2021

2022

2023

2024

Definitions- Requirements-KPIs

- Technical status and requirements for all cases defined
- Monitoring methodology defined

Optimization of PnU kits

- Completion of component optimization and assembly of PnU prototypes
- Completion of testing and simulation campaigns

Implementation of monitoring platforms, DST

- Monitoring systems installed, monitoring protocols and procedures implemented

Validation

- Proof of NZEB status for renovated buildings
- Manufacturing/installation procedures validated
- Market uptake/business models



Near zero energy
consumption



Cost-
effectiveness



Fast renovation



Environmentally-
friendlier/
Flexibility



Barriers Challenges



Barrier 01.

Market competitiveness:
Solutions appeal only to large residential estates, big contractors;

Challenge 01.

New business models:
Integrate value chain; Allow entrance of new players; demonstrate that prefabrication does not set additional barriers (quality, cost, time, environment)

Barrier 02.

Technology compatibility:
RES to suit individual PnP solutions

Challenge 02.

Assessment:
IT, design tools for flexible integration, advanced manufacturing technologies coupling RES generation, storage, control; demo sites