This project has received funding from the European Union's Horizon 2020 Programme for Research and Innovation under Grant Agreement no 847053

SUSTAINABLE PLACES 2021
Sep. 28 - Oct. 1, 2021 | Rome, Italy

StepUP

Plug and Play Market Solutions for Renovation

28th September 2021

Renovation Cases and Tools **Part I** – Paper Session

Anna Batallé | Fundació Eurecat
anna.batalle@eurecat.org

Giulia Barbano | Integrated Environmental Solutions LtD
giulia.Barbano@iesve.com

Michele Scotton | UniSmart
michele.scotton@unismart.it

1. StepUP

2. Plug and Play Technologies

3. StepUp Principles

4. Protocol Specifications

5. Technology Provider Cluster

1

StepUP
Solutions and technologies for the uptake of deep energy renovation processes

Objectives

Make renovation more attractive and reliable with a new methodology based on near-real time data intelligence

Reduce the performance gap to 10% by developing an integrated life-cycle software platform

Optimise renovation investments by developing innovative financial models

Minimise time on site to 40% of current renovation onsite work by creating a market-ready modular renovation package of Plug & Play technologies

Accelerate the renovation market via an interoperability protocol for renovation solutions, enabling compatibility of StepUP with third-party market products

StepUP Solutions

1. **Plug & Play Envelope System**
   Pre-assembled envelope panel integrating windows and provisions for the technical systems

2. **Plug & Play SmartHeat solution**
   Groundbreaking technology for flexible consumption of thermal energy monitored and optimised through StepUP data tools

3. **Innovative financing tools for deep renovation**
   Energy Performance Contracts (EPCs) based on co-investment, continuous performance measurement and management

4. **Software tools and platform for data collection**
   Data intelligence solutions to generate a sound base for the continuous measurement and verification of the renovation

StepUP Solutions

1. **Plug & Play Envelope System**
   Pre-assembled envelope panel integrating windows and provisions for the technical systems

2. **Plug & Play SmartHeat solution**
   Groundbreaking technology for flexible consumption of thermal energy monitored and optimised through StepUP data tools

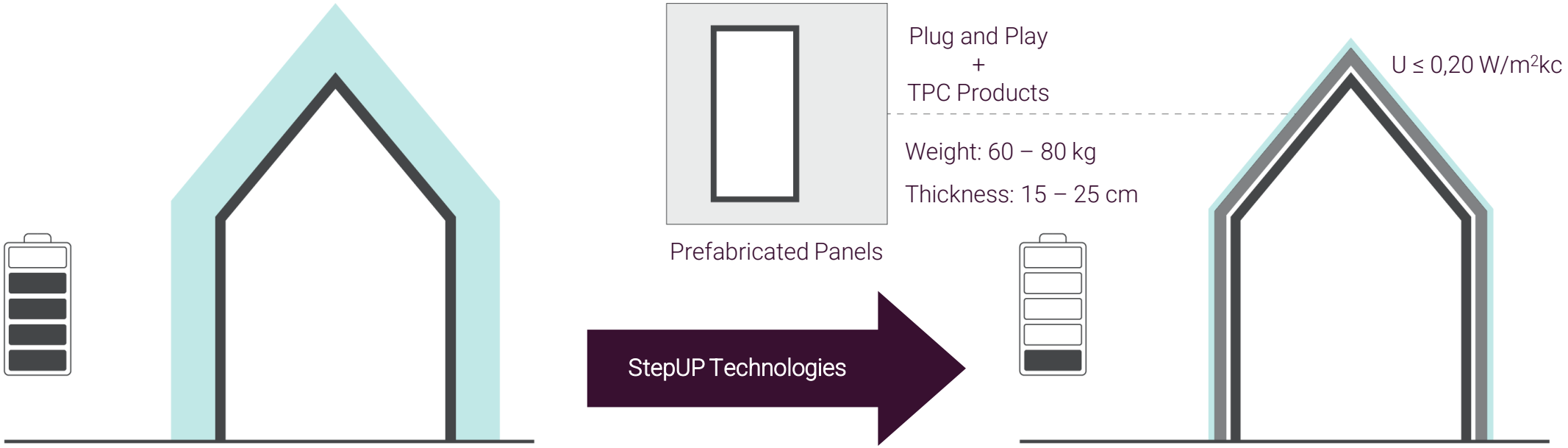
3. **Innovative financing tools for deep renovation**
   Energy Performance Contracts (EPCs) based on co-investment, continuous performance measurement and management

4. **Software tools and platform for data collection**
   Data intelligence solutions to generate a sound base for the continuous measurement and verification of the renovation

2

Step UP Technologies

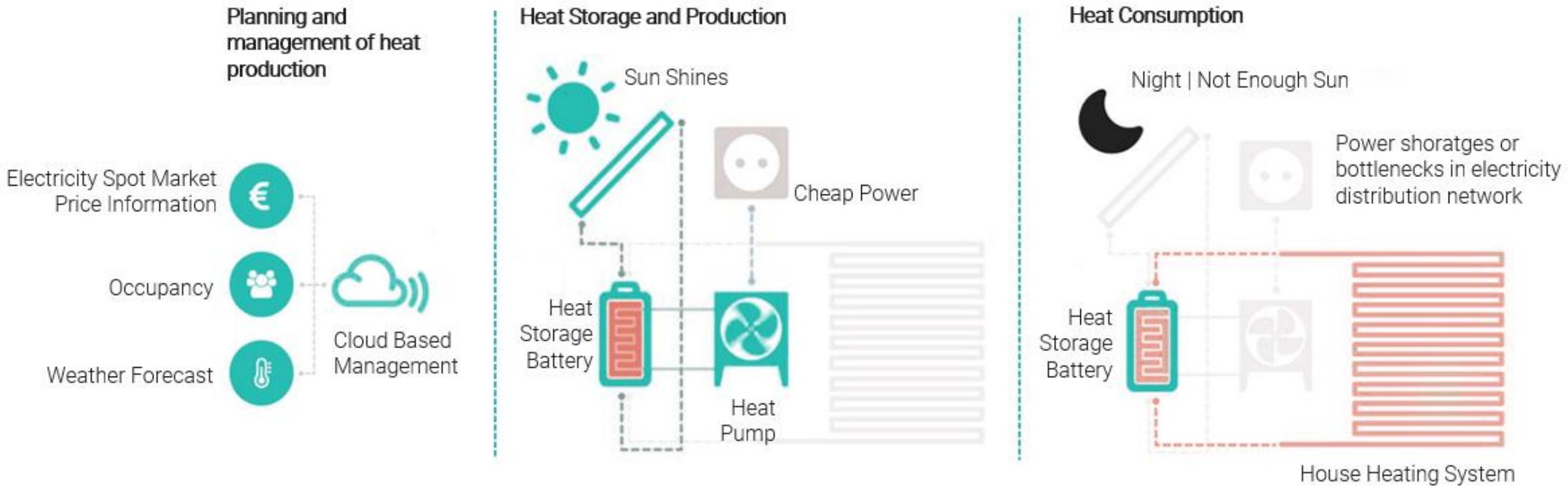
StepUP Technologies



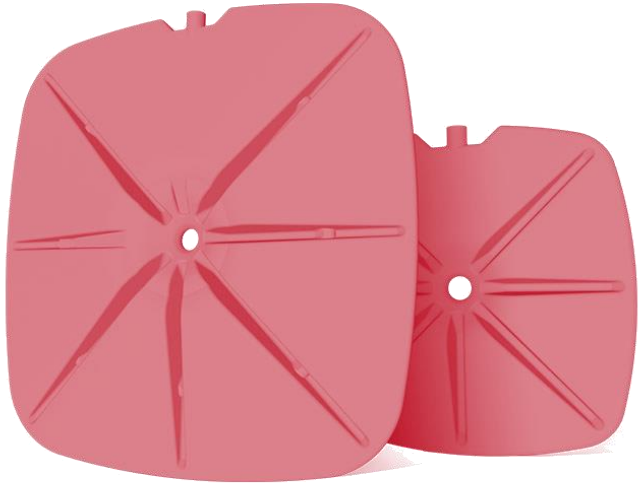
2. StepUp Technologies

Plug and Play Envelope

2. StepUp Technologies

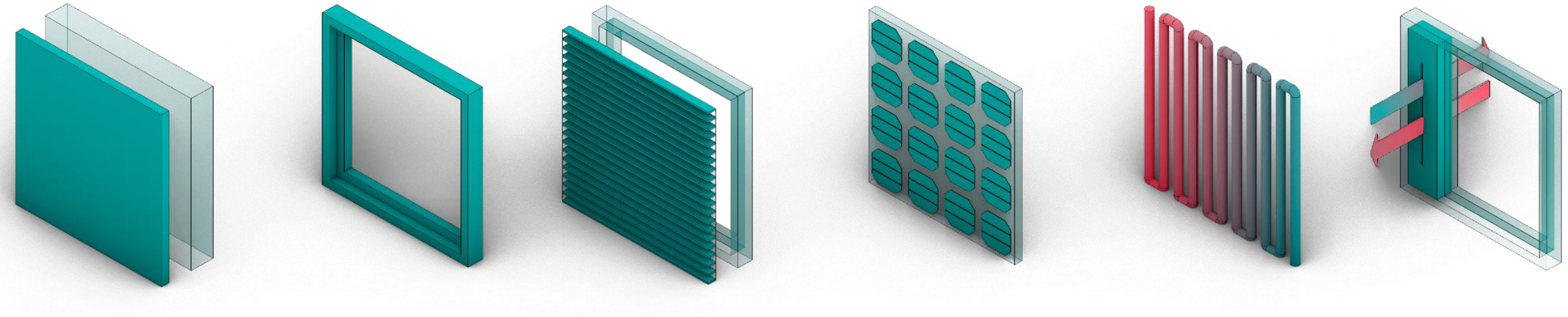


2. StepUp Technologies



2. StepUp Technologies

Third Party Technologies



External Layer

High Performance Windows

Solar Protection | Sun Shading

PV | ST Panels

Heating | Cooling Systems

Demand Controlled Ventilation

TPC Passive Technologies

TPC Active Technologies

2. StepUp Technologies

3

Step UP Principles

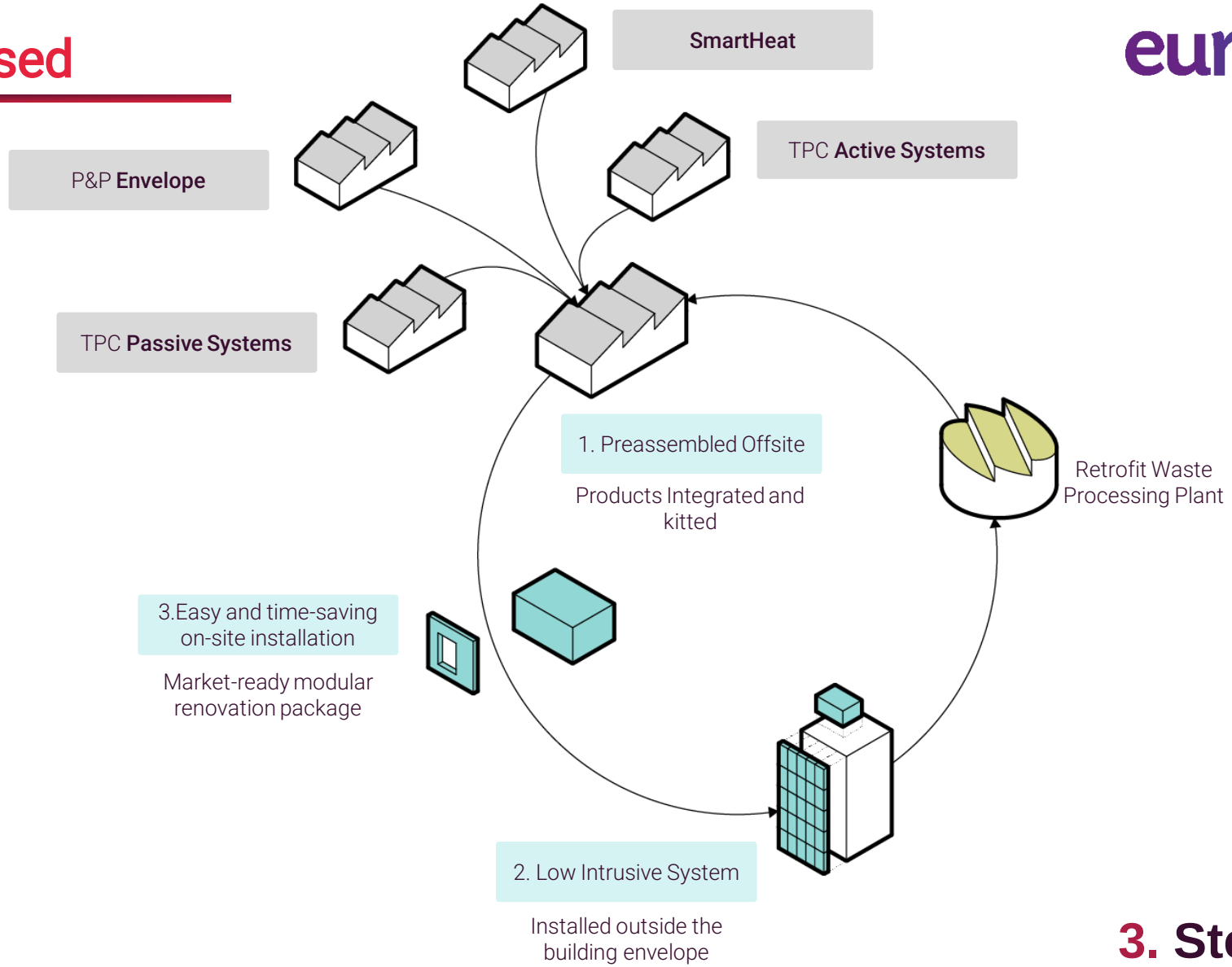
StepUP Principles

Industrialised [P1]	Customised [P2]	Compatible and Interoperable [P3]	Circularity [P4]	Open Exchange Information [P5]	Certification and Regulation [P6]
Preassembled Offsite	Adaptable to different architecture geometries	P&P Envelop and Smart Heat	Low Embodied Energy	Technical Sheets	EOTA
Low Intrusive System	Adaptable to different architectural aesthetics	P&P envelope and TPC	Lean Philosophy	2D | 3D drawings	CE Marking
Easy and time-saving on-site installation		SmartHeat and TPC	Design For Disassembly	BIM Objects	Local Standards
		SmartHeat and District Heating Systems			

[C] > Components
[S] > Solutions

3. StepUp Principles

[P1] Industrialised



3. StepUp Principles

[P2] Customised

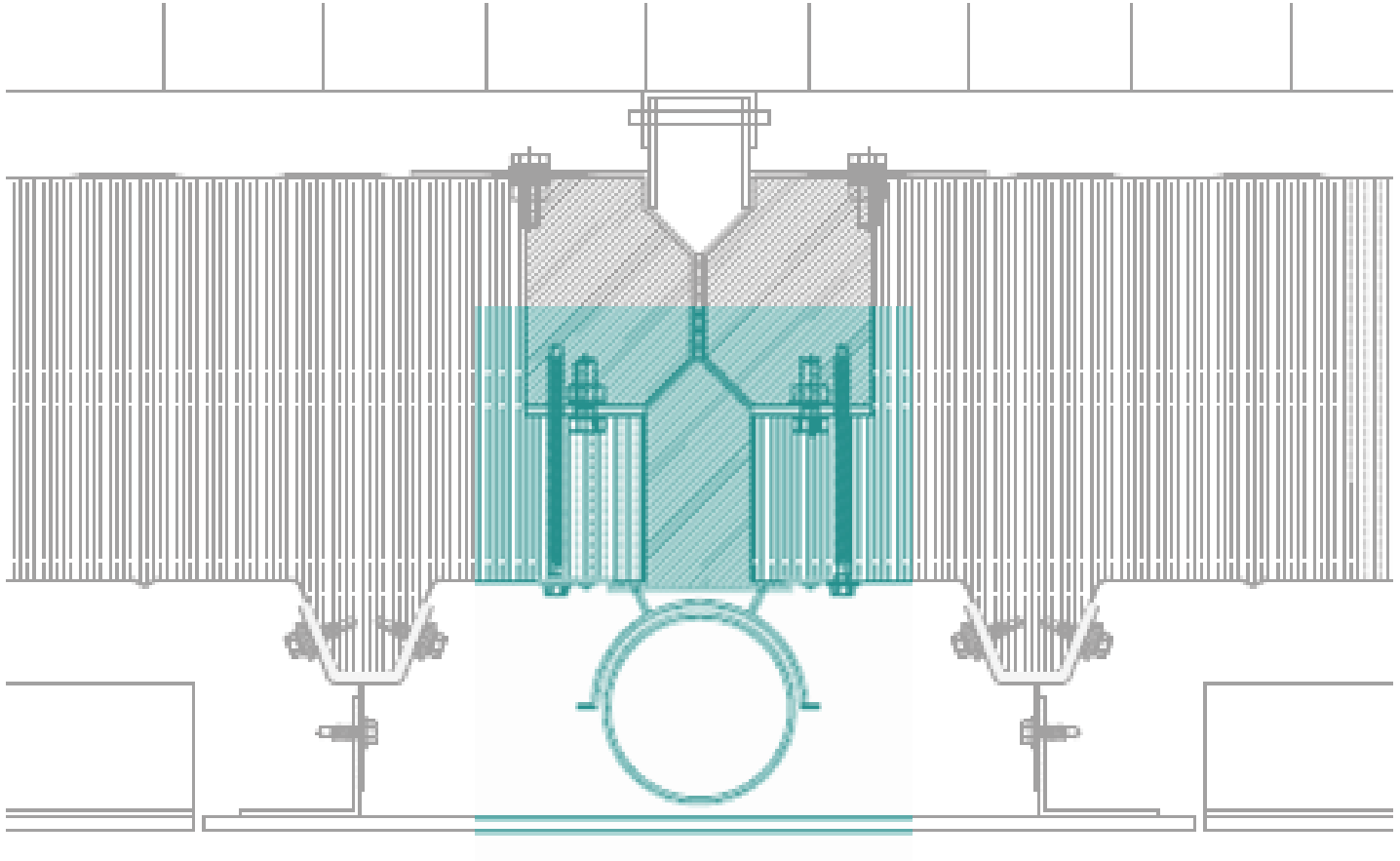
Adaptable to different architecture geometries

Adaptable to different architectural aesthetics

3. StepUp Principles

[P3] Compatible and Interoperable

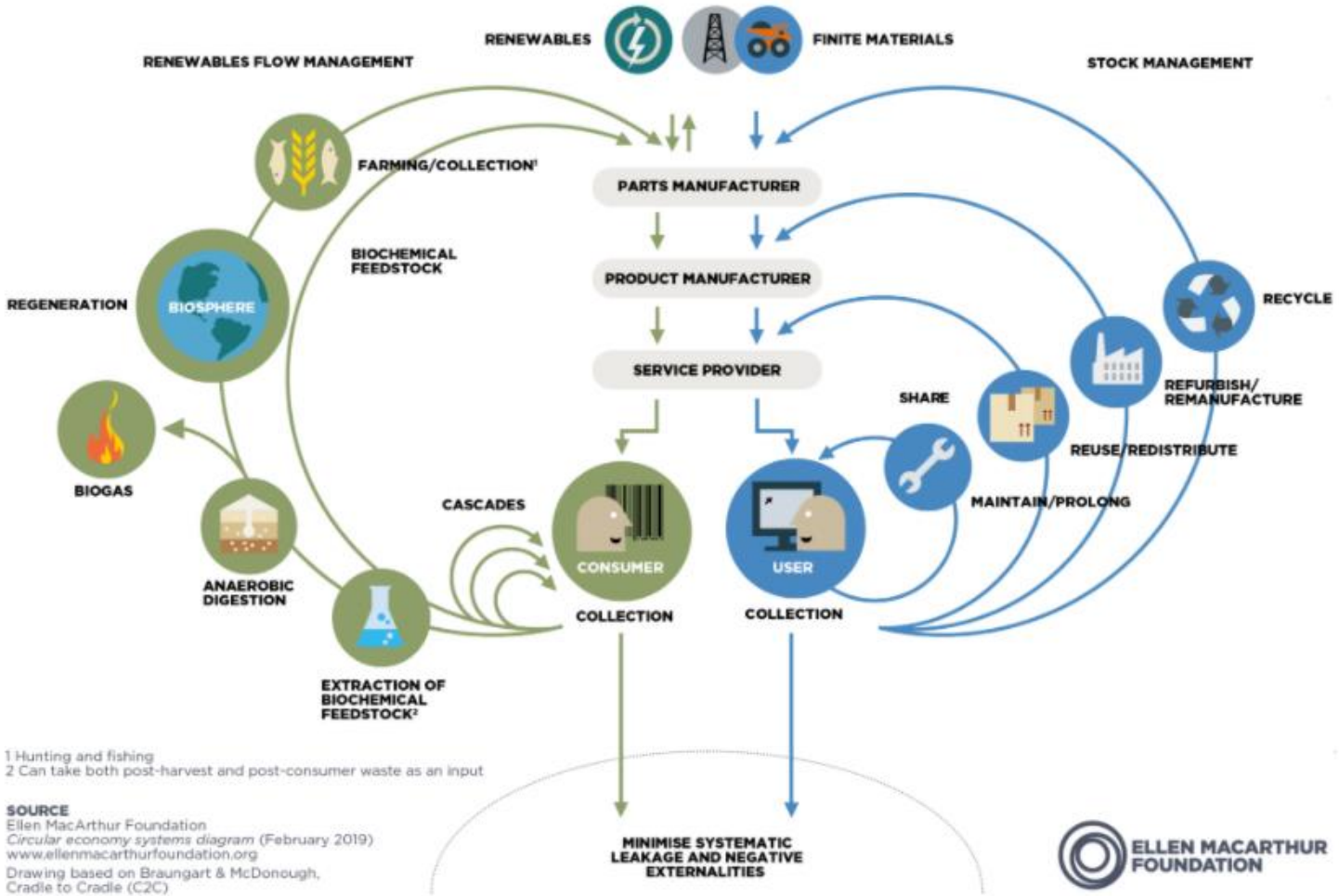
- P&P Envelop and Smart Heat
- P&P envelope and TPC
- SmartHeat and TPC
- SmartHeat and District Heating Systems



3. StepUp Principles

[P4] Circularity

- Low Embodied Energy
- Lean Philosophy
- Design For Disassembly



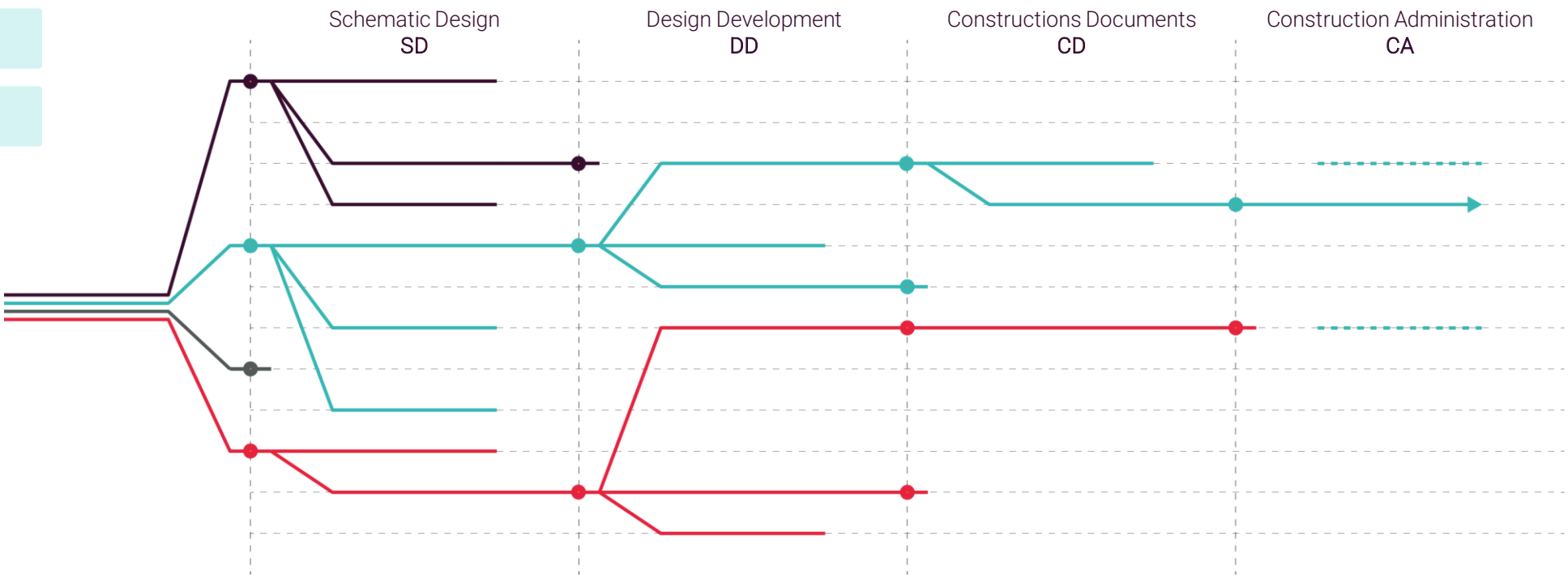
3. StepUp Principles

[P5] Open Exchange Information

Technical Sheets

2D | 3D drawings

BIM Objects



3. StepUp Principles

[P6] Certifications and Regulations

- European Union Regulations
- Local Standards
- Environmental Certificates

Source: https://socialinnovation.blog.jbs.cam.ac.uk/2015/04/01/one-two-free-how-natural-capital-accounting-can-help-drive-environmental/

	Principles		Requirements		[S]	[C]
[P1] Industrialised	P1.1	Preassembled Offsite	R1.1	Delivery of components in kits	X	X
	P1.2	Low Intrusive System	R1.2	Installed outside the building envelope	X	X
	P1.3	Easy and time-saving on-site installation	R1.3	Modular renovation package	X	
[P2] Customised	P2.1	Adaptable to different architectural geometries	R2.1	Identification of panel configuration	X	
	P2.2	Adaptable to different aesthetical design	R2.2	Aesthetical options	X	X
[P3] Compatibility and Interoperability	P3.1	P&P envelope and SmartHeat	R3.1	Integration of services and sensors within the passive solution	X	X
	P3.2	P&P envelope and TPC	R3.2	Adapt to P&P modularity and characteristics		X
	P3.3	SmartHeat and TPC	R3.3	Physical requirements active TPC components		X
	P3.4	SmartHeat and District Heating System	R3.4	Tailored heating strategies	X	
[P4] Circularity	P4.1	Low Embodied Energy	R4.1	Life Cycle Assessment	X	
	P4.2	Lean Philosophy	R4.2	Lean Construction	X	X
	P4.3	Design for Disassembly	R4.3	Create deconstruction and maintenance plans	X	X
[P5] Open Exchange Information	P5.1	Technical Sheets	R5.1	P&P Technical Sheets		X
	P5.2	2D | 3D drawings	R5.2	Drawing exchange format .dxf		X
	P5.3	BIM objects	R5.3	5D BIM objects	X	X
[P6] Certification and Regulation	P61	EU Regulations	R6.1	CE | Local Regulations		X
	P6.2	Environmental Certificates	R6.2	EPD		X

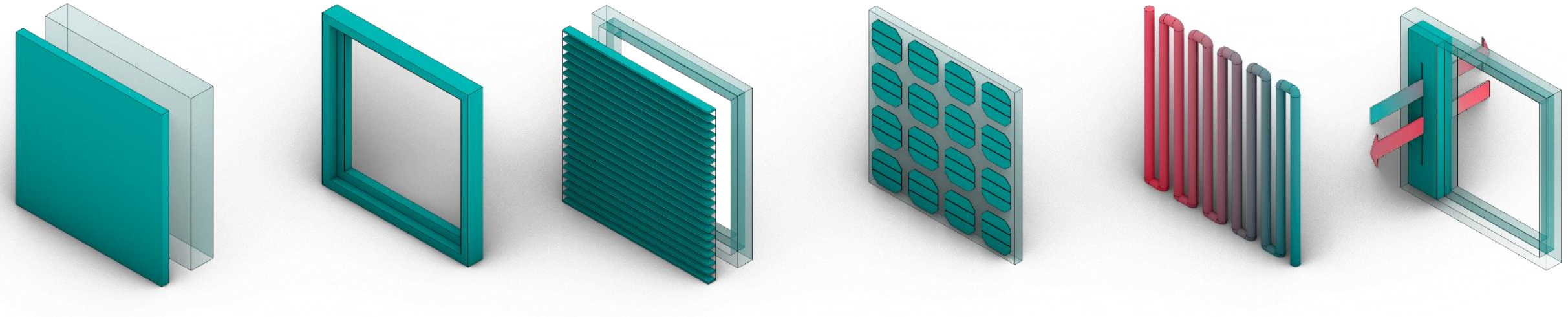
4

Step UP Specifications

Mock-up Isopan Ibérica

Phase I – August 2021

Third Party Technologies



External Layer | High Performance Windows | Solar Protection | Sun Shading | PV | ST Panels | Heating | Cooling Systems | Demand Controlled Ventilation

TPC Passive Technologies

TPC Active Technologies

4. StepUp Specifications

External Layer	High Performance Windows	Solar Protection | Sun Shading	PV | ST Panels	Heating | Cooling Systems	Demand Controlled Ventilation		
6.1	6.2	6.3	6.4	6.5	6.6		
X	X	X	X	X	X	R1.1	Delivery of components in kits
X	X	X	X		X	R1.2	Installed outside the building envelope
X	X	X	X		X	R2.2	Aesthetical options
	X	X	X	X	X	R3.1	Integration of services and sensors within the passive solution
X	X	X	X	X	X	R3.2	Adapt to P&P modularity and characteristics
			X	X		R3.3	Physical requirements active TPC components
				X		R3.4	Tailored heating strategies
X	X	X	X	X	X	R4.2	Lean Construction
X	X	X	X	X	X	R4.3	Create deconstruction and maintenance plans
X	X	X	X	X	X	R5.1	P&P Technical Sheets
X	X	X	X	X	X	R5.2	Drawing exchange format .dxf
X	X	X	X	X	X	R5.3	5D BIM objects
X	X	X	X	X	X	R6.1	CE | Local Regulations
X	X	X	X	X	X	R6.2	Environmental Product Declaration

4. StepUp Principles

5

Technology Provider Cluster

Role (output) and Benefits (input)

O_01
Protocol Feedback

I_01
Networking, Exposure and Visibility

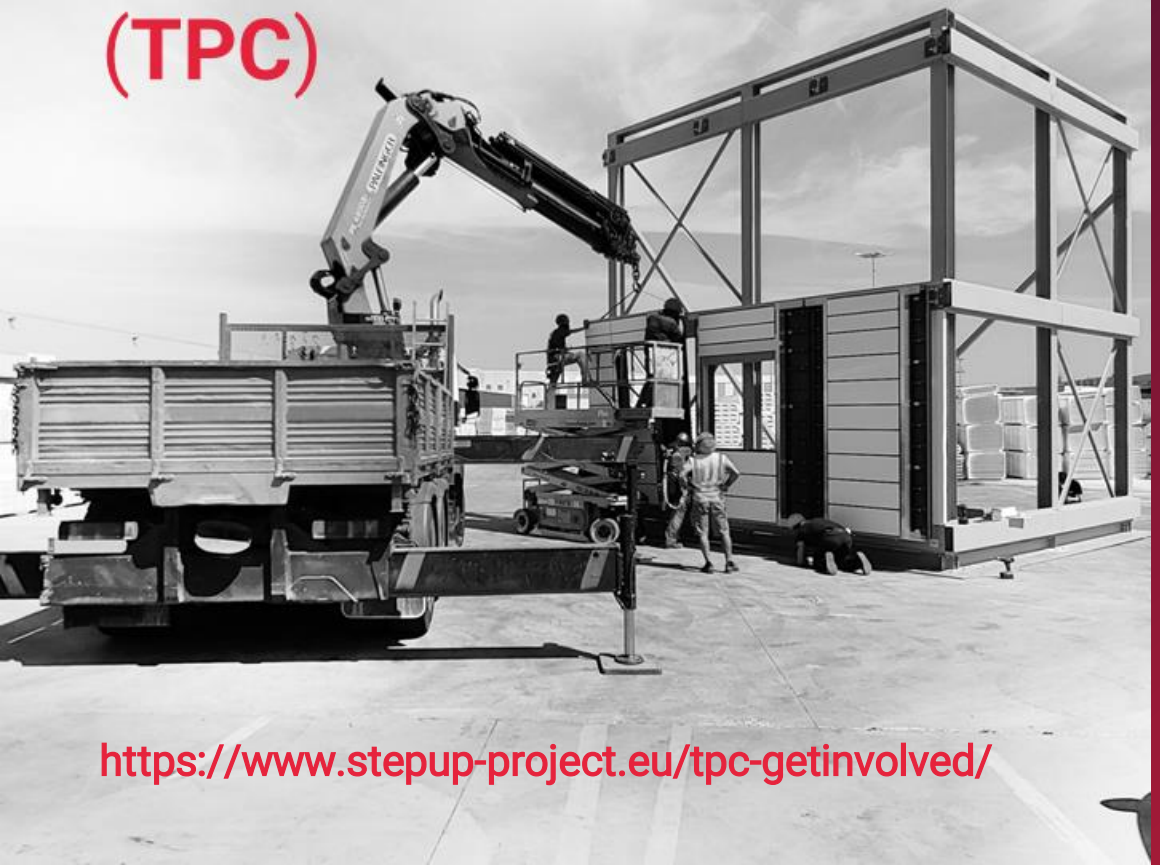
I_02
Product Testing and Verification

I_03
Innovative Environment

5. Technology Provider Cluster

StepUP

for Technology Providers Cluster (TPC)



https://www.stepup-project.eu/tpc-getinvolved/

THANK YOU!

www.stepup-project.eu

@StepUP_EU

StepUP Project

This project has received funding from the EU's Horizon 2020 research and innovation programme under grant agreement No 847053.