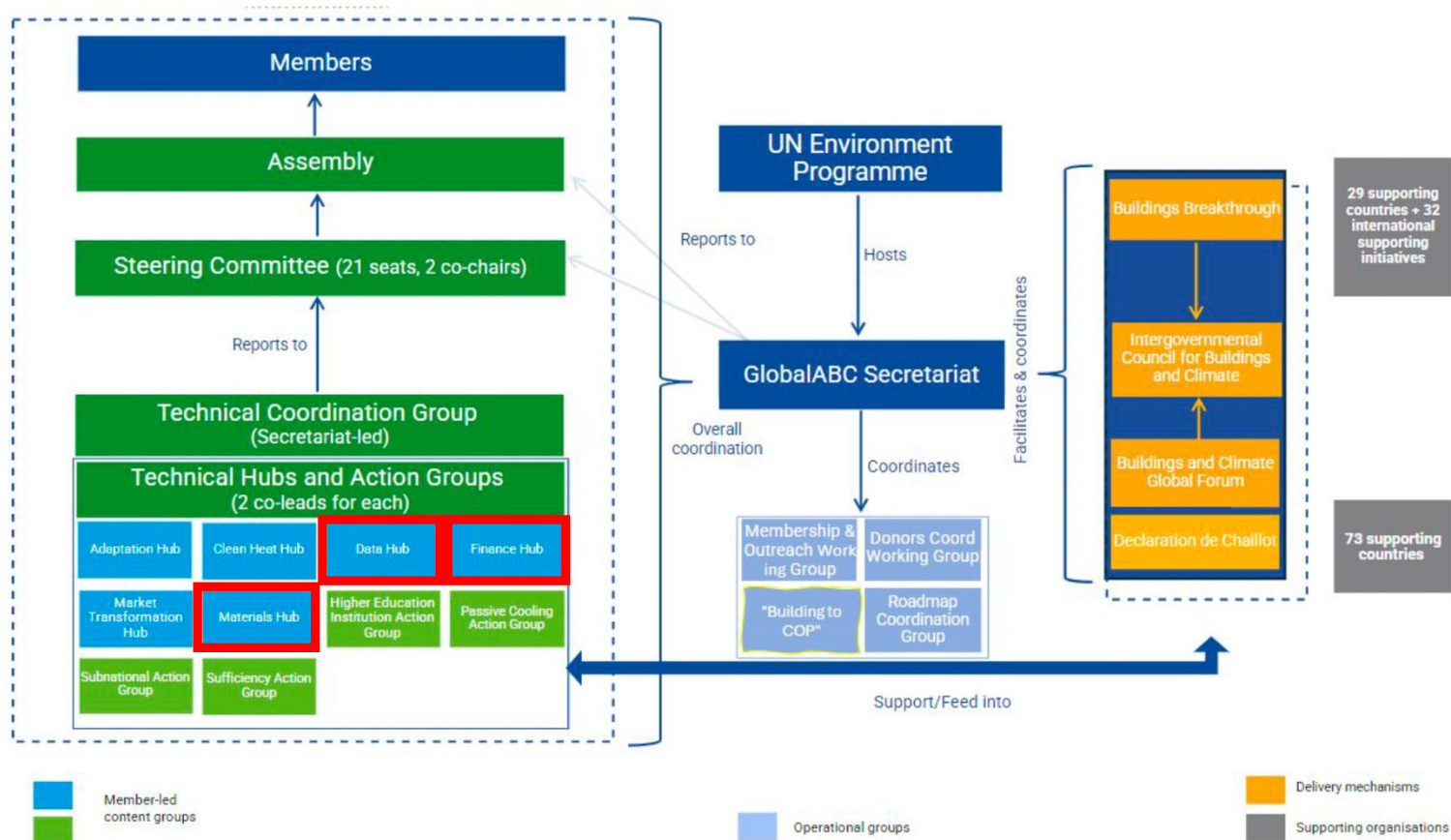


CAPSA as digital support tool for scaling energy efficiency and decarbonisation in buildings

York Ostermeyer, PhD

Professor for Energy and Building Data





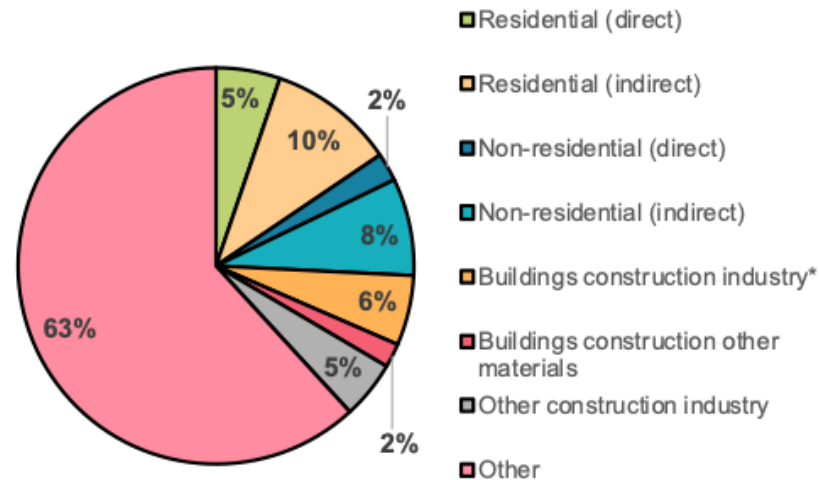
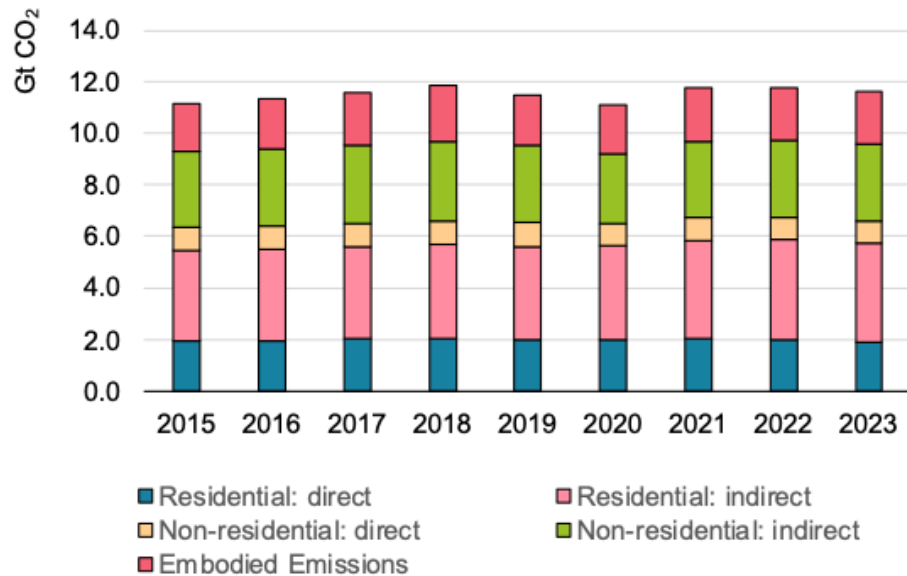
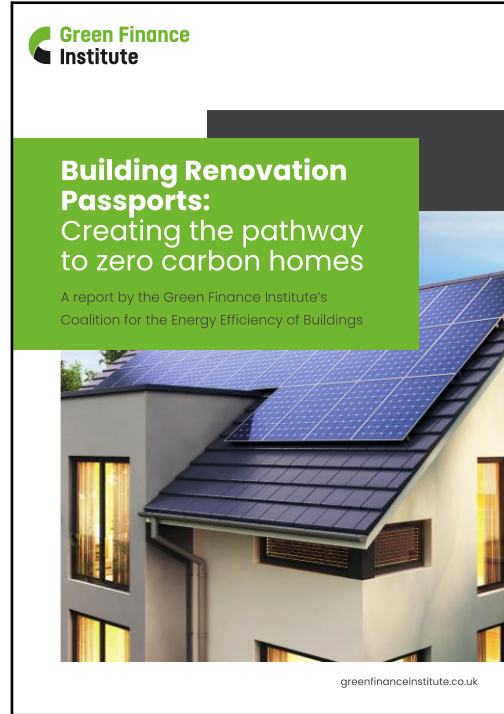
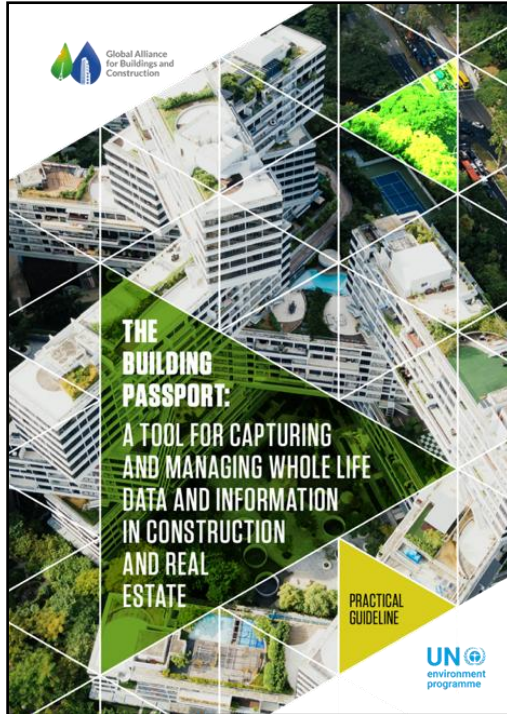


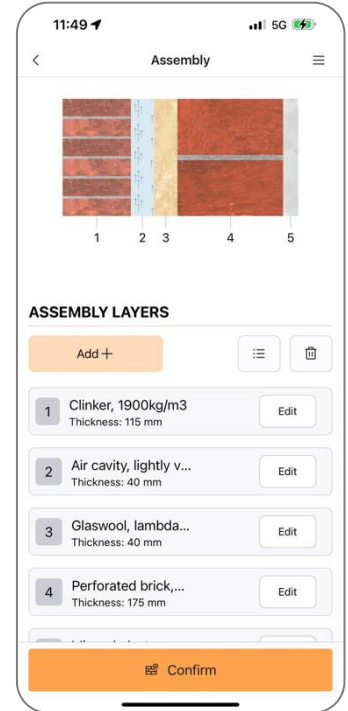
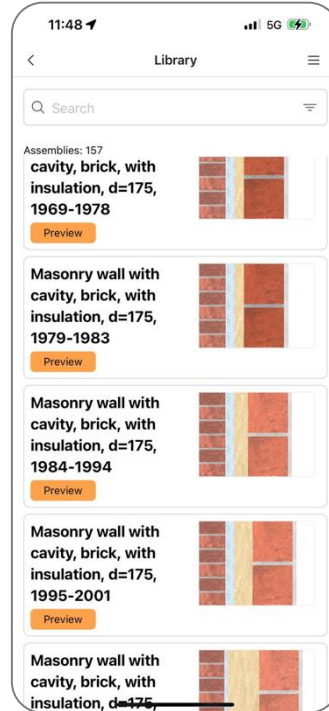
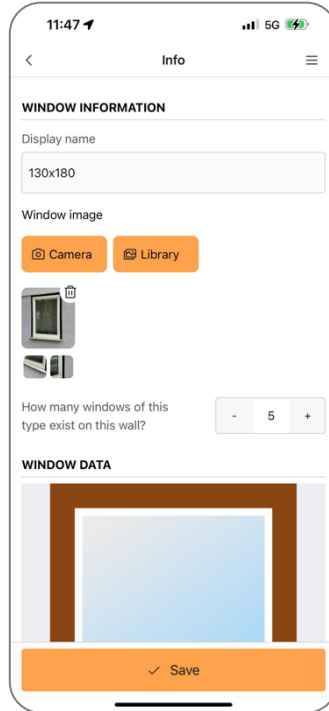
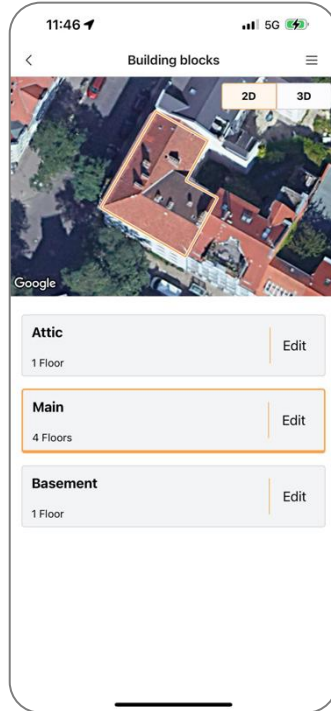
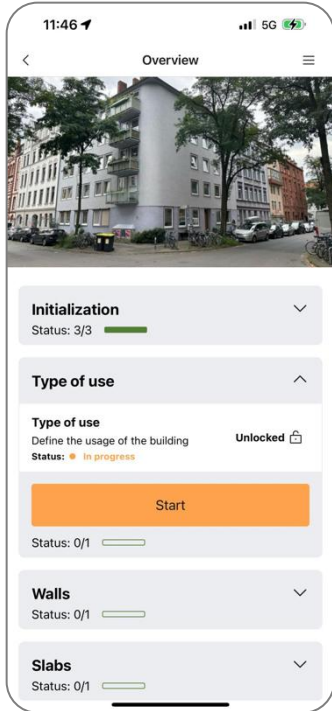
Figure ES.1. CO₂ emissions in buildings 2010–2023 (left) and share of buildings in global energy and process emissions in 2023 (right) (International Energy Agency 2024a)



CAPSA

The intuitive app designed for
efficient building data collection.






[Back](#) [Dashboard](#)

- Building summary
- Building
 - Keller Ost
 - Wohnen Ost
 - Dachgeschoss Ost
 - Keller West
 - Wohnen West
 - Dachgeschoss Ost
- Locations (Coming soon)
- Technical systems
 - Solar Energy (Coming soon)
- Site
 - Intervention playground
 - Energy graph
 - Heat pump analytics
- Decarbonization roadmap
- Photo vault
- Error logs
- Test Graphs
- Big 3D Model

Latest updated

03.12.2025

Wohnen Ost
6005 Heidelberg (KLON) Completed
 Rohrbacher Straße 146, 69126
 Heidelberg, Germany


[Edit block](#)
GENERAL INFO [Close](#)

Block name Wohnen Ost	Number of floors 2	3D Model
Floor height	Internal slab thicknesses	
Floor 1 265cm	Slab 1 30cm	
Floor 2 265cm		
Type of use	Block type	
Living 100%	Main	

TEMPERATURE [Close](#)

Heating setpoint	Cooling setpoint
Heated living space (20-22 °C)	No cooling

WALLS (14) [Close](#)

Wand 1 Assembly added Features: 0	Wand 2 Assembly added Features: 0 x2	Wand 3 Assembly added Features: 0 x4 x1
Wand 4 Assembly added Features: 0 x2	Wand 5 Assembly added Features: 0	Wand 6 Assembly added Features: 0 x4
Wand 7 Assembly added Features: 0	Wand 8 Assembly added Features: 0 x2	Wand 9 Assembly added Features: 0
Wand 10 Assembly added Features: 0 x1	Wand 11 Assembly added Features: 0	Wand 12 Assembly added Features: 0 x4
Wand 13 Assembly added Features: 0	Wand 14 Assembly added Features: 0	

INWARDS WALLS (0) [Close](#)

No inward walls


[Back](#) [Dashboard](#)

- Building summary
- Building
- Keller Ost
- Wohnen Ost**
- Dachgeschoss Ost
- Keller West
- Wohnen West
- Dachgeschoss Ost
- Locations (Coming soon)
- Technical systems
- Solar Energy (Coming soon)
- Site
- Intervention playground
- Energy graph
- Heat pump analytics
- Decarbonization roadmap
- Photo vault
- Error logs
- Test Graphs
- Big 3D Model

Latest updated
Estimate 02.12.2025

Wohnen Ost > Wand 4
6005 Heidelberg (KLON)
 Rohrbacher Straße 146, 69126
 Heidelberg, Germany

Completed

[Edit wall](#)

Wand 4

History log

Construction year 01. Jan 2013

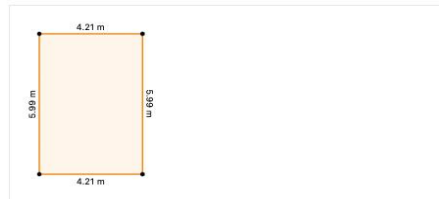
100% Excellent Condition
 No defects, new or like-new condition.



Ambient air
 The adjacent element of
 the wall



GENERAL INFO

[Close](#)


Wall area
 25.24 m²

Compass direction
 East (86°)

Protected wall status
 No data

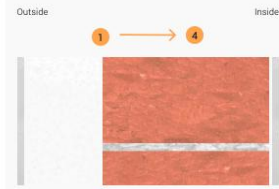
Protected feature status
 No data

ASSEMBLY

[Close](#)

Assembly U-value
 0.16 W/m²K
 Thickness
 555 mm

- 1 Mineral plaster
15 mm
- 2 EPS (expanded Polystyrol), lambda 0.030 ...
160 mm
- 3 Perforated brick, medium density, 550 kg/...
365 mm
- 4 Mineral plaster
15 mm



FEATURES

[Close](#)

Windows 2

Doors 0

Solar Thermal 0

Building summary

Building

Keller Ost

Wohnen Ost

Dachgeschoss Ost

Keller West

Wohnen West

Dachgeschoss West

Locations (Coming soon)

Technical systems

Solar Energy (Coming soon)

Site

Intervention playground

Energy graph

Heat pump analytics

Decarbonization roadmap

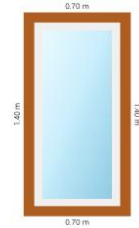
Photo vault

Error logs

Test Graphs

Big 3D Model

[Wohnen Ost](#) > [Wand 10](#) > [Schmal](#)
6005 Heidelberg (KLON) Completed
 Rohrbacher Straße 146, 69126
 Heidelberg, Germany

[Edit window](#)
SHAPE AND SIZE [Close](#)
 Outer frame Operable frame Glazing

Size

70x140cm

Shape

Rectangle

Compass direction

North (358°)

Amount of windows of this type on the wall

1

GLAZING [Close](#)

Type of glazing in the window

N/A

Can any glazing parts be opened?

Yes

Does any glazing part have grids?

No

Does the glazing have a solar protection coating?

No

Does the glazing have lowE coating?

Yes

Glazing area U-value

0.6 W/m²K

Glazing Solar Heat Gain Coefficient (SHGC) value

70 %

Gas filling

Argon

OUTER FRAME [Close](#)

Material of the outer frame

PVC

Thickness of the outer frame

70 mm

Outer frame material U-value

1.7 W/m²KOPAQUE AREAS AND SHADING [Close](#)

Number of opaque areas

0

Material of the opaque area

N/A

Opaque material U-value

N/A

Type of shading

N/A

Window shading schedule

N/A

Window shading coefficient

N/A



CAPSA

[Back](#)
[Dashboard](#)

- Building summary
- Building
 - Walls
 - Roof
 - Locations
- Technical systems
 - Sites
 - Solar energy
 - Intervention playground
- Energy graph
- Decarbonization roadmap
- Photo vault
- Summary tables
- Error logs

Latest updated data


Raw data 02.01.2025
 Energy calculations 08.01.2025

Latest updated
 Raw data 02.12.2025

Decarbonization roadmap > Create your own

Ottenstrasse 22 ● Completed

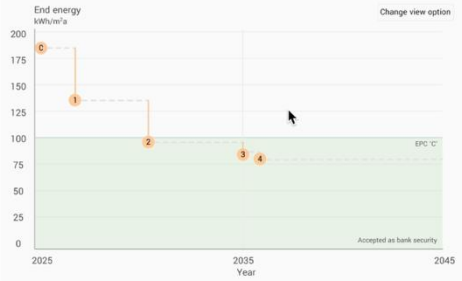
Ottenstrasse 22, 304 51
Hannover, Germany



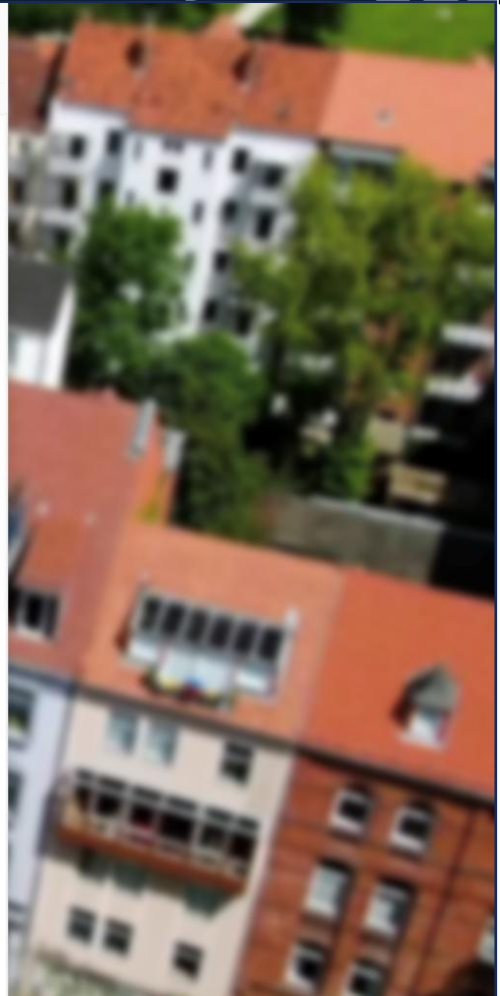
Decarbonization roadmap

- Original building state** 2025
- Improve roof** 2027
 - New roof coverage
 - insulate basement ceiling
- Improve courtyard side** 2030
 - insulate wall courtyard
 - New wall cladding wall courtyards
 - New windows courtyards
 - Scaffolding courtyard
- Improve street side** 2035
 - New windows street
 - New balconies
- Change of heat supply** 2036
 - New heat distribution
 - Switch to direct electric boiler for domestic hot water
 - Switch to district heating

[Edit actions](#)



ACTIONS	YEAR	COSTS	END ENERGY	CARBON EMISSIONS
0 Original building	2025	0 €	183.1 kWh/m ² a	35.7 kgCO ₂ /m ² a
1 Improve roof	2027	250 200 €	136.9 kWh/m ² a	26.7 kgCO ₂ /m ² a
2 Improve courtyard side	2030	62 100 €	99.8 kWh/m ² a	19.5 kgCO ₂ /m ² a
3 Improve street side	2035	109 500 €	82.8 kWh/m ² a	16.2 kgCO ₂ /m ² a
4 Change of heat supply	2036	544 850 €	80.2 kWh/m ² a	10.3 kgCO ₂ /m ² a





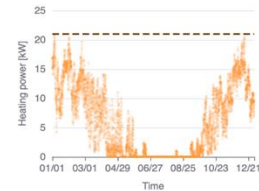
6005 Heidelberg (KLON) Completed
 Rohrbacher Straße 146, 69126 Heidelberg, Germany



[Back](#) [Dashboard](#)

- [Building summary](#)
- [Building](#)
- [Locations \(Coming soon\)](#)
- [Technical systems](#)
- [Solar Energy \(Coming soon\)](#)
- [Site](#)
- [Intervention playground](#)
- [Energy graph](#)
- [Heat pump analytics](#)
- [Decarbonization roadmap](#)
- [Photo vault](#)
- [Error logs](#)
- [Test Graphs](#)
- [Big 3D Model](#)

Heat demand signature



Heat pump max power: kW

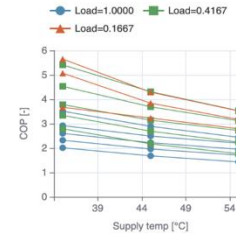
Total heating demand
51507 kWh

Heating demand covered by heat pump
51507 kWh

Residual energy demand
0 kWh

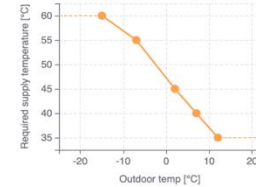
Heating demand covered by heat pump
100%

Input performance mapping



[Edit](#)

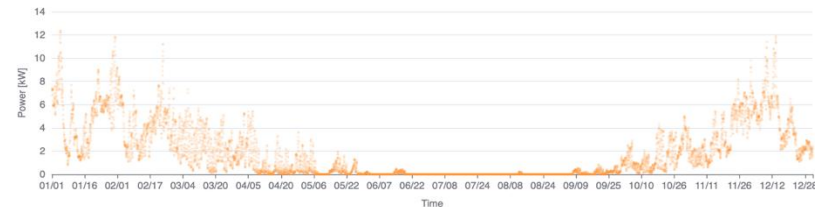
Building heat curve



[Edit](#)

[Calculate](#)

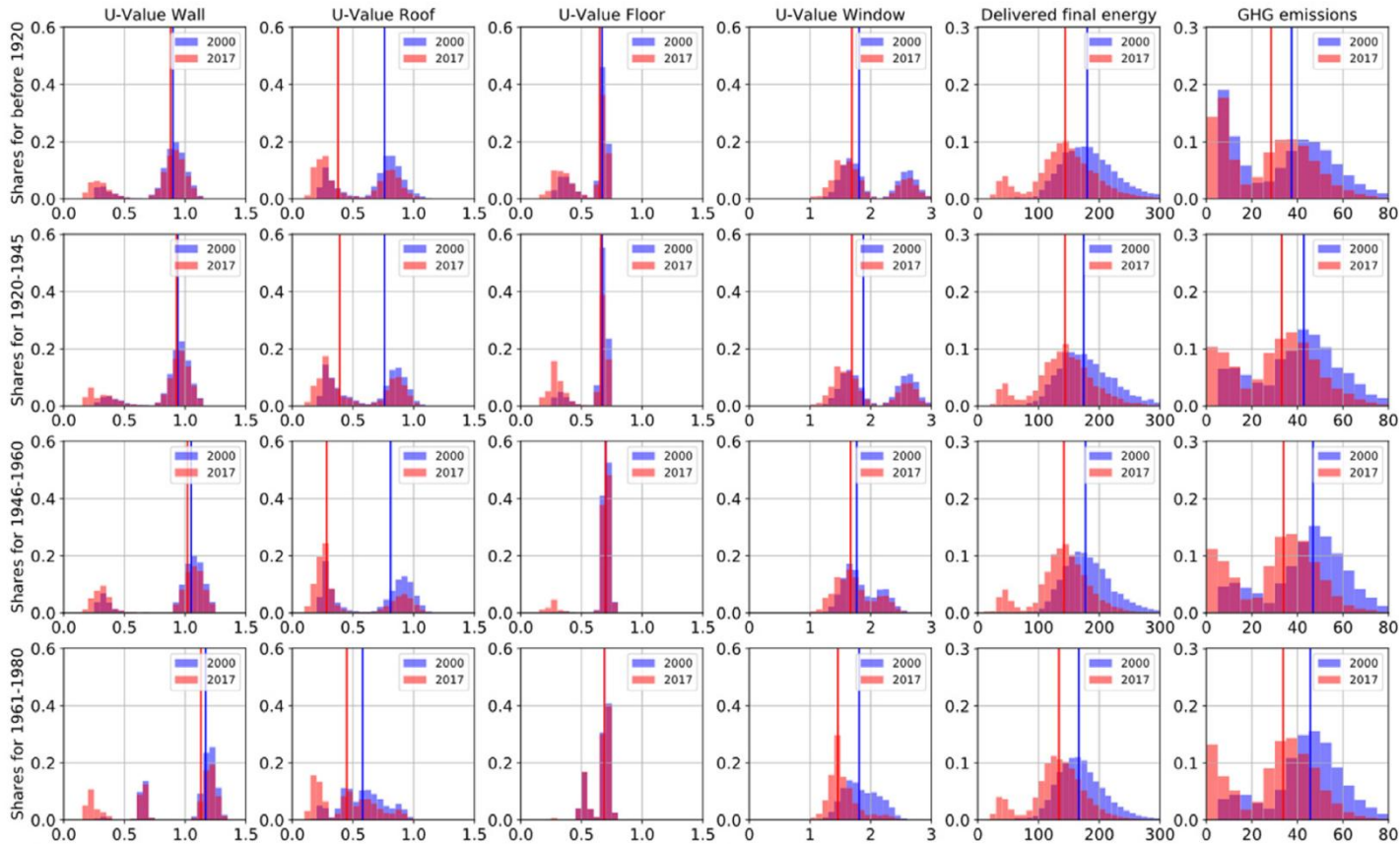
Heat pump electrical power demand



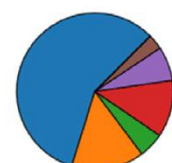
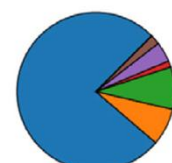
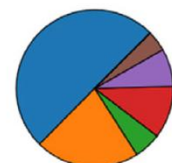
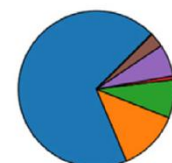
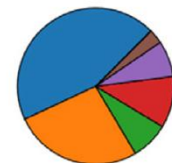
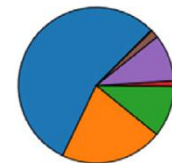
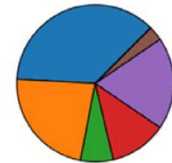
Latest updated
Raw data 02.12.2025

Heat pump energy electrical Residual energy demand Total energy demand

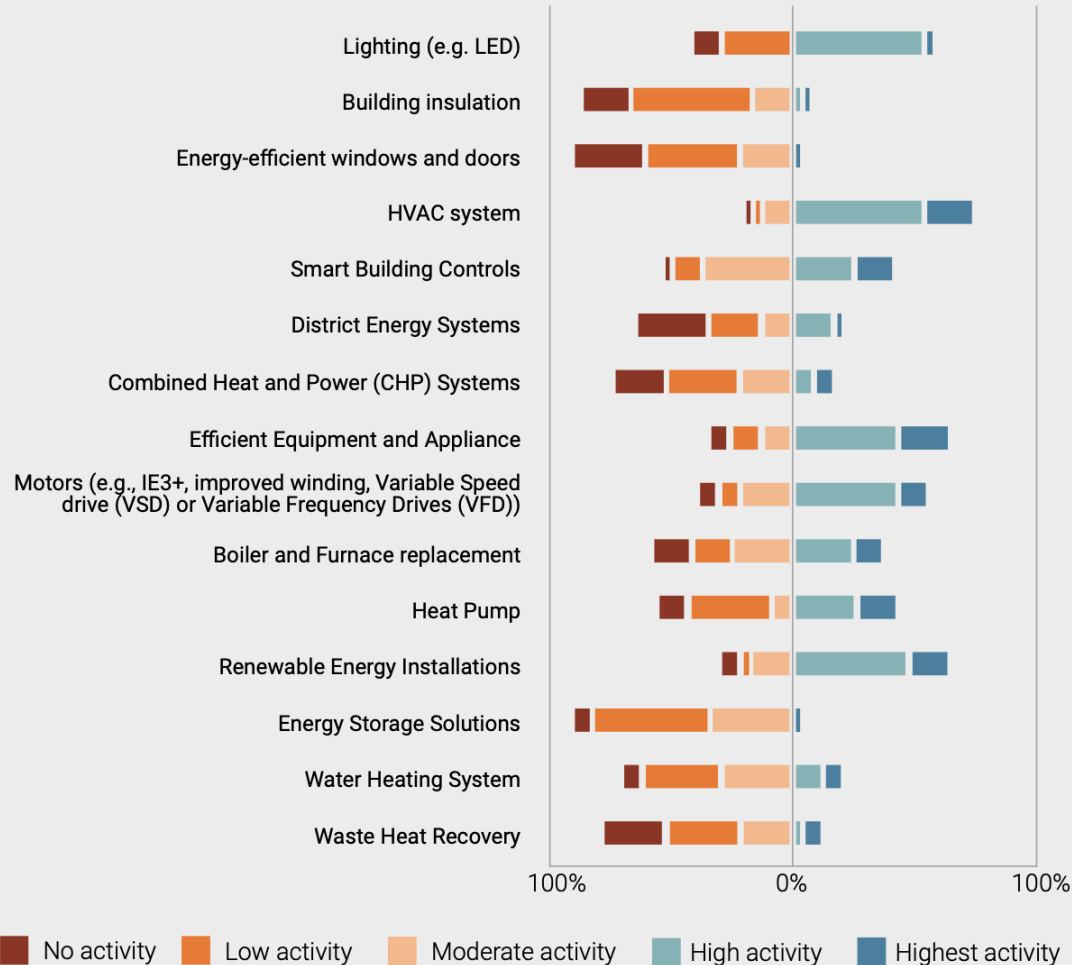
The policy and monitoring argument



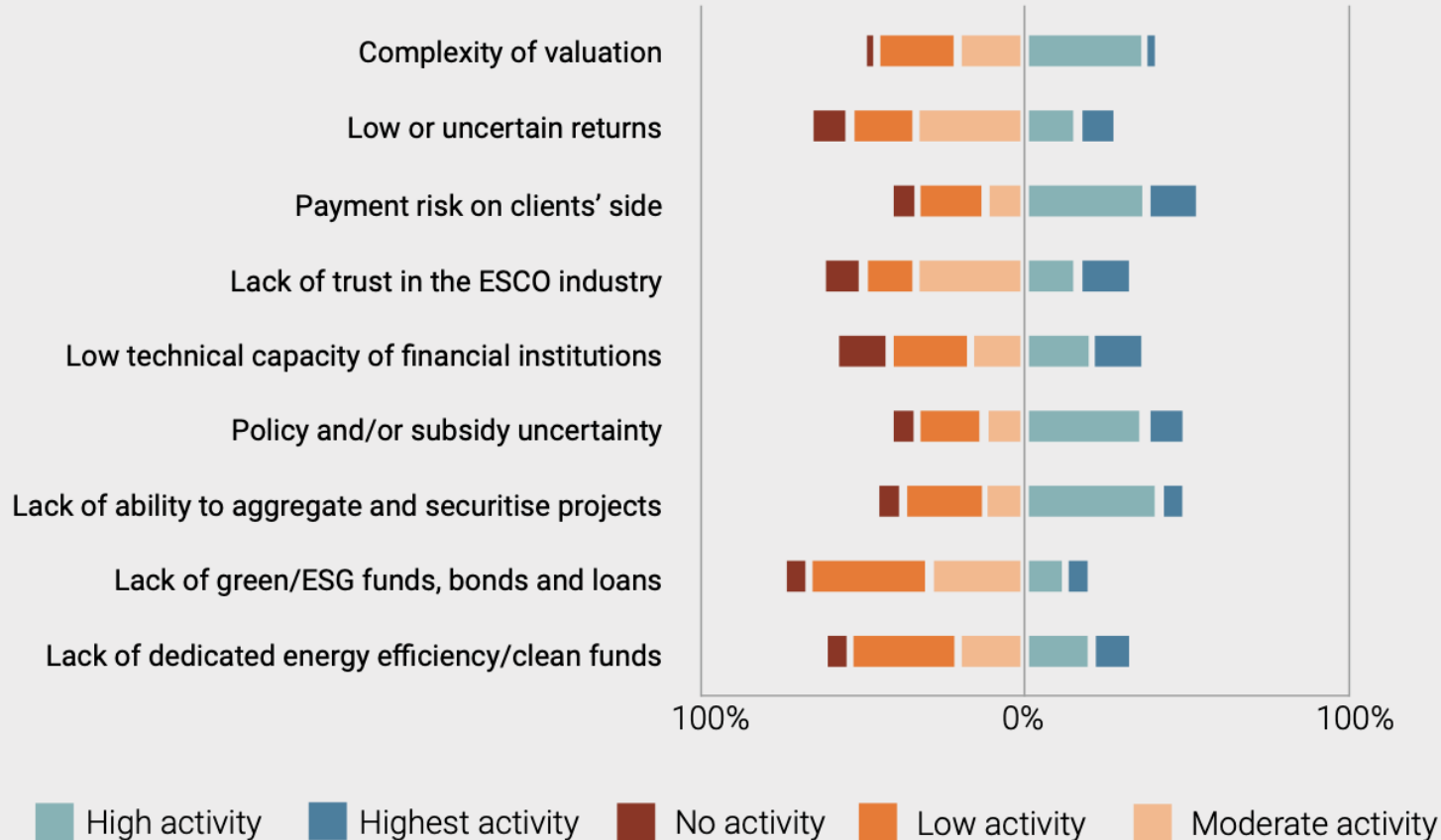
Heating Systems (2000) Heating Systems (2017)



Why does it matter?



Why does it matter?





GREAT-01

received financing from the ELENA Facility
under the Horizon 2020 Programme



Is reliable building data available in your country?

What are regional specific frame conditions would need to be considered in a building passport in your country?

Who would be the ideal curating entity for a digital building passport in your country?

THANK YOU!
QUESTIONS?

