SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

Assessing the impact of building renovation actions at the local scale:

BUILD UPON^2

A multi-level energy renovation Impact Framework

#BUILDUPON

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

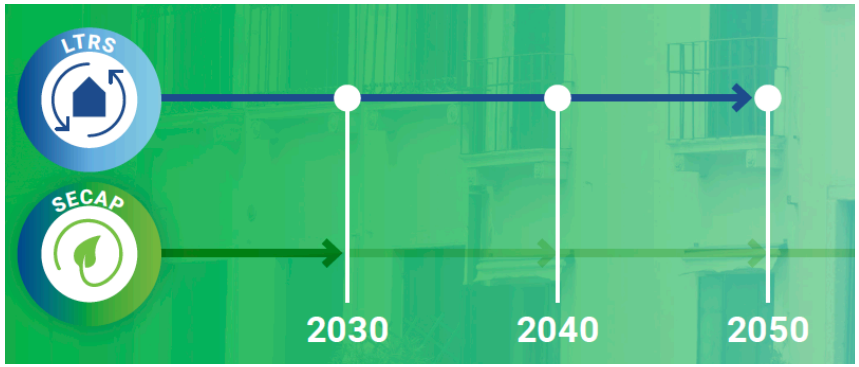
Main objective

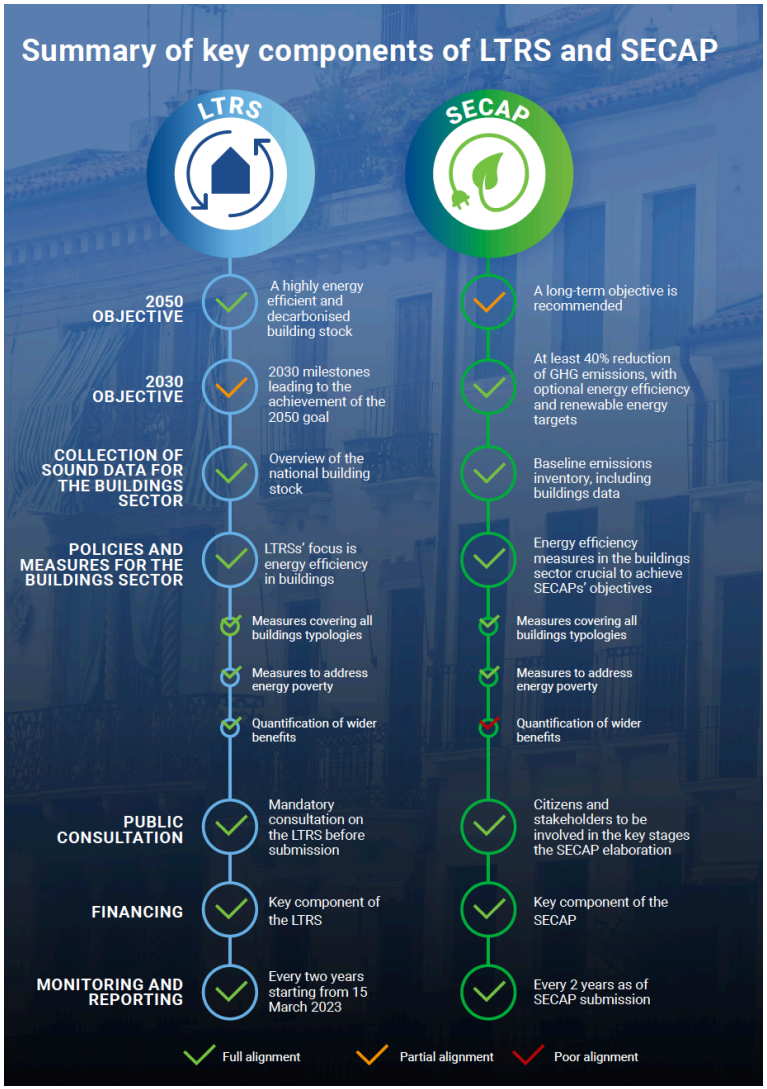
The project aims at supporting Public Administrations in guiding the decarbonization of the building stock at 2050 by the definition of **a multilevel impact framework to assess the impact of local renovation actions to national LTRS's objectives**

Long-term renovation strategies
2020
EPBD
(Art 2a)

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

Aligning objectives at different government levels and with SECAPs





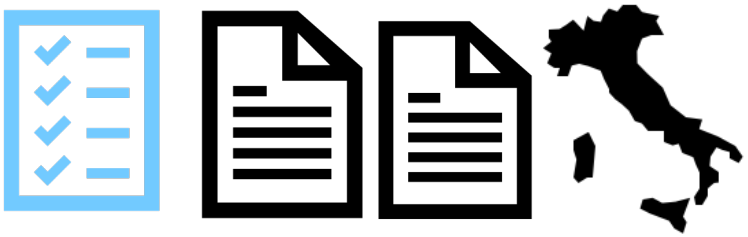
- BUILD UPON^2

CONCEPT

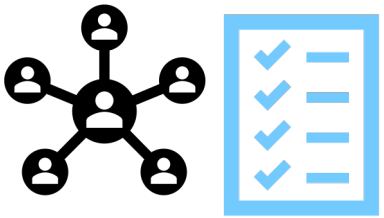
Cities are provided with new and more efficient policy objectives

Cities apply the multilevel impact framework to their initiatives and at city scale

BU^2 POLICY feedback loop



Impacts measures the level of achievement of national objectives to guide future policies



Data are collected and analised by cities to assess impact of renovation measures and submitted at national level

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

BUILD UPON^2 supports cities with strategies and solutions for scaling renovation

#BUILDUPON

GREEN BUILDING COUNCIL ITALIA

BUILD UPON^2

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

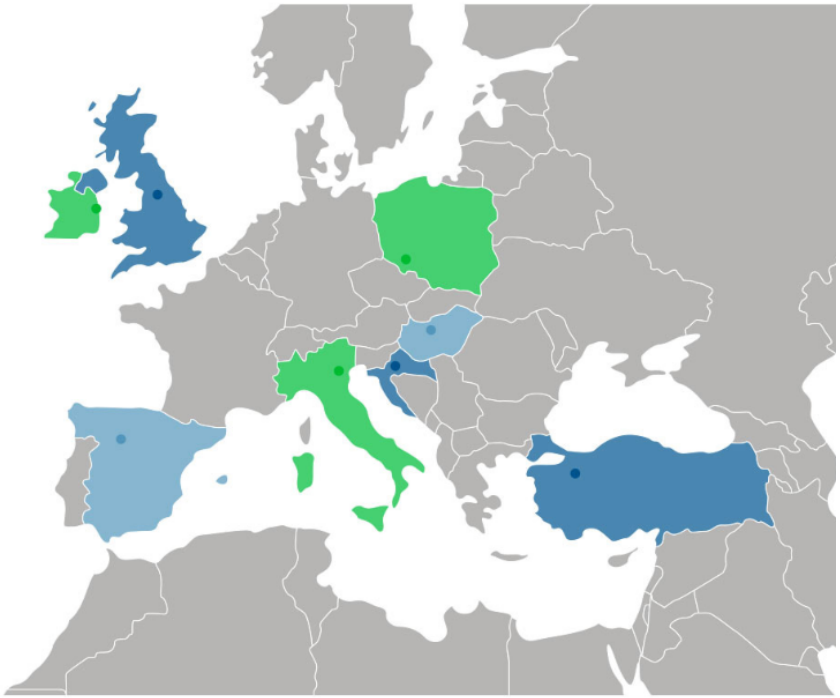
HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

Our pilot cities

- Velika Gorica, Croatia
- Budaörs, Hungary
- Dublin, Ireland
- Padova, Italy
- Wroclaw, Poland
- Valladolid, Spain
- Eskişehir, Turkey
- Leeds, UK



SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

Project partners

GBCe green building council españa

BPIE

Climate Alliance

HRVATSKI SAVJET ZA ZELENU GRADNJU

HuGBC Magyar Környezettudatos Építés Egyesülete Hungary Green Building Council

IGBC IRISH GREEN BUILDING COUNCIL

GREEN BUILDING COUNCIL ITALIA

PLGBC Polish Green Building Council

Cedbik ÇEVRE DOSTU YEŞİL BİNALAR DERNEĞİ TURKISH GREEN BUILDING COUNCIL

UK GBC Together for a better built environment

WORLD GREEN BUILDING COUNCIL

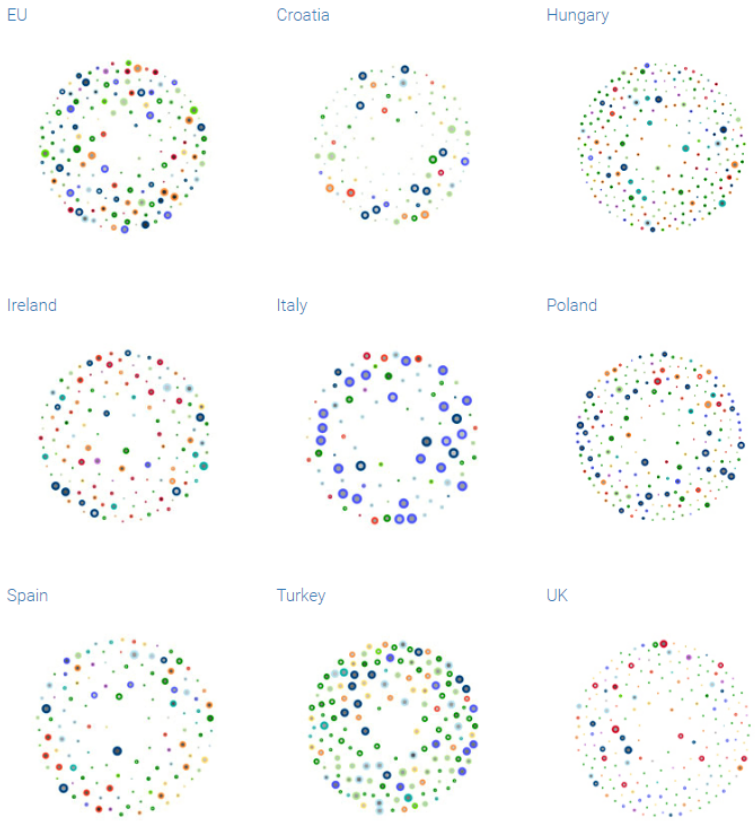
SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

Who we work with



SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

The Italian steering group

Pilot city:

- Padova

Follower city:

- Brescia
- Pesaro
- Roma

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

BU² Framework's structure

SDGs and EU proirities

National objectives and LTRS targets

Local objectives and targets

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

BU² Framework's structure

- Environmental indicators
- Social indicators
- Economic indicators

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

Environmental indicators at local scale

	GOAL - which contribute to EU targets	MUNICIPAL - Progress Indicators
ENVIRONMENTAL	Greenhouse gas emission reduction: 50% by 2030 compared with 1990 level and carbon neutrality by 2050 *Source: EU Green Deal*	Reduction in direct annual CO2 emissions from **renovation** compared to the municipality's baseline year as per CoM reporting - P - T - R
	At least 32.5% improvement in energy efficiency by 2030 - relative to the 2007 modelling projections for 2030. *Source: Energy Efficiency Directive (2018/2002)*	**Final energy consumption** reduction from renovation - P - T - R Improvement of **Net Space Heating & Cooling Demand** due to energy **renovation** - P - T - R Total annual energy **renovation rate** % - P - T - R > Of which **light renovation** > Of which **medium renovation** > Of which **deep renovation** % of renovated buildings reaching **nZEB standard** annually - P - T - R % of the total floor area of buildings owned and occupied by the municipality retrofitted each year - M
	At least 32% share of **renewable energy** by 2030 *Source: Renewable Energy Directive (2018/2001)*	Total additional energy produced from **renewable** resources on site or nearby as a result of **renovation** - P - T - R

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

Social indicators at local scale

SOCIAL	Reduction of **energy poverty** - R - SH	% of households having arrears on utility bills - R - SH
	Provide safe buildings to people (**Indoor Air Quality** and **Thermal Comfort**)	# households living in renovated dwellings with commissioned ventilation system - R - SH
		# non-residential renovated buildings with a commissioned ventilation system - M - T
		# households living in renovated dwellings where EPC demonstrates that post renovation condition will satisfy heating requirements - R - SH
		# households living in renovated dwellings where actions have been taken to minimise summer overheating risk - R - SH
		# non-residential renovated buildings where EPC demonstrates that post renovation condition will satisfy heating requirements - T - M
		# non-residential renovated buildings where actions have been taken to minimise summer overheating risk - T - M
	Empowering citizens - Ensuring citizens are at the centre of the transition	# private households retrofitting their homes / year - R
		# sq. m² commercial buildings retrofited annually - T

GBC Italia

BUILD UPON²

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

Economic indicators at local scale

ECONOMIC	Increasing **investment in energy renovation**	> Total **annual investment in energy renovation** - R - SH - M - T > Total annual public **investment in energy renovation** (of which % directed to renovating public building and % invested in grants/subsidies) - R - SH - M - T > Total annual private **investment in energy renovation** - R - SH - M - T
	Increasing number of **people directly working on energy renovation**	# companies involved in energy renovation - T- R-SH - M
		# graduates from **3rd level courses and technical training courses with focus on energy renovation** - T- SH - P - M
		# building professionals and construction workers taking part in **energy renovation upskilling** - T - SH - M - R > of which # Municipality staff **upskilling in energy renovation**

GBC Italia

BUILD UPON²

8 National reports on the analysis of data availability to use the indicators of the Framework

8 GBCs analysed data availability at national and local level for each core indicator of V2 and V3 of the Framework
A reference table is provided to highlight difference between V3 and V4 indicators

Data availability was ranked as:

- Available
- Partially Available
- Non-Available

A short SWOT Analysis higlights barriers and strenghts for each country

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

Overview of data collected at national and local level

National level:

Category	Indicator	Croatia	Hungary	Ireland	Italy	Poland	Spain	Turkey
Environmental	Reduction in direct annual CO2 emissions from renovation compared to 1990 levels - P - T - R	✓	~	~	~	~	~	~
	Final energy consumption reduction from renovation P - T - R	~	~	~	✓	~	~	~
	Improvement of Net Space Heating & Cooling Demand due to energy renovation - P - T - R	✗	~	~	~	~	✗	~
	Total annual energy renovation rate % - P - T - R > Of which light renovation > of which medium renovation > of which deep renovation	✗	~	✗	✓	~	~	✗
	Total additional energy produced from renewable resources on site or nearby as a result of renovation - P - T - R	✗	✗	~	~	~	✗	✗
Social	% of households having arrears on utility bills - R - SH	✓	~	~	~	~	~	✓
	Actions to improve Indoor Air Quality post Renovation Works - R - SH - P - T	✗	✓	✓	✗	✗	✗	✗
	Actions to improve average thermal Comfort Post Renovation Works - R - SH - P - T	✗	~	✗	✗	✗	✗	✗
	# private households retrofitting their homes / year - R	✓	~	~	✓	~	~	~
	# sq. m² commercial buildings retrofitted annually - T	✓	~	~	✗	~	✗	~
Economic	> Total annual investment in energy renovation - R - SH - P – T > Total annual public investment in energy renovation(of which % directed to renovating public building and % invested in grants/subsidies) - R - SH - P – T > Total annual private investment in energy renovation - R - SH - P - T	✓	~	✗	✓	~	~	~
	# companies involved in energy renovation - T - R-SH- P	✗	✗	~	✓	✗	✗	~
	# graduates from 3rd level courses and technical training courses with focus on energy renovation - T - SH - P - R	✓	✓	✗	✗	✗	✗	✓
	# building professionals and construction workers taking part in energy renovation upskilling - T - SH - P - R	✓	✗	✗	~	✗	✗	~

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

Overview of data collected at national and local level

Local level:

Category	Indicator	Croatia	Hungary	Ireland	Italy	Poland	Spain	Turkey	UK
Environmental	Reduction in direct annual CO2 emissions from renovation compared to the municipality's baseline year as per CoM reporting - M - T - R	✓	~	~	~	~	✗	~	~
	Final energy consumption reduction from renovation - M - T - R	~	~	~	~	~	✗	✗	~
	Improvement of Net Space Heating & Cooling Demand due to energy renovation - M - T - R	✗	~	~	~	~	✗	✗	~
	Total annual energy renovation rate % - M - T - R > Of which light renovation > of which medium renovation > of which deep renovation	✗	~	✗	~	~	✗	~	✗
	% of the total floor area of buildings owned and occupied by the municipality retrofitted each year - M	✓	✓	~	✓	✓	✗	~	✓
	Total additional energy produced from renewable resources on site or nearby as a result of renovation - M - T - R	✗	✗	~	~	✓	✗	✗	~
Social	% of households having arrears on utility bills - R - SH	✓	✗	~	~	~	✗	✗	~
	# households living in renovated dwellings with commissioned ventilation system - R - SH	✗	✗	✗	✗	✗	✗	✗	✗
	# non-residential renovated buildings with a commissioned ventilation system - R - SH	✗	✓	✗	✗	✗	✗	✗	✗
	# households living in renovated dwellings where calculation demonstrates that post renovation condition will satisfy both heating requirements and minimise summer overheating risk	✗	✓	✗	~	~	✗	✗	✗
	# non-residential renovated buildings where calculation demonstrates that post renovation condition will satisfy both heating requirements and minimise summer overheating risk	✗	✓	✗	~	~	✗	✗	✗
	# private households retrofitting their homes / year - R	✓	~	~	~	~	✗	~	✗
	# sq. m² commercial buildings retrofitted annually - T	✓	~	~	~	✓	✗	~	✗
Economic	> Total annual investment in energy renovation - R - SH - M – T > Total annual public investment in energy renovation (of which % directed to renovating public building and % invested in grants/subsidies) - R - SH - M – T > Total annual private investment in energy renovation - R - SH - P - T	✓	~	✗	~	~	✗	~	✗
	# companies involved in energy renovation - T - R-SH - M	✗	✗	✗	✗	✗	✗	✗	✗
	# graduates from 3rd level courses and technical training courses with focus on energy renovation - T - SH - M - R	✓	✗	✗	✗	✗	✗	✗	✗
	# building professionals and construction workers taking part in energy renovation upskilling - T - SH - M - R > of which # Municipality staff upskilling in energy renovation	✓	✗	~	✓	~	✗	~	✗

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

- A collection of measures to support specific indicators of the Framework with pathways to overcome lack of data

- A collection of best practices on renovation measures at local scale supported by the assessment of impact

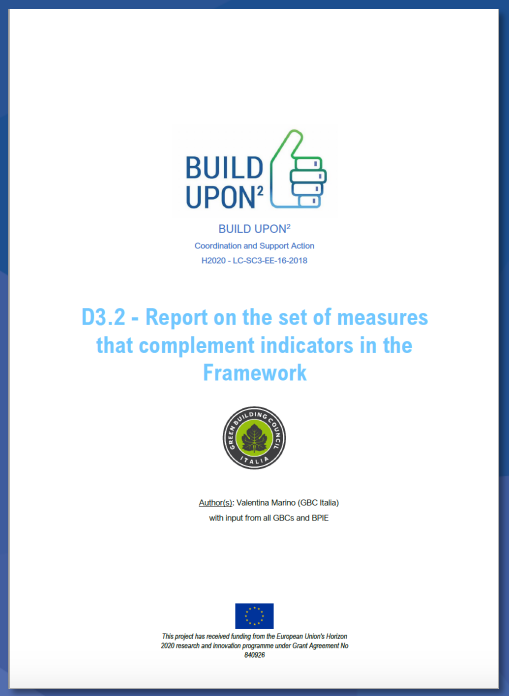
GBC Italia

BUILD UPON²

Collection and share of selected measures and best practices across Europe to support the use of the Framework and of its indicators

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2


BUILD UPON²

BUILD UPON²
Coordination and Support Action
H2020 - LC-SC3-EE-16-2018

D3.2 - Report on the set of measures that complement indicators in the Framework

Author(s): Valentina Marino (GBC Italia)
with input from all GBCs and BPIE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 840926

GBC Italia

BUILD UPON²

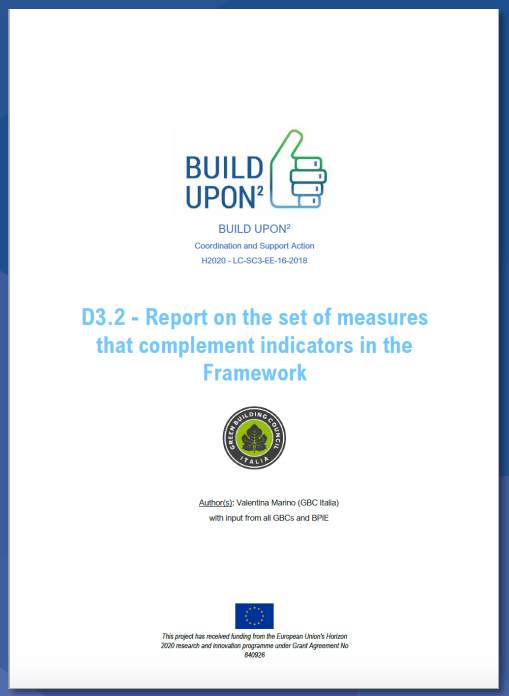
Measures to support the use of indicators

GBCs and BPIE shared +70 measures at local and national level that proposed solutions to support the use pf indicators
GBC Italia analysed them all and expanded the collection of information on **37 selected measures** :

Type of measure	How many? (some have a double use)	Environmental	Social	Economic
Questionnaire	2	X		
Web portal/web software	4	X	X	
Database	18	X		X
Register	2	X		X
Statistic	2		X	X
Plan	1	X		
Interactive Map	5	X	X	X
Report	2	X		X
Methodology	2		X	
Design tool	6	X		

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2


BUILD UPON²

BUILD UPON²
Coordination and Support Action
H2020 - LC-SC3-EE-16-2018

D3.2 - Report on the set of measures that complement indicators in the Framework

Author(s): Valentina Marino (GBC Italia)
with input from all GBCs and BPIE

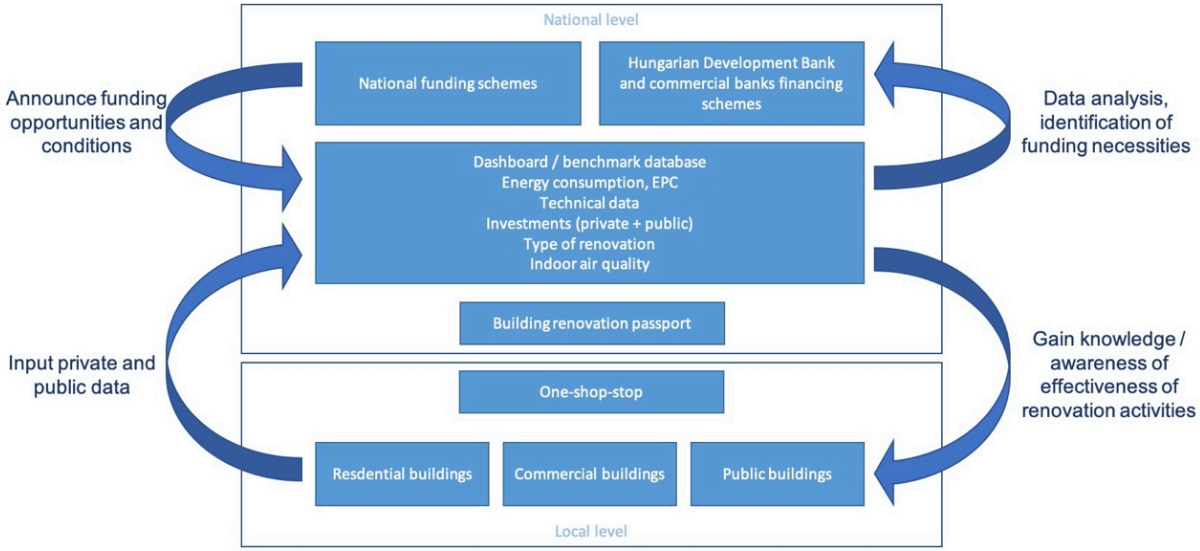
This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 840926

GBC Italia

BUILD UPON²

Measures to support the use of indicators

GBCs proposed **26 pathways** to overcome barriers in data availabilty for one or more indicators at the same time



Pathway for multiple social indicators by Hungarian GBC

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

GBC Italia

BUILD UPON²

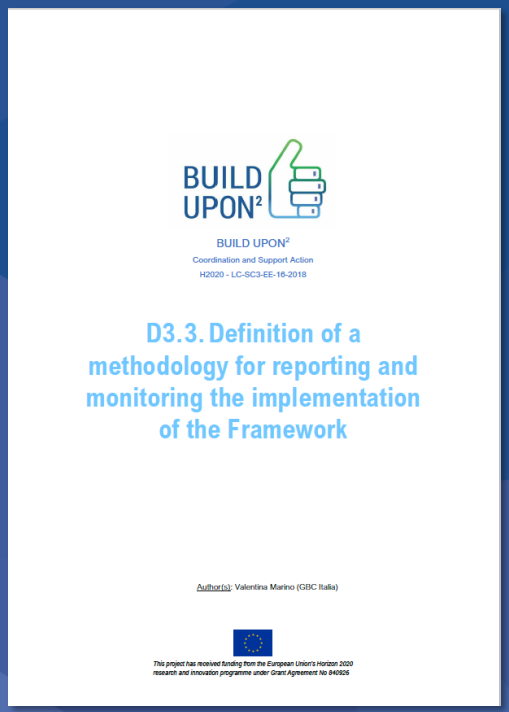
Measures to support the use of indicators

EERN with project partners collaborated in the collection of best practices on renovation activity across Europe that were supported by impact analysis

The report was published to support the launch of the Renovation Wave by the European Commission within the EU Grean Deal

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2



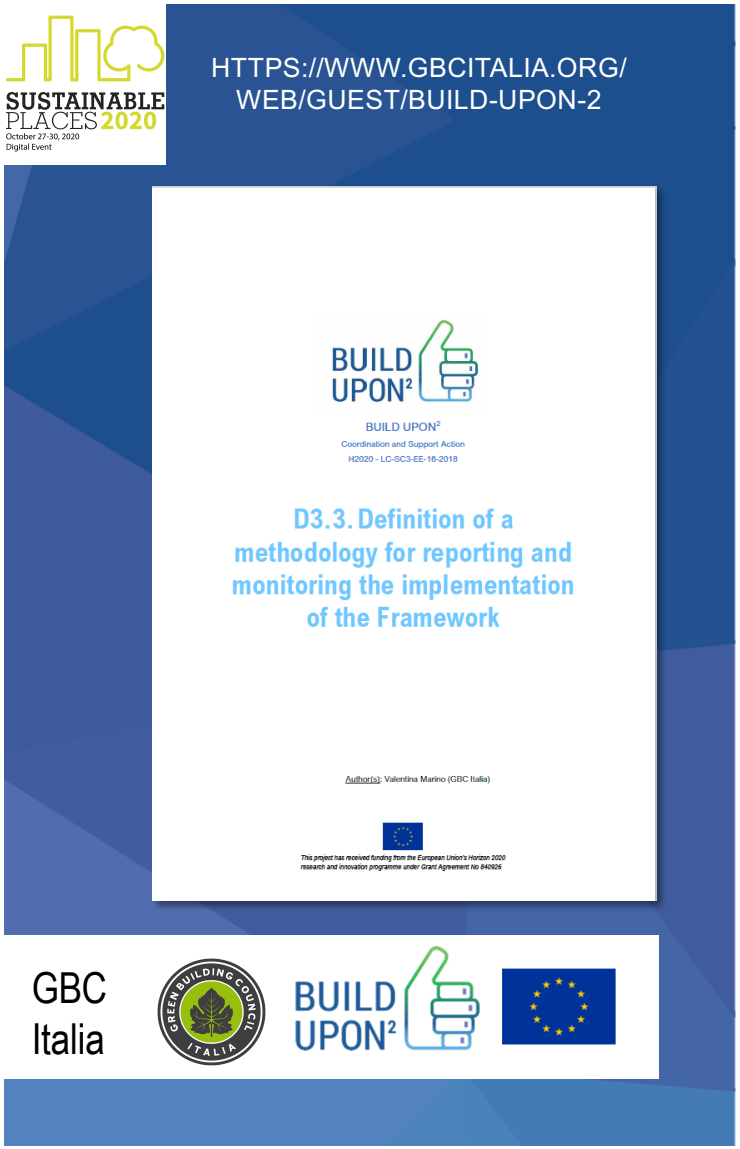
GBC Italia

BUILD UPON²

1st version of the methodology for reporting and monitoring the use of the Framework

All GBCs, BPIE and Climate Alliance, coordinated by GBC italia proposed a 1° version of a reporting and monitoring methodology :

- to support municipalities on the use of the Framework
- to align the Framework to SEAP/SECAPS reporting activity



1st version of the methodology for reporting and monitoring the use of the Framework

The methodology includes the following topics:

- Scope of the Framework
- Supporting procedures and tools:
  - ➢ Align the framework to current procedures and integrate in current reporting activity for municipalities
- Monitoring and reporting:
  - ➢ It is suggested a continuous monitoring of indicators and a reporting every 2 years as for SECAP/SEAP
- Data availability and harmonization:
  - ➢ Monitored data are to be preferred to calculated data in the long term
- The Framework after the project end
  - ➢ Who is taking care of the update of the indicators and methodology? Who is going to monitor the use of the Framework by different countries?

Testing phase

Indicators are under a testing phase at european level: all pilot cities will test indicators' reporting

- On a specific initiative
- At city level

Results of the testing phase will support the improvement of indicators and of the methodology and will help understanding how european cities can integrate the framework on their practice along with their training needs

SUSTAINABLE PLACES 2020
October 27-30, 2020
Digital Event

We must **ACT NOW** to hit net zero carbon by 2050 — cities can lead

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

WORLD GREEN BUILDING COUNCIL

BUILD UPON²

Valentina Marino
Arch. Ph.D.
International activities and relationships
Green Building Council Italia

Piazza Manifattura 1
38068 Rovereto (TN) Italia

www.gbcitalia.org

HTTPS://WWW.GBCITALIA.ORG/WEB/GUEST/BUILD-UPON-2

Thank you!

This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 840926. The sole responsibility for the content of this material lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.