

Metodologie e strumenti a supporto della decarbonizzazione e della circolarità in edilizia

11 giugno 2026

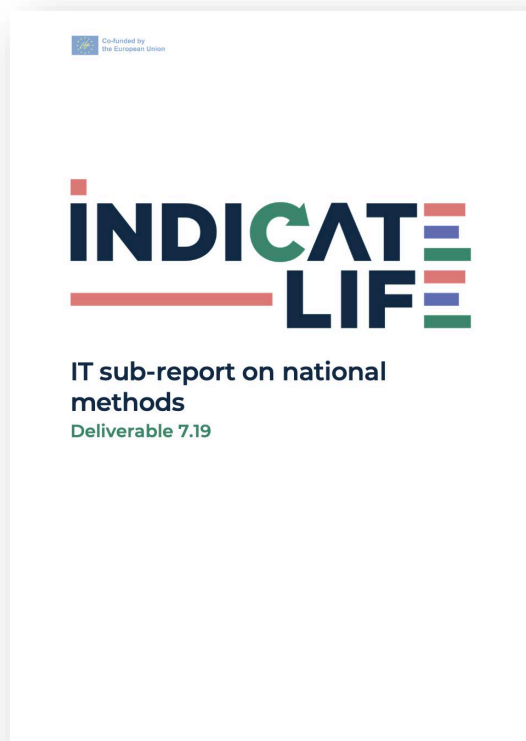


Sala Auditorium, MASE
Via Capitan Bavastro 176, Roma

Metodologia INDICATE LIFE per il Whole Life Carbon degli edifici nel contesto italiano *sviluppi e integrazioni con CAM, EPBD IV e #BuildingLife*

Elisabetta Palumbo, Università degli Studi di Bergamo

Metodologia per il calcolo della WLC in Italia

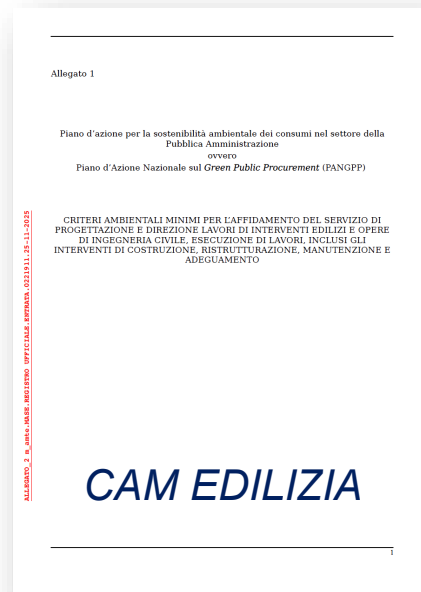


Definire una **metodologia nazionale** per la valutazione della **Whole Life Carbon** degli edifici

La metodologia mira a:

- definire un **quadro metodologico nazionale armonizzato** per la valutazione del Whole Life Carbon degli edifici, in linea con Level(s) e il quadro europeo di riferimento;
- garantire che i **risultati coerenti, trasparenti e confrontabili** a livello europeo;
- favorire l'armonizzazione degli approcci, nel rispetto delle **specificità nazionali**.

Metodologia per il calcolo della WLC in Italia



Quadro **metodologico strutturato** per la conduzione degli studi LCA negli appalti pubblici, in coerenza con **Level(s)**



Supporto all'**integrazione del WLC** nelle strategie nazionali di decarbonizzazione



INDICATE LIFE ITALIAN METHODOLOGY

Ambito di applicazione e impostazione metodologica

Procedure di valutazione e calcolo

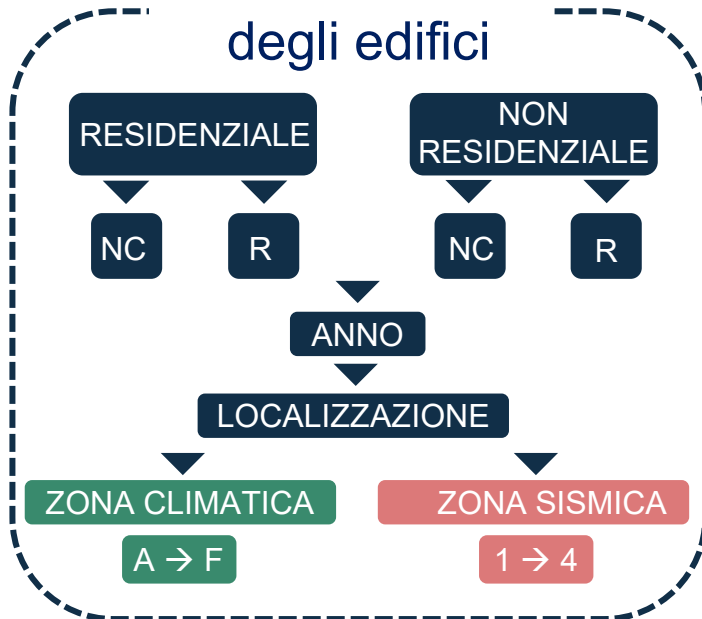
Dati di input e fonte dati LCA-base

Strumenti operativi di calcolo

Modalità di reporting e aggregazione dei risultati

Aspetti metodologici per la WLC

Caratteristiche degli edifici

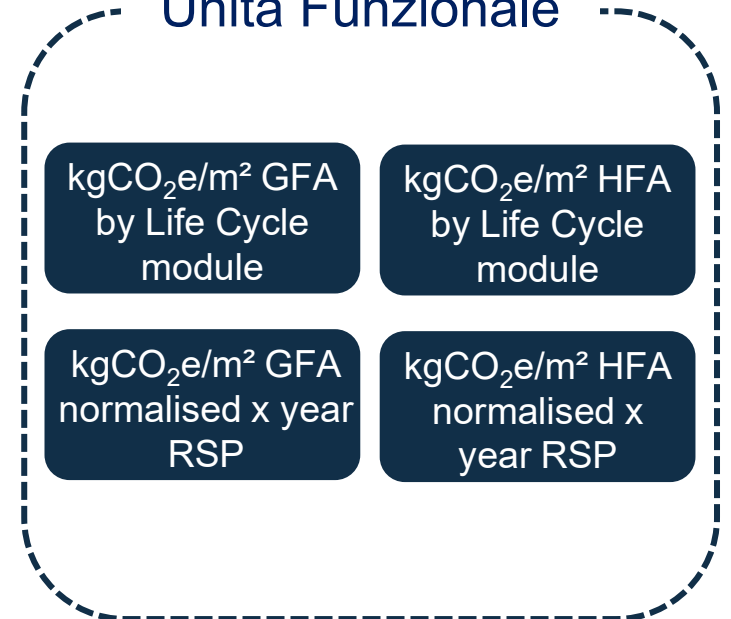


NC: nuova costruzione
R: retrofit

Periodo di riferimento dello studio (RSP)



Unità Funzionale



GFA: Superficie lorda
HFA: Superficie riscaldata

Aspetti metodologici per la WLC

Moduli LCA

BUILDING ASSESSMENT SYSTEM																					
BUILDING LIFE CYCLE														BEYOND THE LIFE CYCLE							
PRODUCTION			CONSTRUCTION		USE							END OF LIFE				BENEFIT AND LOADS					
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D1	D2	D3			
Raw material supply	Transport to the production site	Manufacturing	Transport to the construction site	Construction	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy	Operational water	Deconstruction	Demolition	Transport to the waste processing site	Waste processing	Disposal	Reuse	Recycle	Waste-to-energy	Energy Surplus	Offsetting
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CAM 2025																					
Tools for decarbonisation Minimum scope																					
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Tools for decarbonisation WLC (EPBD)																					
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Tools for decarbonisation Extended Life Carbon Assess.																					
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INDICATE LIFE																					

Elementi tecnici

Building element classes		Reporting	CAM	Tools for decarbonisation
NRM3 Tier 1	NRM3 Tier 2			
0 Treatment and demolition	0.1 Treatment and demolition works; Facilitating works	Optional	Excluded	Optional
1 Sub-structure	1.1 Foundations and piling	Mandatory	Mandatory	Recommended
	1.2 Basement retaining walls and lowest slab	Mandatory	Mandatory	Recommended
	2.1 Frame	Mandatory	Mandatory	Recommended
	2.2 Upper floors	Mandatory	Mandatory	Recommended
2 Super structure	2.3 Roof	Mandatory	Mandatory	Recommended
	2.4 Stairs, ramps and safety guarding	Mandatory	Mandatory	Recommended
	2.5 External envelope including roof finishes	Mandatory	Mandatory	Recommended
	2.6 Windows and ext doors	Mandatory (Ext. doors - Recommended)	Mandatory (no doors)	Recommended
	2.7 Internal walls	Mandatory	Mandatory	Recommended
	2.8 Internal doors	Recommended	Recommended	Recommended
3 Finishes	3.1 Wall finishes	Mandatory	Mandatory	Recommended
	3.2 Floor finishes	Mandatory	Mandatory	Recommended
	3.3 Ceiling finishes	Mandatory	Mandatory	Recommended
4 Furniture, furnishings and equipment (FF&E)	4.1 General FF&E	Optional	Excluded	Recommended
	4.2 Kitchen equipment	Optional	Excluded	Excluded
	4.3 Specialist FF&E	Optional	Excluded	Excluded
	4.4 Loose FF&E	Optional	Excluded	Excluded
	4.5 Information Technology (IT)	Optional	Excluded	Excluded
	4.6 Audio and visual	Optional	Excluded	Excluded
5 Services	5.1 Public Health	Optional	Excluded	Excluded
	5.2 Heating, Ventilation and Cooling (HVAC)	Mandatory	Excluded	Recommended
	5.3 Electrical installations	Recommended	Excluded	Recommended
	5.4 On site renewable energy generation	Recommended	Excluded	Recommended
	5.5 Other systems	Recommended	Excluded	Recommended
6 Pre-fabricated buildings and units	-	Optional	Excluded	Recommended
7 Works to existing buildings	-	Mandatory	Excluded	Recommended
8 External works	8.1 Roads; Fencing, railings, walls; Etc.	Optional	Excluded	Optional
	8.2 Soft landscape, planting, irrigation	Optional	Excluded	Optional
	8.3 External drainage; External services	Optional	Excluded	Optional
			Optional	Excluded

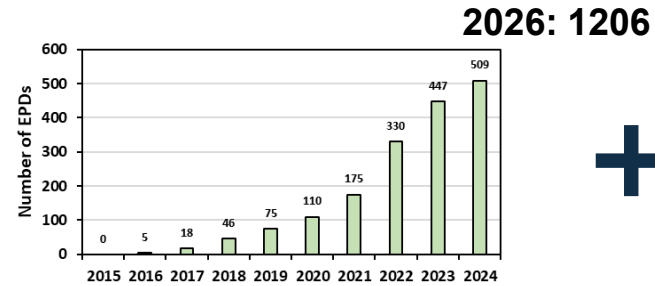
- INDICATE reporting
- GPP (CAM)
- Tool for Decarbonisation

Fonte dei dati

EPD



Numero di EPD registrati da

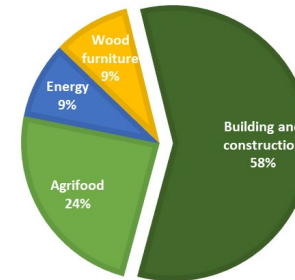


Trend anche in altri
Program Operators
(EPD International and IBU)

ARCADIA
Database
LCA italiano



Building and Construction
Products in the Italian
LCA Database



1. *Steel for metal carpentry constructions*
2. *Concrete and recycled aggregates*
3. *Autoclaved aerated concrete*
4. *Cement*
5. *...*

Dati
generici



Critically
reviewed sector-
average data

Critically
reviewed LCA
data

EN 15804
compliant data

Industrial
association
reports

Literature
data

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Grazie!

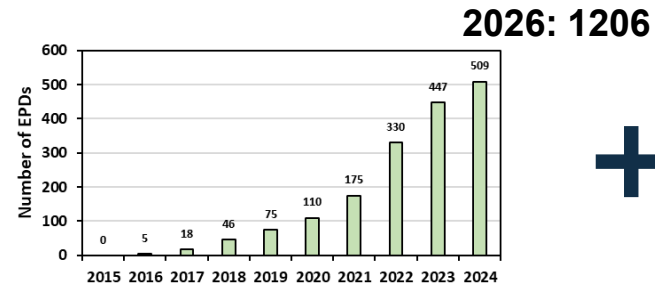
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elisabetta.palumbo@unibg.it

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EPD



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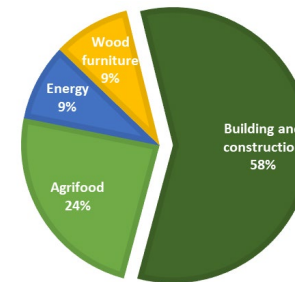


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