Whole Life-Cycle Global Warming Potential reporting for buildings

Stakeholder meeting

22 October 2024
10:00-12:30

www.wlc-epbd-guidance.eu

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Viegand Maagøe

eXergia
CLIMATE CHANGE CONSULTANTS

COWI

The Study

Technical support study, assisting the European Commission with activities related to the clarification and implementation of the recast EPBD relating to building whole life-cycle GWP. Specifically:

- Input for the delegated act for the Life Cycle Global Warming Potential (LC-GWP) methodology to amend Annex III.
- Input for the guidance to support Member States in developing a roadmap introducing limit values for whole LC-GWP.

Please note that the information and views expressed in this stakeholder meeting are those of the consultants and do not necessarily represent the official opinion of DG ENERGY. The final official publication of any guidance material and any related Delegated Act will ultimately be the responsibility of the Commission.

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Study web page: https://www.wlc-epbd-guidance.eu/

Agenda

1	Welcome – 10:00
2	Introduction : Policy background – 10:05
3	Part I : Presentation of LC-GWP methodology and DA 10:10 – 11:00
4	Part I : Discussion of LC-GWP methodology and DA 11:00 – 11:30
5	Break 11:30 – 11:35
6	Part II : Presentation of LC-GWP roadmap and guidance 11:35 – 12:00
7	Part II : Discussion of LC-GWP roadmap and guidance 12:00 – 12:25
8	Closure 12:30

Times are slightly updated compared to the invite.

Primary contacts

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Viegand Maagøe

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Housekeeping rules & practical information for stakeholders

We have more than 400 participants registered for the meeting

The meeting is recorded and automatically transcribed for the purpose of the minutes, and the summary. Consent was given when registering and entering the room.

Slides and summary of the meeting will be available at https://www.wlc-epbd-guidance.eu.

You are muted by default and will be unmuted when given the floor, please state name and organization.

Participants shall ask **questions in the Q&A tab**, please state name and organization.

The **chat function** shall be used for sharing material and insights, which are not relevant for the discussion, but to inform other stakeholders and the study team.

Keep questions and interventions concise.

We will try to answer in plenum – if needed we might ask you to elaborate.

If time does not allow for all questions to be answered, the Q&A will be used as a record for input to the study.

Written inputs after the meeting are welcome until the **1st Nov 2024 through project website questionnaire** [Link to questionnaire]

Purpose of this meeting

Inform stakeholders about ongoing work in our study regarding Articles 7(2), 7(3) and 7(5) of the recast EPBD.

Explain the study team's current interpretation of these Articles.

Discuss the main issues we see with these Articles.

Gather information and hear your views (by 1st November).

Recast EPBD
Whole Life-Cycle Global Warming Potential

BUNTHAN IEA, Ph.D., Policy Officer
DG ENER.B.3 - Buildings and Products
Contact : Bunthan.IEA@ec.europa.eu

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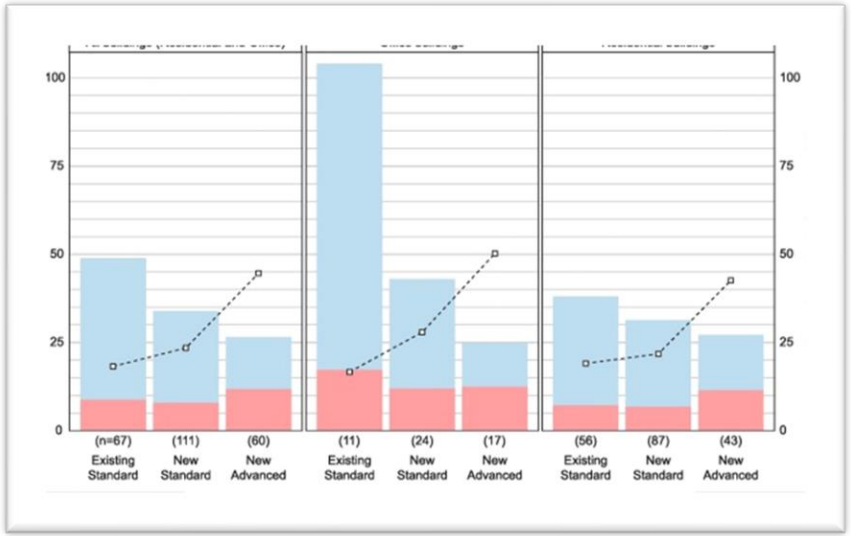
Policy background

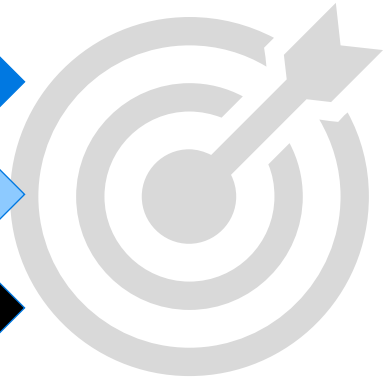
Buildings are responsible for greenhouse gas emissions before, during & after their operational lifetime



Go beyond current focus on operational carbon

Embodied carbon more and more important

Need whole life cycle to get the right balance

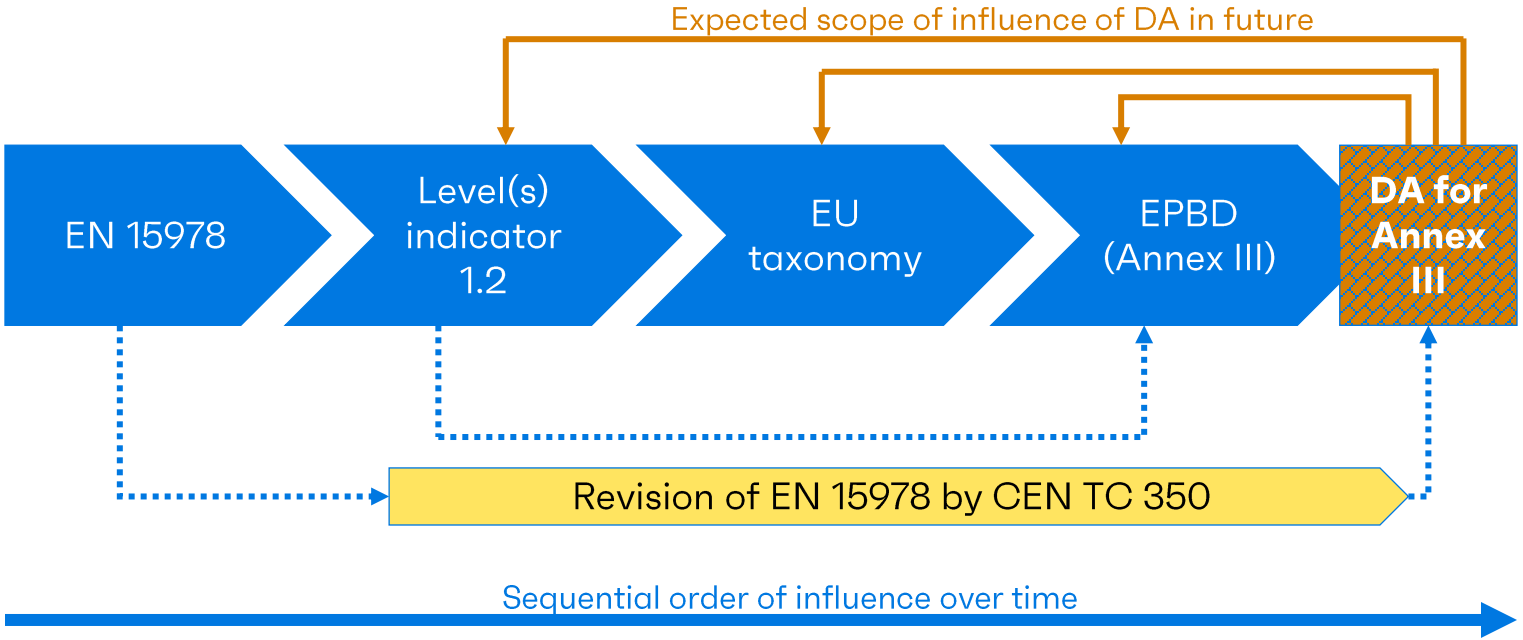


Röck M, Saade MRM, Balouktsi M, Rasmussen FN, Birgisdottir H, Frischknecht R, et al. Embodied GHG emissions of buildings– The hidden challenge for effective climate change mitigation. Appl Energy 2020;258:114107. doi: https://doi.org/10.1016/j.apenergy.2019.114107

The EPBD recast is linked to other EU initiatives

There is an interlink between EN15978, Level(s) indicator 1.2, EU taxonomy and EPBD recast (LC-GWP)

Not the main focus in the study!



Several articles in the EPBD recast relates to LC-GWP

Article 7(2)
Member States shall ensure that the life-cycle GWP is calculated in accordance with Annex III and disclosed in the energy performance certificate of the building:
(a) from 1 January 2028, for all new buildings with a useful floor area larger than 1000 m2;
(b) from 1 January 2030, for all new buildings.

Article 7(3)
The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend Annex III to set out a Union framework for the national calculation of life-cycle GWP with a view to achieving climate neutrality. The first such delegated act shall be adopted by 31 December 2025.

Annex III (shortened)
For the calculation of the life-cycle GWP of new buildings [...], the total life-cycle GWP is [...] for each life-cycle stage expressed as $kgCO_2eq/(m^2)$ (of useful floor area) calculated over a reference study period of 50 years. The data selection, scenario definition and calculations shall be carried out in accordance with EN 15978 (EN 15978:2011 [...]. The scope of building elements and technical equipment is as defined in the Level(s) common EU framework for indicator 1.2. Where a national calculation tool or method exists, [...] , that tool or method may be used to provide the required disclosure. Other calculation tools or methods may be used if they fulfil the minimum criteria established by the Level(s) common EU framework. Data regarding specific construction products calculated in accordance with Regulation (EU) No 305/2011 [...] shall be used when available.

Part I on LCGWP methodology

Article 7(5)
By 1 January 2027 Member States shall publish and notify to the Commission a roadmap detailing the introduction of limit values on the total cumulative life-cycle GWP of all new buildings and set targets for new buildings from 2030, considering a progressive downward trend, as well as maximum limit values, detailed for different climatic zones and building typologies.
Those maximum limit values shall be in line with the Union's objective of achieving climate neutrality.
The Commission shall issue guidance, share evidence on existing national policies and offer technical support to Member States, at their request.

Part II on roadmap

Link to the EPBD recast; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024L1275

Timeline related to the LC-GWP provisions

April 2024

EPBD is formally adopted.

May 2024

Publication of the EPBD in the OJ & enter into force, with a 2 year transposition period. Directive - EU - 2024/1275 - EN - EUR-Lex (europa.eu)

May 2026

Member States must have transposed the EPBD recast in their national legislation

January 2028

> Buildings over 1000m2 useful floor area

Member States shall ensure that life-cycle GWP is calculated by Annex III and disclosed in the energy perf. certificate.

(Article 7, 2.)

December 2025

The Commission is empowered to adopt delegated acts for a Union framework for the national calculation of life-cycle GWP.

(Article 7, 3.)

January 2027

Member States shall publish and notify the Commission of a roadmap over the introduction of limit values & targets

(Article 7, 5.)

January 2030

> All new buildings

Member States shall ensure that life-cycle GWP is calculated in accordance with Annex III (and DA) and disclosed in the energy perf. Certificate + **Limit values** for all new buildings

(Article 7, 2. + Article 7, 5.)

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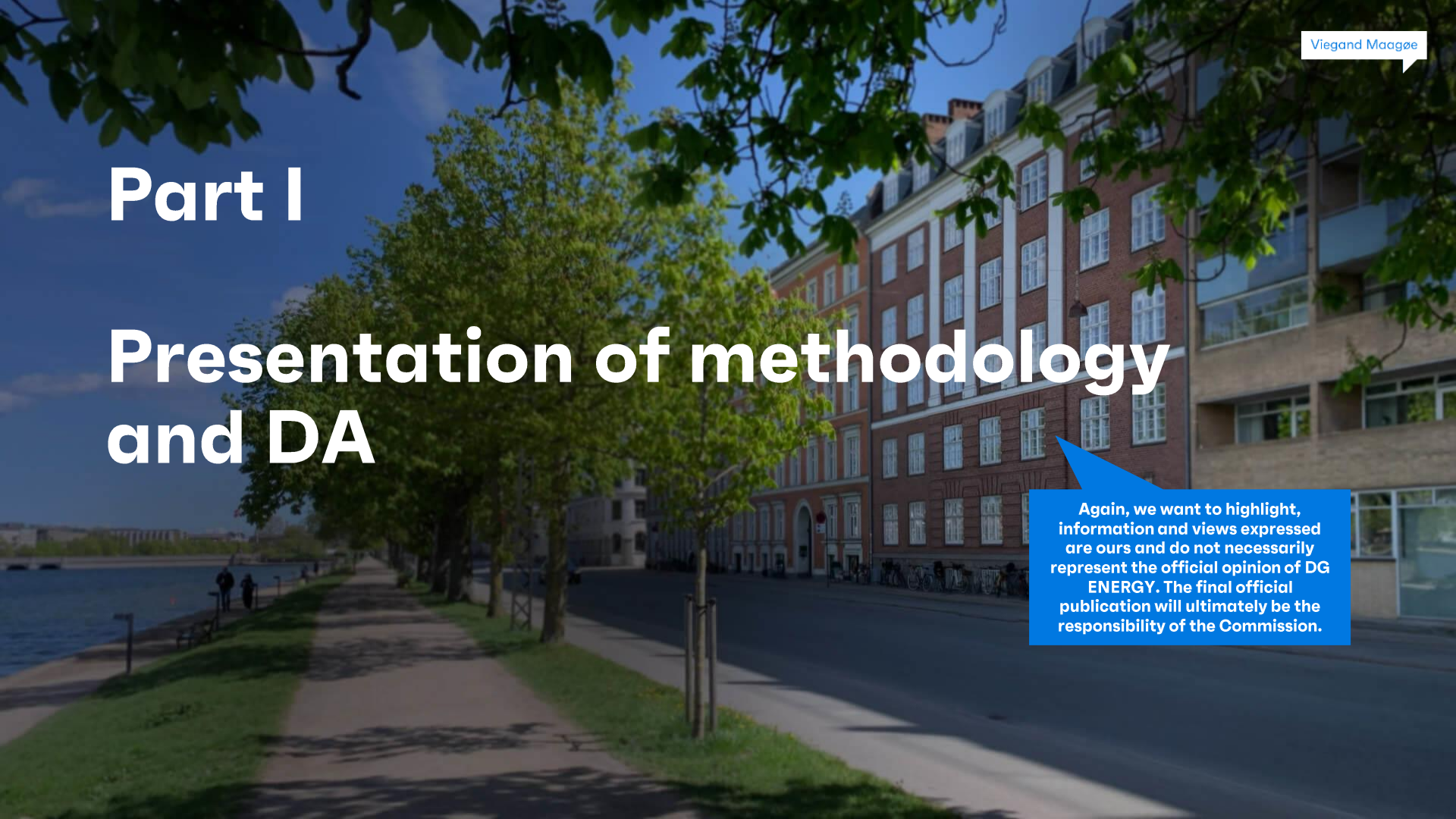

Part I

Presentation of methodology and DA

Again, we want to highlight, information and views expressed are ours and do not necessarily represent the official opinion of DG ENERGY. The final official publication will ultimately be the responsibility of the Commission.

Legal text – Article 7(2)

Defines that ***all new buildings*** shall declare a LC-GWP calculation, from either 2028 or 2030.

Article 7(2)

Member States shall ensure that the life-cycle GWP is calculated in accordance with Annex III and disclosed in the energy performance certificate of the building:
(a) from 1 January 2028, for all new buildings with a useful floor area larger than 1000 m2;
(b) from 1 January 2030, for all new buildings.

- From the text, it is understood that;
  - ***all new buildings*** must have an LC-GWP assessment
  - ***if these new buildings have an EPC****, then the LC-GWP result must also be displayed there*
- The only possible exemptions to the requirements are mentioned in Article 7(4);
  - buildings for which applications for building permits or equivalent applications have ***already been submitted*** within the deadlines referred to in paragraphs 1 and 2
- Article 2(1) in the EPBD defines building as: “a roofed construction having walls, for which energy is used to condition the indoor environment;”

Legal text – Annex III and Article 7(3)

Annex III presents the calculation method for the LC-GWP declaration. Article 7(3) empowers the Commission in developing a delegated act amending Annex III to set out a union framework.

Annex III (shortened)

For the calculation of the life-cycle GWP of new buildings […], the total life-cycle GWP is […] for each life-cycle stage expressed as $kgCO_2eq/(m^2)$ (of useful floor area) calculated over a reference study period of 50 years. The data selection, scenario definition and calculations shall be carried out in accordance with EN 15978 (EN 15978:2011 […]. The scope of building elements and technical equipment is as defined in the Level(s) common EU framework for indicator 1.2. Where a national calculation tool or method exists, […] , that tool or method may be used to provide the required disclosure. Other calculation tools or methods may be used if they fulfil the minimum criteria established by the Level(s) common EU framework. Data regarding specific construction products calculated in accordance with Regulation (EU) No 305/2011 […] shall be used when available.

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Aim of the DA

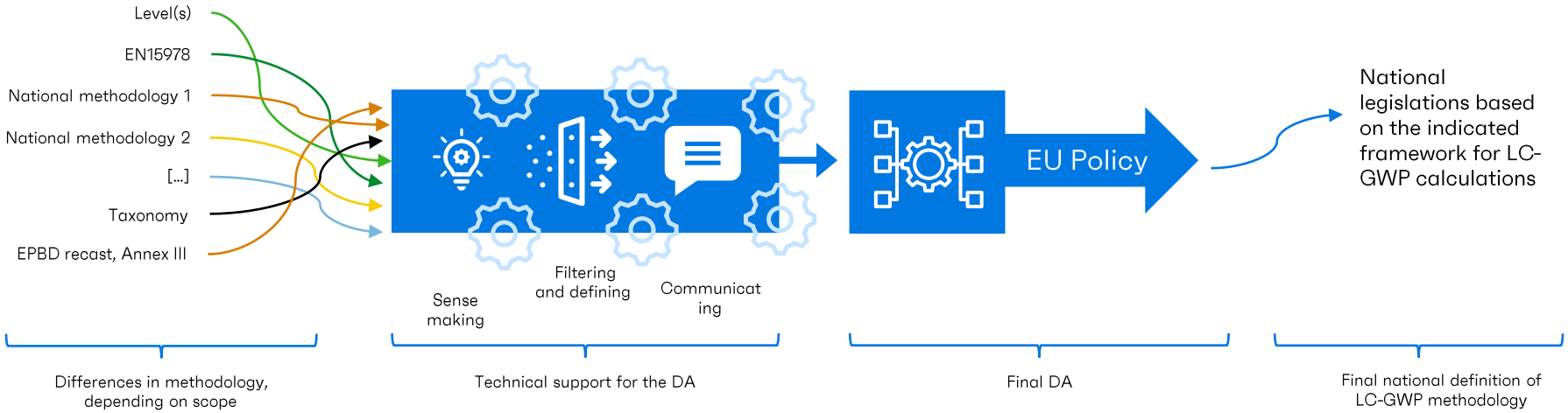
A harmonized approach, by setting out a framework aiming at a transparent and consistent LC-GWP calculation methodology.

Support Member States and encourage a transparent and consistent LC-GWP calculation method.

- Clarify **legal terms** related to Article 7(2) and Annex III.
- Clarify **technical terms** related to Article 7(2) and Annex III.
- Clearly define a **minimum harmonized framework**
- Highlight possible flexibility with **methodological choices** related to Article 7(2) and Annex III
- Aim is **NOT** to provide a **detailed step by step methodology** for doing and actual LCGWP calculation – but to provide the framework for the method.

Aim of the DA

A harmonized approach, combining different endings to one framework.

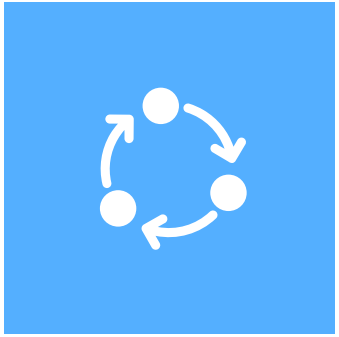


List of issues

Possible clarifications for the DA – elaborated in detail on the next slide.

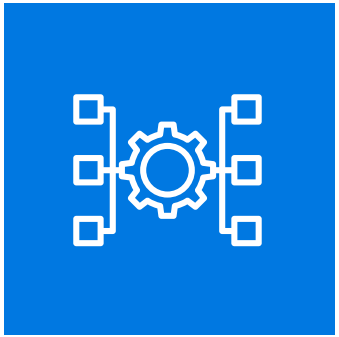
Legal clarification

- Which buildings
- Reference to EN15978
- National methodologies
- (National) tools
- Data to be used till CPR is in place



Methodology

- **Floor area**
- Dynamic or static approach
- Issue of accuracy and completeness



Minimum harmonized framework

- **Scope of lifecycle stages and modules**
- Clear description of approaches within the modules
- **Scope of building elements**

Other

- When to carry the assessment out
- How to present the result, and which indicator to use
- Reporting

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Legal clarifications

Legal clarifications

Related to Annex III, which the DA shall amend.

Scope of *which* buildings

- All new buildings
- Reference service life for buildings with a shorter expected lifetime than 50 years

Reference to EN15978(:2011)

- Without a year, so the most updated one is valid.
- Until the revised EN15978 is ready, the DA shall highlight some elements like description of the modules and the building model.

National methodologies and tools

- Put clear minimum requirements on national tools and methods.
- For the issue about the existing national methodologies and tools is not to be discussed today but will be discussed with the MSs at a later stage.

Questions for the discussion later:

Are there any further elements in the legal text which are unclear?

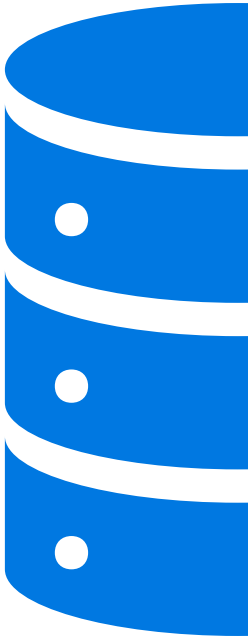
Do you have some thoughts on lifetime shorter than 50 years?

Legal clarification on data

Preference for Construction Product regulation (CPR) data

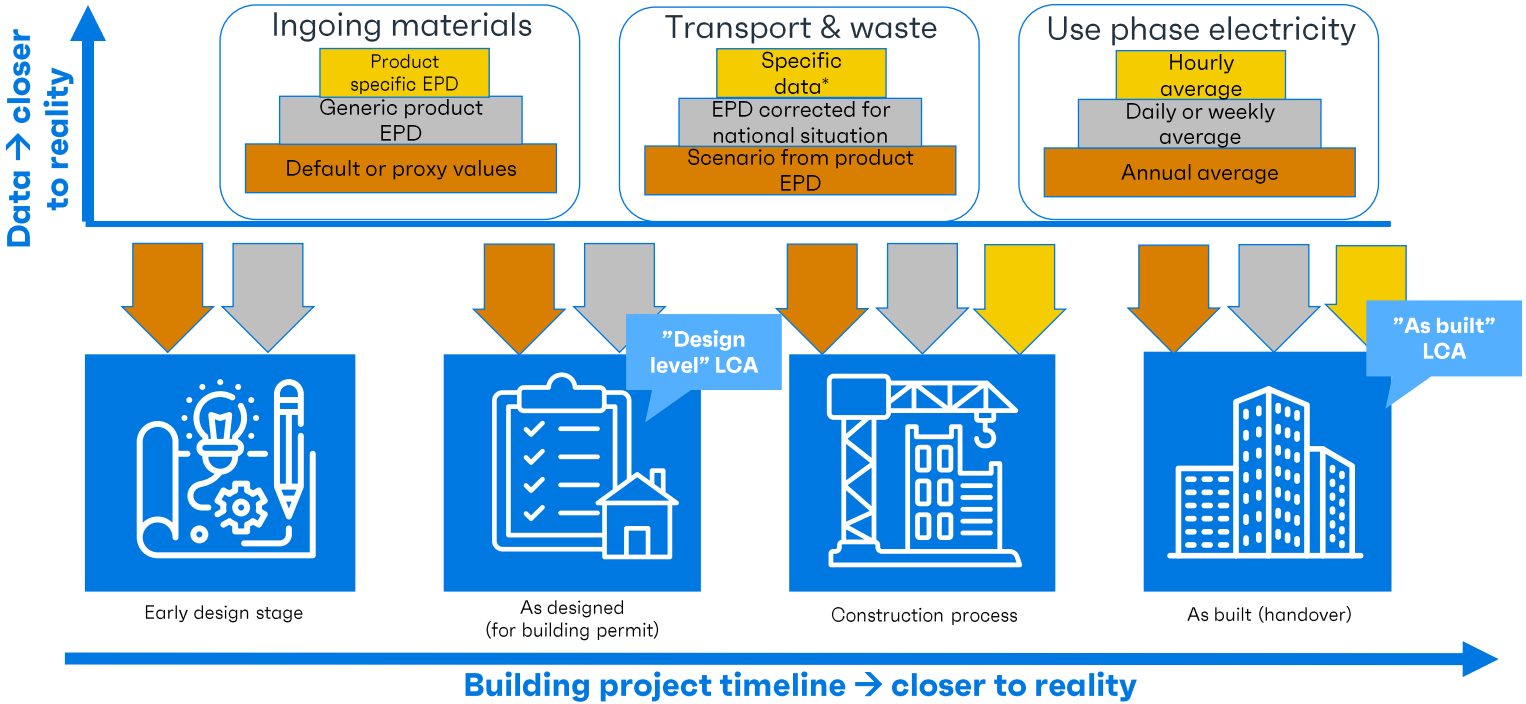
Annex III: *"Data regarding specific construction products calculated in accordance with Regulation (EU) No 305/2011 [...] shall be used when available"*

- CPR sets out a harmonised assessment method for environmental characteristics for different product categories – it will take some time.
- Until then, EPDs according to EN 15804.
- EPD data from other countries is fine, but check and modify if transport (module A4) and end-of-life (module C1-C4) data needs to be altered for the situation of the importing country.
- Suggest a zero-carbon default value for reused building elements.
- Try to fill data gaps with conservative default values.



Environmental data

Data quality levels and how they can improve as the project progresses



*Actual site & national environmental data used

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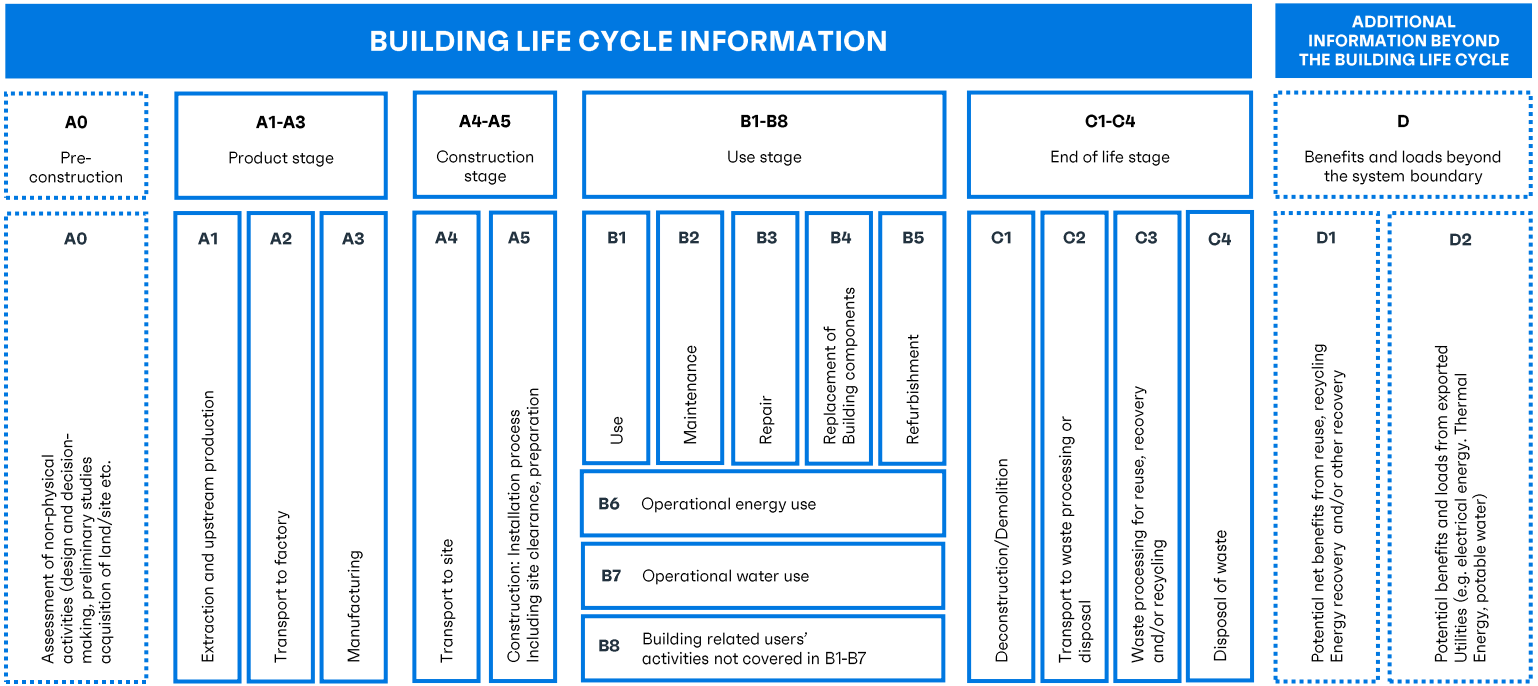
Minimum harmonized framework

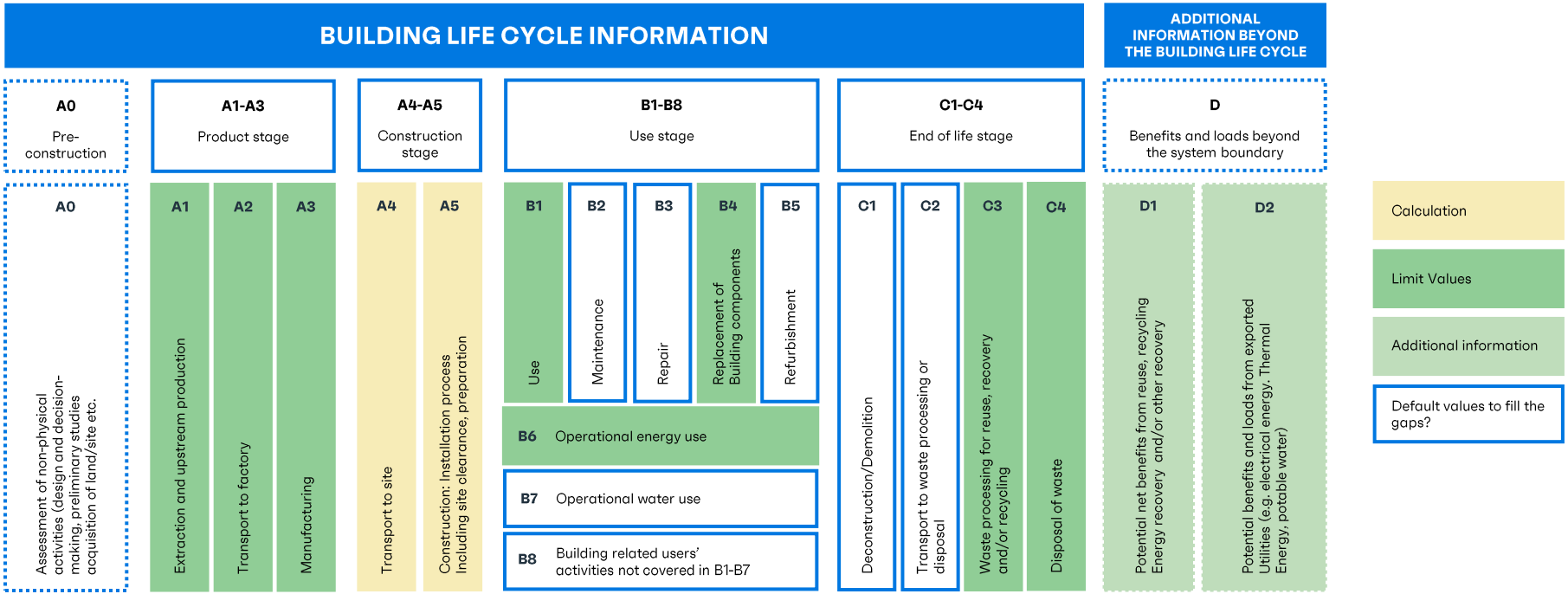
Scope of life cycle stages and modules

Overview of the life cycle stages in EN15978



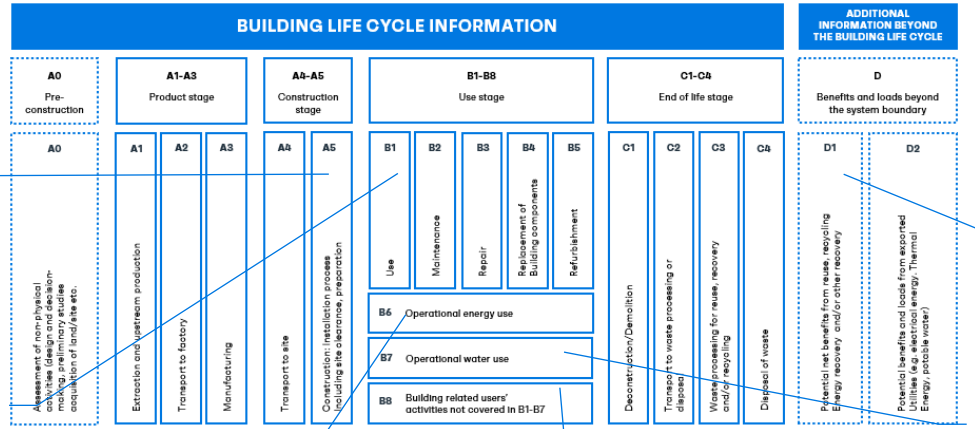
Scope of life cycle stages and modules

Overview of the proposed minimum requirement of modules



Scope of life cycle stages and modules

Presentation of the sub-modules (current status of the **pr**EN15978)



A5.1: Pre-construction demolition

A5.2: Construction activities

A5.3: Waste and waste management

A5.4: Transport of construction workers

B1.1: Emissions from materials and carbonation

B1.2: Fugitive emissions of refrigerants

B6.1: Regulated* building-integrated systems (services)

B6.2: Non-regulated* building-integrated systems (services)

B6.3: Other energy use related to building user activities

B8.1: Transport of persons to and from the building

B8.2: Charging of electric vehicles within the building site

B8.3: Others, such as use of "consumables" like paper for offices, or furniture and equipment not fixed to the building

D1.1: Reuse

D1.2: Recycling

D1.3: Energy recovery

B7.1: Essential building-integrated systems

B7.2: Other building-integrated systems

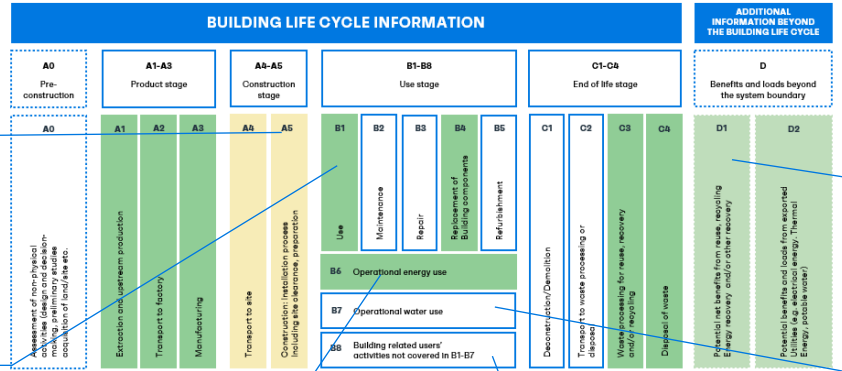
B7.3: Non-building-integrated systems

Scope of life cycle stages and modules

Overview of the included sub-modules in the minimum harmonized framework

Question for the discussion later:

What do you think about the scope of modules?



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D1.2: Recycling

D1.3: Energy recovery

Further resolution within B6.1

Clarity needed to ensure comparability of results

- Currently EPBD “regulated” building services are not covered equally in all Member States.
- If just translating EPC data into carbon, then need to say which emissions come from which services.
- Any dynamic decarbonization scenario used for grid electricity/district heat should be specified.
- **New issue**: how to handle building-integrated photo voltaic (BIPV), the relation between embodied and operational emissions?

Table 2 — Example of modules for reporting of energy use from building services considered in the energy performance calculation according to EN ISO 52000-1

	Residential Buildings		Non-Residential buildings	
Building service	**Regulated[a]**	**Sub-module**	**Regulated[a]**	**Sub-module**
Heating	Yes	B6.1	Yes	B6.1
Cooling	Yes	B6.1	Yes	B6.1
Ventilation	Yes	B6.1	Yes	B6.1
Humidification	Yes	B6.1	Yes	B6.1
Dehumidification	Yes	B6.1	Yes	B6.1
Domestic hot water	Yes	B6.1	Yes	B6.1

Question for the discussion later:

Do you have more boundaries and scenarios in EN15978, you see being relevant to specify in the DA?

Shall the DA specify how the decarbonization scenarios for energy have to be defined?

Minimum scope of building elements (building model)

How to chop up a building into its parts?

Complexity of building model:

- Buildings are highly complex and unique.
- Annex III specifies Level(s) indicator 1.2 to define the scope of building elements (v. broad).
- Need to focus on the big numbers first.
- Cut-offs criteria could be defined (e.g. by mass or by value or by type of product, such as screws).

Issue:

- Counting more elements means more work, and a higher carbon footprint, but gives a better view on the distribution of the emissions.
- Counting less elements, or the same ones, but doing it incompletely means less work and a better result!
- Need to set a clear minimum scope so that all results can be reasonably compared.

Minimum scope of building elements (building model)

Level(s) scope of building elements is specified, but need a realistic minimum scope.

This is our recommended minimum scope of building elements for the DA (except orange):

Building components	Sub-components
Foundations (substructure)	Piles
	Basements
	Retaining walls
Loadbearing structural frame	Frame (beams, columns and slabs)
	Upper floors
	External walls
	Balconies
Non-load bearing elements	Ground floor slab
	Internal walls, partitions and doors
	Stairs and ramps
Facades	External wall systems
	Cladding and shading devices
	Façade openings (including windows and external doors)
	External paints, coatings and renders

Question for the discussion later:

Why is it so difficult to get a bill of materials? Could there be a link to the cost calculation?

Building components	Sub-components
Roof	Structure
	Weatherproofing
Parking facilities (when independent construction of the assessed building)	Above ground and underground (within the curtilage of the building and servicing the building occupiers)
Fittings	Sanitary fittings
	Ceilings
	Wall and ceiling finishes
	Floor finishes, coverings and coatings

Minimum harmonized framework

Possible future-proof approach to take

- The scope can also be better harmonised by including all life cycle stages, and all building components, but keeping it simple for practitioners by using default values to fill gaps for components or modules.
- This ensures, that the whole life cycle of a building is declared, - find data to fill the gaps.
- Start with conservative generic values and then get more precise over the years, which also can incentivize to more precision.
- Requires that MSs define the default assumptions.
- Beneficial to have the whole life cycle defined → for the setting of limit values (to be handled in part II of this webinar).

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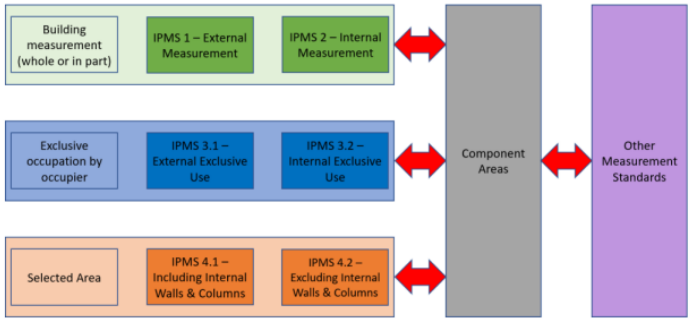
Methodology clarifications

Floor area

A common definition of floor areas via IPMS all buildings standard

- Floor area affects LC-GWP results ($kgCO_2eq./m^2$).
- More area counted, better the result…
- Each Member State has their own approach.
- DA not expected to change this, but:
  - Could oblige MSs to describe their floor areas for different building types in terms of IPMS component areas.
  - Basically the translation of the purple box into the grey box.



IPMS structure

Component Area A (columns, walls and notional boundaries)	Area A1: Notional boundary
	Area A2: External structural elements
	Area A3: Inner-surface adjustment
	Area A4: Internal structural elements
	Area A5: Internal non-structural elements
Component Area B (vertical penetration areas)	Area B1: Vertical circulation areas
	Area B2: Vertical technical areas
Component Area C (technical areas)	
Component Area D (sanitary areas)	
Component Area E (horizontal circulation areas, standard)	
Component Area F (primary areas)	
Component Area G (secondary areas)	Area G1: Amenity areas
	Area G2: Ancillary areas
Component Area H (Other areas)	Area H1: Other areas (general)
	Area H2: Other areas (construction)
	Area A3: Other areas (standard facilities)

Question for the discussion later:

Do you have additional information about the dynamic vs. static approach?

Dynamic vs. static approach

An area with a lot of different positions.

Definition on static approach
Time-independent LCA method that aggregates environmental impacts over the building's life cycle without considering when they occur.

− Simplified approach

Easy to implement

\+ Most common approach

Definition on dynamic approach
Time-sensitive approach accounting the impacts related over time.

*Only for GWP fossil, and not on GWP biogenic, to ensure there is no imbalance in the carbon uptake and release.

− More complex

Requires additional information in the legislation

\+ More accurate picture over time, if well researched scenarios are in place

Takes likely changes in the future into account

Dynamic approach on energy

\+ Decarbonization scenarios for operational emissions are likely in place

Can support right choices between operational and embodied emissions

Dynamic approach on material

− Decarbonization scenarios are not in place

\+ Science and research works on this, for future implementation.

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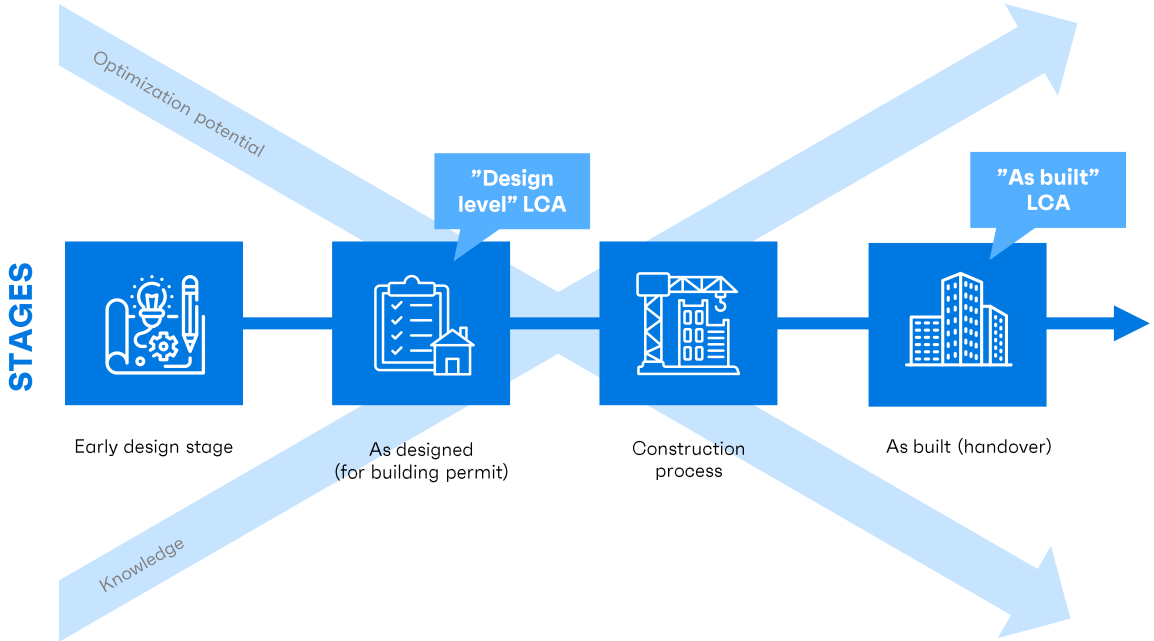
Other clarifications

When the calculation shall be submitted

Considerations about recommending a declaration both at design level and as built.



Question for the discussion later:

Do you see an issue in the results being reported twice?

Results

How detailed should reporting be?

- Have to report on total, fossil, biogenic and LULUC emissions.
- Add them together vertically.
- Add them up horizontally from A1 to C4.
- Report module D separately.

Level(s) current reporting format:

L2.7. Format for reporting the results of an assessment

The reporting format for GWP at each life cycle stage is presented in tabular form below.

Indicator	Unit	Product (A1-3)	Construction process (A4-5)	Use stage (B1-7)	End of life (C1-4)	Benefits and loads beyond the system boundary (D)
(1) GWP - fossil	kg CO_2 eq					
(2) GWP - biogenic	kg CO_2 eq					
GWP – GHGs (1+2)	kg CO_2 eq					
(3) GWP – land use and land use change	kg CO_2 eq					
GWP – overall (1+2+3)	kg CO_2 eq					

Detail 1	A1-C4																						D			
Detail 2	A1-A3			A4-A5					B1-B7											C1-C4				D			
Detail 3	A1-A3			A4	A5				B1		B2	B3	B4	B5	B6		B7			C1	C2	C3	C4	D1		D2	
Detail 4	A1	A2	A3	A4	A5.1	A5.2	A5.3	A5.4	B1.1	B1.2	B2	B3	B4	B5	B6.1*	B6.2	B6.3	B7.1	B7.2	B7.3	C1	C2	C3	C4	D1.1	D1.2	D1.3	D2

- "Detail 2" is current Level(s) indicator 1.2 reporting format. Level(s) can improve on this.
- Difference in the level of detail in the EPC and the documentation in the building code.

The unit of the LC-GWP calculation is defined to be:
$kgCO_2$-eq/m^2 for a period of 50 years

Question for the discussion later:

Which reporting level of results do you prefer, detail 2, 3 or 4?

Reporting example

Recommendation on a minimum approach for the reporting of the LC-GWP calculation.

Question for the discussion later:

Do you want our position on a reporting template for the DA, or shall it be up to the Member State if they want to have a requirement on the reporting?

Scope and system boundary		
Information of the building	Reference study period	Area

Embodied emissions			
Building component	Amount	Data on emissions	Total impact of building component

Operational emissions		
Energy use	Operational emission factor	Total impact of operational emissions

Transportation to construction site		
Distance pr. building component	Emission factor	Total impact of transportation

Construction site	
Waste related to each building component	Activities related to the construction site

Accuracy and completeness

When you see a carbon result for a material. How do you know that it covers all material used?

Issue:

- A series of data can be submitted as part of LCGWP inputs.
- Lots of data. How to know it is giving the complete picture.
- There may be “numbers” for all key components, but how to know if it is covering 100% (or any other % of the real total).

What can help?

- Try to link carbon calculation to bill of materials reporting (ICMS-3).

Recommendation for the DA:

- Create awareness and oblige some definition of completeness - then let MSs develop their chosen approach

For the discussion later:

There doesn’t seem to be ONE good way to ensure completeness and accuracy. Please share, if you have a good approach!

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Part I

Discussion of LC-GWP methodology and DA

Rules for the discussion:

- Input for the discussion in the Q&A-function
- Information material in the chat-function

Discussion of LC-GWP methodology and DA

Overview what we have come around – please share your thoughts in the chat (there is also the chance to summit your comments in the questionnaire after the webinar).

Are there any further elements in the **legal text** which are unclear?

Do you have some thoughts on lifetime shorter than **50 years**?

Related to the **scope of building** elements; why is it so difficult to get a bill of material? Could there be a link to the cost calculation?

Which reporting level of the **results** do you prefer, detail 2, 3 or 4?

What level of specification do you expect related to the **data** in the DA?

Do you have additional information about **the dynamic vs. static approach**?

Do you want our position on a **reporting template** for the DA, or shall it be up to the Member State if they want to have a requirement on the reporting?

What do you think about the **scope of modules**?

The question about **when** - do you see an issue in the results being reported twice?

Do you have more **boundaries and scenarios in EN15978**, you see being relevant to specify in the DA?

Shall the DA specify how the **decarbonization scenario for energy** have to be defined?

There doesn't seem to be ONE good way to ensure **completeness and accuracy**. Please share, if you have a good approach!

Several articles in the EPBD recast relates to LC-GWP

Article 7(2)
Member States shall ensure that the life-cycle GWP is calculated in accordance with Annex III and disclosed in the energy performance certificate of the building:
(a) from 1 January 2028, for all new buildings with a useful floor area larger than 1000 m2;
(b) from 1 January 2030, for all new buildings.

Article 7(3)
The Commission is empowered to adopt delegated acts in accordance with Article 32 to amend Annex III to set out a Union framework for the national calculation of life-cycle GWP with a view to achieving climate neutrality. The first such delegated act shall be adopted by 31 December 2025.

Annex III (shortened)
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Part I on LCGWP methodology

Article 7(5)
By 1 January 2027 Member States shall publish and notify to the Commission a roadmap detailing the introduction of limit values on the total cumulative life-cycle GWP of all new buildings and set targets for new buildings from 2030, considering a progressive downward trend, as well as maximum limit values, detailed for different climatic zones and building typologies.
Those maximum limit values shall be in line with the Union's objective of achieving climate neutrality.
The Commission shall issue guidance, share evidence on existing national policies and offer technical support to Member States, at their request.

Part II on roadmap

Link to the EPBD recast; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024L1275

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Viegand Maagøe
5 min break

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Part II

Presentation of LC-GWP roadmap and guidance

Legal text – Article 7(5)

Defines that Member States shall publish a roadmap introducing limit values for all new buildings from 2030 with a progressive downward trend. The commission will issue guidance.

Article 7(5)

By 1 January 2027 Member States shall publish and notify to the Commission a roadmap detailing the introduction of limit values on the total cumulative life-cycle GWP of all new buildings and set targets for new buildings from 2030, considering a progressive downward trend, as well as maximum limit values, detailed for different climatic zones and building typologies.
Those maximum limit values shall be in line with the Union's objective of achieving climate neutrality.
The Commission shall issue guidance, share evidence on existing national policies and offer technical support to Member States, at their request.

Timeline

- Roadmap to be submitted by January 1st 2027 latest, detailing the introduction of limit values and target values.
- The limit values must be in force no later than 2030.

Link to the EPBD recast; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024L1275

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Those maximum limit values shall be in line with the Union's objective of achieving climate neutrality.
The Commission shall issue guidance, share evidence on existing national policies and offer technical support to Member States, at their request.

Our interpretation of the legal text right now:

- Defining limit values on building level and not on the building stock
- The *target* is a *series of limit values* from 2030 with downward trend, e.g. a limit value in 2030 followed by a lower value in 2033, in 2036, etc.
- Not an obligation of having another *target value* as a more ambitious limit value.

For the discussion later:

Let us know if there are more elements in the legal text you want to have clarified!

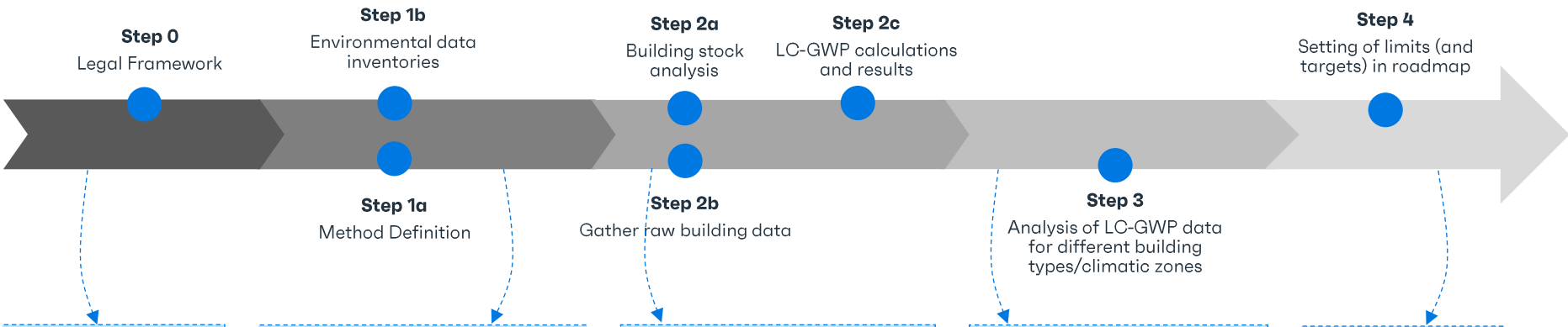
Link to the EPBD recast; https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32024L1275

Viegand Maagøe

The fundamental proces for an LC-GWP roadmap

Viegand Maagøe

Process for setting LC-GWP limit values



Step 0 – Legal framework

Create legal basis for final implementation of limit and target values for the LC-GWP calculation.

Step 1 – Definition of LC-GWP methodology and environmental data

Needs to be clearly defined to allow for a consistent and coherent approach.

Closely linked to the methodology for LC-GWP and the delegated act.

Step 2 – Gathering of LC-GWP building data

Get as much LC-GWP calculation data for buildings (considering building typology and climatic zone) as possible, to have limits based on a representative reality.

Step 3 – Analysis of data

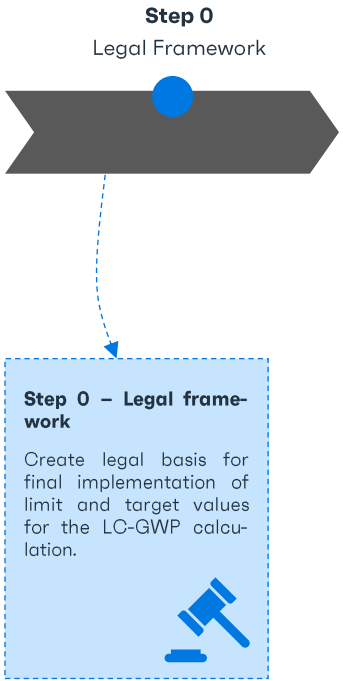
Evaluate the spread of results and decide on where appropriate limits and targets can be set – nuanced for climate zone and building typology, as necessary.

Step 4 – Setting of limit values and future values (targets)

Clear signal to the market both for today and the future.

Guidance on step 0 – Legal framework

Actions towards the implementation of limit values in their national legislation.



Expected content of guidance for step 0 – Legal framework:

- Clarify the interpretation of the legal text
- Timing of the implementation of national legislation, both for the LC-GWP methodology (Article 7(2,3) and the limit values Article 7(5)).
- Non-compliance
  - Guidance will inform about the need
  - Up to the Member State to define
  - "Design level LCA" can provide early knowledge on LC-GWP of a building
- Roles and responsibilities

Roles and responsibilities

General, do we see these roles and responsibilities – might differ between Member States.

Member States responsibility on developing the regulation

Research and science might support Member States with analysis

National authorities will typically handle the practical implementation of the regulation

Data base responsible, typical on authority level

Control and verification, typical on authority level to define, and on municipal level to proceed with

National authorities will typically be responsible for creating and maintaining a platform for relevant documentation

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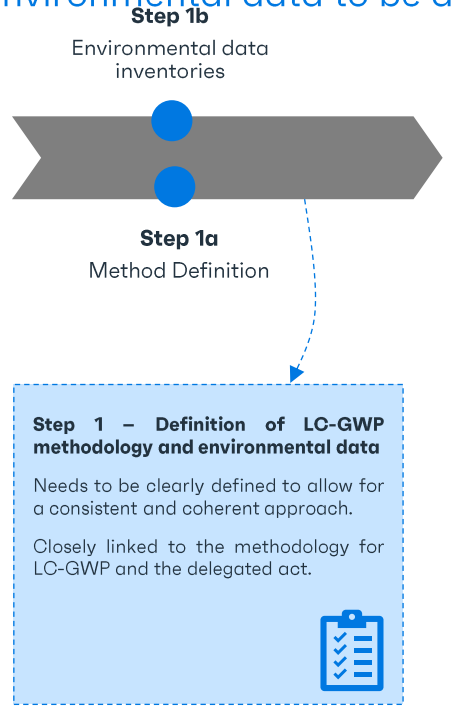
Guidance on step 1 – Methodology and data

The fundamental step for well established limit values, is to have a methodology in place and environmental data to be able to perform the calculation.



Expected content of guidance for step 1 – Method definition and environmental data inventories:

Methodology and data used for the LC-GWP calculation needs to be the same for setting the values, to set limit values with the intended ambition.

- Step 1a is linked to the definition in the DA for the methodology, and the national legislation (Part I of the webinar).
- Step 1b is linked to the environmental data which needs to be available to perform the calculation. Member States shall start this work now.

In our opinion it is not possible to finalize step 2 if step 1 is not in place.

Fast track for step 1

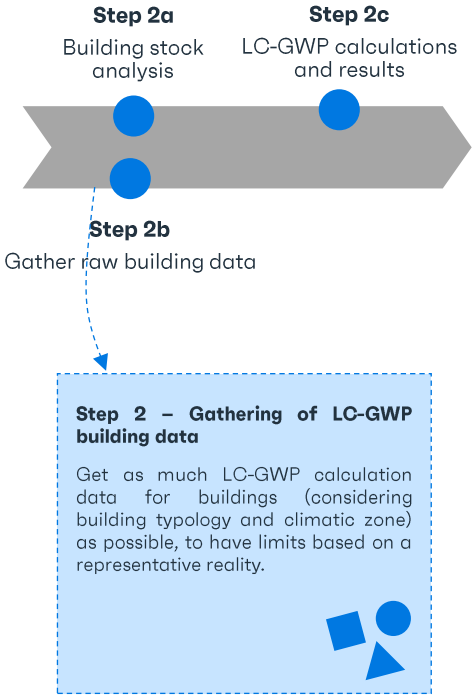
Consider collaboration with other Member States.

Start with a simplified approach, with a lot of default values.

Indicate in your roadmap, when the approach will be adjusted to a more detailed one.

Guidance on step 2 – Gather building data

Representative cases of LC-GWP building data needs to be gathered.



Expected content of guidance for step 2 – Gathering on LC-GWP building data:

Data referred here to, is data about the actual building, to set limit values out of some LC-GWP calculation cases

- **Step 2a** requires understanding of the building stock.
- **Step 2b** is the gathering of data, like bill of materials etc. to be able to do step 2c.
- **Step 2c** is the actual LC-GWP calculations of the cases, based on cases representing the building stock, and with following the methodology of the national legislation (step 1).

- Step 2 is time consuming
- Step 2a and 2b can be started, even when step 1 is not final
- Sufficient number of cases

Question for the discussion later:

Please share your experience in how to gather cases or data for cases in a good way, for future analysis of setting limit values!

Fast track for step 2

Work with generic buildings, which can be scaled up to the building stock. Focus on few precise buildings, rather than a huge amount.

The case bank can be extended later on by adding more cases.

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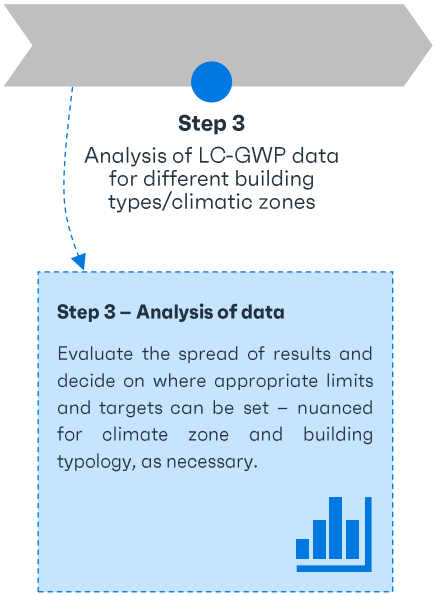
Guidance on step 3 – Analysis of LC-GWP data

Analyze the data, to understand the impacts of the buildings.



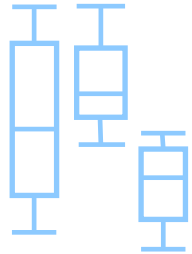
Expected content of guidance for step 3 – Analysis of data:

All LC-GWP calculations have been done (step 2) and now it is about analysing the cases, by looking into:

- Different building typologies
- Differences in climatic zones

To decide, if there shall be a separation of the limit values or one limit value shall cover all buildings.

The spread of results for LC-GWP calculations/cases should be statistically analyzed and this will form the basis for setting the limit values (step 4).

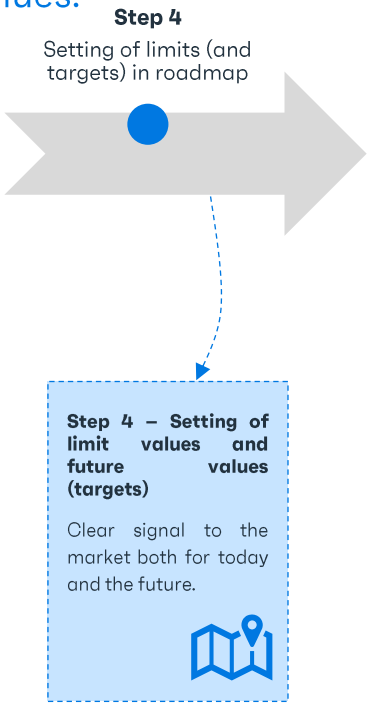


Question for the discussion later:

Do you expect more information on analysis of cases, or is this suitable?

Guidance on step 4 – Setting limit values

The most political step as it is about the ambition level – how to set values in 2030, and future values.



Expected content of guidance for step 4 – Setting limit and target values:

- A maximum limit value needs to be set which all new buildings individually must meet.
- Nuanced limit value
- Transparency about the ambition level
- Communication of values
- Interval for the target values is recommended to be 2-5 years, up to Member States to define, and shall be argued for in the roadmap.
- As data and methodology might change after 2030, it is recommended to indicate the value by an ambition level, rather than actual values.

Get inspired

Get more information to get started well with the roadmaps!

Question for the discussion later:

Do you know other studies to share relevant for doing roadmaps and setting limit values?

Different projects working with supporting Member States in the development of roadmaps, like:

Indicate project

https://www.indicatedata.com/

Their first report is published here.

World Green Building Council'

See their work related to roadmaps here.

Updating the methodology and limit values

Any modifications to the methodology that would tend to increase LC-GWP results have to be communicated well, to both politicians and construction market, as they will affect the results.

Issue:

- Due to limitations in data and experience, the initial version of national methodologies may be simplified, more restricted, or based on generic assumptions.
- If the first set of limit values for 2030 is based on this scope, any changes to the scope will affect the limit values.
- Trade-off between the political goal of 0, where LCA practitioners want a more complete analysis (but normally a higher number) to get closer to reality

Recommendation:

- ✓ Clear communication
- ✓ Important to be aware on this issue
- ✓ Traceability: Transparent presentation of the methodology and results across different modules will help communicate these changes effectively
- ✓ The roadmap shall present how MSs want to work with it, and how they want to update the limit values.

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Recommended timing towards limit values

Step	2024	2025	2025	2026	2026	2027	2027	2028	2028	2029	2029	2030
	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st half	2nd half	1st Jan.
Step 0 – Legal framework								Article 7(2) a.				Article 7(2) b. / (5)
Step 1a – Method definition			DA									
Step 1b – Environmental data inventories												
Step 2a – Building stock analysis												
Step 2b – Gather raw building data												
Step 2c – LC-GWP calculations and results												
Step 3 – Analysis of LC-GWP calculations												
Step 4 – Setting limit values										National scrutiny period		Article 7(5)
Roadmap					Article 7(5)							

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Recommended timing towards limit values

Step	2024	2025	2025	2026	2026	2027	2027	2028	2028	2029	2029	2030
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Step 0 – Legal framework								Article 7(2) a.				Article 7(2) b. / (5)
Step 1a – Method definition			DA									
Step 1b – Environmental data inventories												
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Step 4 – Setting limit values										National scrutiny period		Article 7(5)
Roadmap					Article 7(5)							

Question for the discussion later:

Any comments related to the timing towards setting limit values, and implementing a national roadmap?

- Limit values need to be in the legislation from 2030, so need to be established earlier depending on scrutiny periods.
- Light blue indicate when work shall be ongoing
- Dark blue areas indicate the time when a step should be finalized latest
- There is no requirement in Article 7(5) on updating the roadmap after 2027, but MSs can see it as their own individual strategic document.
- 2028/2029 might already give some real data for buildings over 1000m^2

Common roadmap template

Question for the discussion later:

Please share your thoughts to the common roadmap template!

Section	Content explained
Step 0 Legal	0.1 - Description of **legislative framework** – either already in place or in the process of being implemented. 0.2 - Describe planned **verification** and penalties for **non-compliance** with limit values. 0.3 - Specify **roles and responsibilities** for implementing limit values for new buildings.
Step 1.a Method	1.1 – Describe the national **LC-GWP methodology**, and potential **development** of it, **link** to the legislation 1.2 – Links to any more detailed **guidance documentation** for the calculation method and link to **software** that is obligatory or recommended to be used with the methodology. 1.3 – If **"fast track"** is chosen, when and how LC-GWP methodology is expected to be adjusted to a national methodology. 1.4 – Process for **changing the scope** of the methodology.
Step 1.b Data	1.5 - General description of and link to **environmental data inventories**, including source, number of datasets (Until data from CPR is available) 1.6 – Process for **updating** environmental data. 1.7 – If **"fast track"** is chosen, when national data is expected to be developed, and how.
Step 2.a Building stock	2.1 – Describe how **existing building stock** is characterized
Step 2.b Building data	2.1 – How **data on building level** (raw data of bill of materials) will be harvested from recently completed new buildings, which building typologies, amount etc. 2.2 – **Progress** to date, and future planned actions.
Step 2.c LC-GWP calculations	2.3 – Plan for how "raw" building data (step 2.b) will be linked to environmental product data (step 1b) – and **calculations for the LC-GWP for buildings** will be done. 2.4 – **Progress** to date, and future planned actions.
Step 3 Analysis	3.1 – **Number of cases** expected before proceeding to step 4 . 3.2 – How will data from step 2.c be grouped, disaggregated and **analyzed**?
Step 4 Setting limit values	4.1 – Describe **the ambition** and the logic behind the ambition of maximum limit values and target values. 4.2 - When analysis are done, highlight the best 10%, 25%, 50% (median), 75%, and 90%, so policymakers can use these values to better **understand results** of LC-GWP calculations. 4.3 – **Indicate limit values** for 2030, and **target values** – either numeric, or on an ambition level 4.4 – The roadmap shall indicate how often the limit values will be **updated** – and **the progressive downward trend** of these.
Future steps Beyond 2027	5.1 – Describe how LC-GWP data for new buildings will be **stored.** 5.2 – How will data gathered be used and analyzed to determine **future mandatory maximum limits and target values**? 5.3 – How to handle **changes** in methodology, data and scope.

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Part II

Discussion of LC-GWP roadmap and guidance

Discussion of LC-GWP roadmap and guidance

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Rules for the discussion:

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Let us know if there are more elements in the **legal text** you want to have clarified!

Please share your experience in how to gather **cases** or data for cases in a good way, for future analysis of setting limit values!

Do you expect more information on **analysis of cases**, or is this suitable?

Do you know **other studies** to share relevant for doing roadmaps and setting limit values?

Any comments related to the **timing** towards setting limit values, and implementing a national roadmap?

Please share your thoughts to the **common roadmap template**!

Several articles in the EPBD recast relates to LC-GWP

Viegand Maagøe

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Next steps

- Written comments and inputs after the meeting are welcomed, **deadline 1 November 2024**, send comments to **info@EPBD-WLC-guidance.eu** , preferable through follow up questionnaire: [Link to questionnaire]

- Slides and summary will be uploaded to: https://www.wlc-epbd-guidance.eu/

- Further consultations with Member States on the topic of LCGPW provision will happen at the EPBD Committee and expert group meeting in December 2024.

Thank you for attending this meeting and for your input!

info@WLC-EPBD-guidance.eu

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