Life-Cycle Global Warming Potential

SEAI response to anonymised comments raised during public consultation

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Sustainable Energy Authority of Ireland

SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective, and sustainable solutions to help Ireland's transition to a clean energy future. We work with Government, homeowners, businesses, and communities to achieve this through providing expertise, funding, educational programmes, policy advice, research, and the development of innovative technologies.

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Introduction
SEAI response to anonymised comments raised during public consultation held until June 2025 on the following documents published in relation to Life-cycle GWP.

Documents

- Recommendation on Ireland's LC GWP Methodology
- Recommendation on Ireland's National EC Database of Building Materials
- Life-Cycle Global Warming Potential Calculation Methodology

Report 1 'Recommendation on Ireland's LC GWP Methodology'

The objective of this report is to develop recommendations on a technical methodology for the calculation of the life-cycle GWP of buildings which can be applied in Ireland and support national alignment with the requirements outlined within Article 7(2) of the recast EPBD. Life cycle GWP, often referred to as Whole Life Carbon (WLC) is an indicator which quantifies the global warming potential of a building caused by carbon emissions along its full life cycle, including both operational and embodied emissions.

Report 2 'Recommendation on Ireland's National EC Database of Building Materials'

The purpose of this report is to review and provide detailed guidance on the best approach for the development and maintenance of a centralised national database for all common building materials and their embodied carbon emissions.

Life-Cycle Global Warming Potential Methodology

This document sets out SEAI's technical methodology for assessing GWP of buildings along their entire life-cycle. This methodology is in compliance with the provisions of the recast EPBD, the draft Delegated Act amending Annex III of recast EPBD, and draft Guidance on the life-cycle Global Warming Potential of new buildings (Article 7(2), (5) of the recast EPBD). It incorporates recommendations from Report 1 and 2 above.

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5.4.4 A5.4 - Transport of Construction Workers, Paragraph 2	Excludes all materials which are not covered by CPR, e.g. artwork, bespoke components, etc.		Sub module A5.4 relates to transportation of construction workers and is excluded from the scope of the Life-Cycle GWP calculation.
5.5.1 B1.1 - Materials Emissions and Removals, Paragraph 1 and 2	Not clear if both are to be added together i.e. 4% (cement) + 3% (concrete) = 7% over 50 years. Please clarify.		Carbonation is a Carbon Dioxide (CO2) sequestration process, happening when CO2 reacts with calcium hydroxide (Ca(OH)2), a product of cement hydration. It therefore happens in concrete due to the presence of cement in it. As outlined in section 5.5.1, the amount of CO2 sequestered due to carbonation over 50 years lifespan can be calculated as a rate of cement emissions (due to calcination or total) OR as a rate of concrete emissions. The two rates are not cumulative, but to be applied based on the values of emissions available. This will be further clarified in the next revision of the LC GWP Methodology.

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5.5.1 B1.1 - Materials Emissions and Removals, Paragraph 4	Not measurable – find a better way to assess. Must be machine assessable. Otherwise omit. Exposure must be based on Irish Driving Rain Index 2024		Carbonation can be measured for specific types of cement and concrete mixes using I.S. EN 16757. This can provide more specific values than the default rates presented in section 5.5.1. If this calculation method is applied, the assessor shall provide details of the calculation in order for it to be reviewed. SEAI LC GWP calculation tool will only use the default rates proposed and therefore the calculation of emissions related to module B1.1 will be automated and machine assessable. Concrete exposure classes are generally defined via EN 1992 – Eurocode 2.
5.5.1 B1.1 - Materials Emissions and Removals, Paragraph 5	Contradiction in terms? Carbonation is a non-reversible removal of carbon from atmosphere.		Section 5.5.1, paragraph 6 states "Removals from carbonation cannot be decarbonised.". Decarbonisation factors must not be applied to removals from carbonation, to avoid double counting.
5.5.1 B1.1 - Materials Emissions and Removals, Paragraph 7	Included in B1.2 below		Section 5.5.1, paragraph 7 covers carbon absorption from green roofs and facades. While section 5.5.2 covers fugitive emissions from refrigerant. The two topics are distinct and assess in different ways.

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5.5.1 B1.1 - Materials Emissions and Removals, Paragraph 7	The blowing agents used in insulation removed during the lifecycle of the building needs to be captured as these may be extremely damaging if landfilled or incinerated. Foam-based rigid insulations were generally inflated with CFCs prior to 1994. The CFCs must be extracted from the foam before incineration to prevent release to atmosphere. These insulation boards are frequently removed as part of refurbishment projects and at end of life. The full impact of captured CFCs, verified by a specialist CFC capture processor, could be offset against the embodied carbon of any removal/replacement to encourage the growth of specialist processing businesses. Demolition waste generated in advance of construction commencing is unlikely to be captured, but, given such an		Emissions arising from insulation blowing agents during the manufacturing stage are captured in modules A1-A3. As per section 5.5.1, paragraph 9 emissions arising from insulation blowing agents over the life-cycle of the building shall be calculated and included in module B1.1. All end-of-life impacts are captured in stage C.

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	important GHG source (equivalent to all the operational emissions from EU buildings in a year), it would be a major benefit to Ireland to facilitate this by allowing offsetting of captured GHGs (via Module A0, perhaps?). Philip Mosely to Darren Byrne.		

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Introduction	Iarnród Eireann welcome the publication of this guidance document and commend the Sustainable Energy Authority of Ireland (SEAI) and the project team for developing a robust and progressive framework. The establishment of a national methodology for Global Warming Potential (GWP) calculation is a critical step toward aligning Ireland's infrastructure delivery with both EU legislative mandates and broader climate neutrality objectives		Noted.
Section 5: GWP Methodology Recommendations Section 6.1: Summary of Criteria Considered Appendix D: Component Classification aligned with ICMS 3Section 7.3–7.4: GWP Tools and Comparative Analysis Findings	**Support for Carbon Assessment Tools in Transport Projects;** The guidance is strongly welcomed, particularly from the perspective of railway infrastructure, which encompasses a diverse range of assets including linear infrastructure (track, bridges, tunnels), station buildings, depots, and systems installations.		The methodology has been developed to satisfy the requirements of Article 7(2) of the recast EPBD, and therefore to be applied to the construction of new buildings. There is nothing preventing the LC GWP calculation methodology developed by SEAI from being applied to projects not covered by the recast EPBD, in the absence of Ireland's national specific guidance for infrastructural projects.

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	We recommend that the methodology provide further guidance or sector-specific examples on the application of carbon assessment approaches and tools to such complex, multi-asset projects. Standardising how lifecycle carbon is assessed across the various components and work packages associated with transport projects would greatly enhance more accurate and consistent application.		

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Section 3.2.2: International Cost Management Standards (ICMS 3)	**Alignment with ICMS and Lifecycle Assessment Tools** IE support the report's alignment with the International Cost Management Standard (ICMS 3), which is already mandated for use in Ireland. Ensuring that the national GWP methodology integrates closely with ICMS component classification, and the capital cost and carbon templates will improve the efficiency and transparency of carbon reporting. Furthermore, we recommend deeper clarification on how the methodology aligns with existing Life Cycle Assessment (LCA) tools and whether outputs from these tools can be seamlessly incorporated into ICMS-based reporting structures.		Alignment between the LC GWP methodology and ICMS3 is under development and is the subject of a position paper by SEAI. With regard to the alignment between the methodology and existing LCA tools, the methodology has been developed with the requirement to be tool agnostic as recommended by RPS in the "*Recommendation on a National GWP Methodology*" report. SEAI anticipate that a verification system will be put in place to validate the compliance of LCA tools with the requirements of the LC GWP methodology. This will allow a LC GWP calculation to be carried out using a validated LCA tool. How current existing tools will implement the methodology within their software packages is outside of the responsibility of SEAI.

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Section 10.1: Resources to support GWP assessment Section 5.3: LCA Stages (with link to project lifecycle) Figure 22: Evolution of LCA Tool Requirements during Project Stages	**Integration with Infrastructure Guidelines and Project Approval Processes** Iarnród Éireann suggest that the methodology could be aligned with existing infrastructure delivery processes, particularly the Infrastructure Guidelines. Explicitly linking LCA/GWP assessment stages with key project approval gates (e.g., Strategic Assessment, Preliminary and Detailed Business Case, Design and Procurement, Implementation, and Review) would clarify when specific carbon calculations are expected and what level of data accuracy is required. This alignment would facilitate early identification of high-carbon impacts and support low-carbon decision-making from project inception.		This LC GWP calculation methodology address the requirements of article 7(2) of the recast EPBD namely new buildings over 1000m2 from Jan 2028, and all new buildings from January 2030. There is nothing preventing the LC GWP calculation methodology developed by SEAI from being applied to projects not covered by the recast EPBD, in the absence of Ireland's national specific guidance for infrastructural projects. Mapping infrastructural project design stages against building project design stages is outside this specific SEAI scope of work. Iarnród Éireann may decide to undertake this mapping exercise to facilitate the implementation of the SEAI LC GWP calculation methodology in infrastructure projects in Ireland.

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Section 3.2.2: ICMS 3 and BIM integration Section 7.4: Comparative Analysis of Tools — Digital Integration Observations Figure 21: Relationship between Influence on WLC and Accuracy Over Time Figure 23: Features Desired in an Irish GWP Too	**Digital Integration with BIM** Given the increasing adoption of Building Information Modelling (BIM) in major infrastructure projects, IE advocate for enhanced digital integration between BIM platforms and GWP assessment tools. This will support more accurate, data-rich carbon modelling and reduce the manual effort required to produce assessments.		SEAI are exploring integration of BIM into GWP assessment tools.
Section 5.1.1: Reference Study Period Section 4.4 & 4.5: Stakeholder Consultations and Final Recommendations Section 10.2: Responsiveness and Methodology Evolution	**Flexibility for Infrastructure Lifespans** Railway assets often exceed the standard 50-year lifecycle reference period. The methodology should allow for flexibility or supplementary reporting for infrastructure with longer design lives. This would ensure that longer-lived assets are not disincentivised by standardised reference periods that may understate their carbon efficiency over time.		It is not acceptable to deviate from the LC GWP calculation methodology developed by SEAI for the purposes of complying with the requirements of the recast EPBD. There is no restriction to adapt the LC GWP calculation methodology developed by SEAI as long as any modifications and deviations are clearly documented. Results from adapted calculations shall be reported **separately** and **in addition** to results calculated in accordance with the mandatory requirements of the SEAI LC GWP calculation methodology.

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Section 5.1.4: Biogenic vs Fossil-Derived Carbon *Appendix C: LCA Modules and Indicator Coverage (EN 15804 reference)* *Section 10.3: Research Requirements — Supporting Indicators and Metrics*	**Reporting of Embodied Energy alongside Embodied Carbon** Embodied carbon figures alone may not reflect the total environmental burden, particularly where renewable energy is used in production. Materials or products may appear low-carbon but still have significant energy intensity, with implications for resource use and environmental performance. To that the SEAI would consider the disclosure of total embodied energy (in MJ or kWh), split into renewable and non-renewable sources, alongside GWP values in both the methodology and any future Building Energy Rating or environmental assessment outputs		The Life-Cycle GWP Calculation Methodology is being developed to satisfy the requirements of Article 7(2) of the recast EPBD and Annex III. We appreciate the very relevant and insightful comment. Although in the recast EPBD there is no requirement to include embodied energy in the LC GWP calculation methodology, the two metrics are tightly connected. For example, in relation to renewable energy sources all the impacts from materials, construction works, distribution, land use, etc. will be accounted for in the LC GWP. What is left out is whether the processes to produce and run the infrastructure are energy-efficient or not. In terms of materials used for the construction of the building, this can be addressed by the introduction of the weight/m² metric, which represents the materials use efficiency. In terms of operational energy consumption, this is addressed by reporting the energy consumption split into renewables and non-renewables sources in accordance with BER and EPC. In terms of energy consumption in the production of materials, it is assumed that the market drives efficiency and therefore production processes always aim at consuming the minimum amount of energy to reduce costs. As energy from renewable sources

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			scales up and becomes cheaper, it is assumed that the industry will move towards it because it will be economically advantageous. In conclusion, even though the methodology focuses on embodied carbon and its reporting, there is no restriction in calculating and reporting embodied energy results separately.
Section 10.1: Resources to Support GWP Assessment Section 10.2: Responsiveness –	**Awareness Training and Competencies** Awareness-raising across industry stakeholders is needed		Noted. Training and awareness campaigns will be developed in the near future

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Adapting to a Dynamic Landscape Section 4.5 and 6.1: Stakeholder Feedback and Summary Criteria Appendix G: Reporting Template – Opportunities for Standardisation and Guidance	to explain the purpose, structure, and implications of the methodology, including its alignment with policy frameworks (e.g. EPBD, ICMS 3, EN 15978). Training programmes and accreditation pathways should be established to develop the professional competencies required for conducting robust and transparent WLCA. This could be done in partnership with higher education institutions, professional bodies, and sector-specific organisations		
	Differences from RICS - Reference study period (50 years instead of 60) - causing some confusion.		A reference study period of 50 years is in alignment with Level(s) framework, a key guidance for conducting LCA in Europe.
	Differences from RICS - Data requirements (Irish national database used for generic materials) - positive.		Noted

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	Differences from RICS - Carbon per 'useful floor area' rather than per GIA - why as many targets out there use GIA?		As outlined is section 4.4 of SEAI's LC-GWP Calculation Methodology, for Office buildings use NIA (net internal area), for Residential buildings use GIA (gross internal area). This is cited by Level(s). For all other buildings refer to SCSI's definitions.
	Differences from RICS - Specific assumptions around waste rates, transport factors, end of life etc - need clarity.		As the methodology develops, further clarity shall be established on the calculation approach for all modules.
	Is there a OneClickLCA template prepared yet, as you have stated will be released in 2025?		The methodology is tool agnostic, a calculation in accordance with its requirements can be developed using any type of tool that will pass the SEAI approval process and will be certified as compliant with the requirements of the calculation. It is also expected that SEAI will make available a LC GWP tool to run calculations. There is no OneClickLCA framework yet to conduct LC GWP assessment in accordance with Ireland national methodology. It is likely that once the methodology will be completed and published, OCLCA may develop a framework in accordance with Ireland's requirements which will require validation. The

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			development of the OCLCA framework is outside the scope and responsibility of SEAI.
	Will the template include the national database of generic materials in the OneClick data sources?		Any tool that is validated to conduct LC-GWP assessments using Irelands LC-GWP Methodology will need Ireland's National Embodied Carbon Database of Building Materials as a data source.
Denmark's Building Regulation (BR18)		RPS report reads like a LIT review and borrows heavily from Ramboll documents. The report does not share insight from Denmark, the country most comparable to Ireland for implementation. LCA calculations are initiated during the design phase (to inform material choices and ensure compliance), the	Proposed changes align with the current thinking from the EU commission and presented at the SEAI workshop held on the 21 May 2025. The definition of project stages at which the reporting of LC GWP will be mandatory it is not in the scope of the calculation methodology, it rather pertains to the scope of the regulatory system.

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		as-built LCA declaration must be submitted as part of the completion report before the building can be put into use. This means it covers both planning/design and is verified at completion.	
LCA Byk DEAP type toolkit for preliminary compliance benchmarking		LCA byk is used as a simple tool for planning stage but is rarely used beyond planning stage.	Noted

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RICS v2 WLCA		RICS WLCA standard is used alongside national Danish frameworks, and EN 15978 in Denmark. As Denmark has its own specific regulations (BR18) and A-Class voluntary standard, the RICS WLCA is the preferred framework for professionals to manage Carbon and uncertainty in a more comprehensive way that LCA byk (BReg18 tool). It especially useful for optimoeering and optimisation, the more	Noted. The Ireland national methodology is fully compliant with I.S. EN 15978:2011 and mostly aligned with the requirements of RICS v3. RICS, along with Level(s) and IGBC Indicate methodology, are the main documents that have been reviewed to inform the development of the methodology. Scope and requirements are generally aligned, and where Ireland-specific information was unavailable, reference has been made to the above-mentioned documents.

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		important process to understanding the broader impacts of whole life carbon hotspots and for scoring data collection and report auditing.	
Criterion 1.6 RECOMMENDATION ON A NATIONAL GLOBAL WARMING POTENTIAL (GWP) CALCULATION METHODOLOGY	Developing a comprehensive national average material database is an ambitious and complex task. Despite years of effort, platforms like OneClick LCA still lack fully up to date datasets. In many cases it is not feasible to define national averages for domestic production of certain materials – such as brick or steel – due to limited production facilities or verified EPD data. In these instances, averages would need to be based	While we support the development of a national average database to aid and clarity and benchmarking at the concept design stage, this must be approached with caution. Maintaining such a database would require continuous and meticulous	The Ramboll report outlines recommendations on how SEAI should approach the development of a national generic Embodied Carbon database for construction materials. SEAI have appointed consultants to generate a national generic Embodied Carbon database for construction materials based on these recommendations. Work is underway to appoint an independent third-party verifier of the output of the aforementioned work.

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	in imported materials, with transport clearly accounted for.	updates by a dedicated team. Focusing initially on the most carbon intensive materials may be a pragmatic approach. Given limitations in data availability and scale, a fully comprehensive national database may not be realistic: a blended or hybrid appraisal method applied to existing databases may be more effective and efficient.	
General	In the recommendation documents it is mentioned that most methodologies in other countries are "tool-agnostic", but still it is recommended that Ireland develops a tool that is		SEAI intend to develop a LCA tool to assist with life-cycle GWP calculation. Until this tool is developed, it is our consultant's recommendation to be tool agnostic. SEAI will establish a list of validated commercially available LCA software tools that can perform life-cycle

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	easy to access for everyone. Is this methodology acknowledging this, and if so, when is this tool planned to be available?		GWP calculations in line with the SEAI Life-Cycle GWP Calculation Methodology.
	We commend the extensive and detailed assessments that have been completed by SEAI staff and their consultants to date. This is a highly complex but important topic, the recent workshop was also very helpful. We would welcome further opportunities for engagement as these recommendations are implemented. We have received some feedback from our members about the very short notice period to provide feedback on this current phase, a number commenting that they only became aware of the opportunity to input via LinkedIn posts! The reviewers also suggested that seeking submissions on three comprehensive and detailed reports lead to much repetition		Noted.

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	and perhaps seeking submissions on the SEAI Report alone could have been more efficient.		
	A rigorous approach has been taken in the work to date it will be essential to maintain the same rigour in the implementation phase.		Noted.
Recommendations - Page 61	We welcome the 'hierarchical approach' being adopted including the use of 'Irish Sectoral EPDs', which is directly relevant to the CMI members. In addition, the recommendation to update the database annually is also welcomed. We would sound a note of caution as the variety of different approaches that will be needed for different sectors, given the data gaps that exist, must be implemented consistently and transparently. Ideally the guidelines will be seen as credible and fair and encourage a consistent improvement in the provision		Noted.

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	and accuracy of data from all sectors.		
5.1 / Pg. 22	The database would benefit from persistent, interoperable, and open GS1 product, asset, document, location, individual, and service provider identifiers necessary for product-level traceability across all life cycle stages. In effect, enabling the formation of the much sought-after and valuable “GOLDEN THREAD.” This is all part of accurate end-to-end (E2E) digitalisation and the ensuing reduction of project administration workloads, such as producing RFIs and other technical submissions, which reference the same sole source of trusted product information.	Include GTIN, GIAI, and Serialised GTINs in all entries for 'Significant Carbon bearing materials' from an embodied carbon perspective and 'Core Maintainable Assets' from an embodied and operational ongoing carbon management aspect using the same consistent product identifiers to the GS1 Standard from the get-go.	This feedback will be shared with the software development team during this phase of implementation

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5.3 / Pg. 32	We would suggest the inclusion of text highlighting the importance of the use of Open BIM and other open standards, such as IFC, coupled with GS1's interoperable and persistent standards for product identification. The integration and promotion of effective track and trace at the appropriate accountability levels are essential in the ESG-focused age. Indeed, the "Walled Garden" approach using proprietary identifiers and solutions will be a hindrance to getting the best use from the database. Therefore, Open API standards (W3C) should be used when accessing the database.	Integrate buildingSMART's bSDD and IDS into Irish methodology for rule-based BIM object validation so that solutions using these services can be used.	This feedback will be shared with the software development team during this phase of implementation
5.4 / Pg. 39	We suggest the inclusion of a mention of the term s of reference of the "International Reference Life Cycle Data System" ILCD +OPEN EPD digital exchange format. The Scanning experience is enhanced	Mandate ILCD+EPD-compatible JSON/XML using GS1 identifiers for exchange with EU	This feedback will be shared with the software development team during this phase of implementation

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	via the Use of GS1 "Digital Link", which supports ISO/IEC 18975 Automatic Identification and Data Capture techniques.	databases and CIRPASS2 pilots.	
5.5 / Pg. 43	Given our global experience in various sectors, including Retail, Logistics, Pharma, and Food Industries, among others, we highly recommend avoiding the predominantly manual updating of product data at all costs.	Use the Verified by GS1 service for product look-up in global registries. This GS1 service is free to use and accessible via open APIs.	This feedback will be shared with the software development team during this phase of implementation
5.7 / Pg. 49	There is no reference to upcoming CPR revisions requiring product-specific GWP in DPP format.	Ensure GTIN-linked DPPs use ISO 22057 structure and tie to product category rules under ISO 23386 and are checked in the BIM world using the BSI standard Information Delivery	This feedback will be shared with the software development team during this phase of implementation

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		Specification (IDS) coupled with bSDD standards.	
4.2.8 / Pg. 19	We suggest including a mention of Uniclass or ETIM, both of which are based on ISO 12006-2, for classification consistency.	Adopt Uniclass as a standard classification scheme for linking BIM elements to LCA data templates.	This feedback will be shared with the software development team during this phase of implementation
General / Whole Document	Given the focus on validating carbon footprints, we suggest that there should be an emphasis on bottom-up traceability from "BIM to BOM", along with the processes to establish the Golden Thread of product knowledge.	Introduce GTIN checkpoints at procurement, delivery, installation, and commissioning using GS1's traceability standard, EPCIS.	This feedback will be shared with the software development team during this phase of implementation
International Benchmarking	Other countries, such as Denmark, use carbon caps and enforce traceable Environmental Product Declarations (EPDs) through Design for Productivity Programs (DPPs). Sweden's national contractors now require	Adopt a carbon cap like Denmark has (e.g., 12 $kgCO_2e/m^2/y$ for buildings over a 1,000m^2) with traceability	SEAI will set target limit values for buildings from 2030, in accordance with Article 7(5) of the recast EPBD. These targets will be developed through a roadmap, as outlined in the same article.

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	that all products delivered to the site must have a GTIN to enable them to achieve full traceability and digital integration.	enforced via GTINs and those products mapped to the BIM objects using bSDD & IDS-driven routines.	

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5.3.7 of Recommendation on a National Global Warming Potential (GWP) Calculation Methodology	Annex III of the EPBD EU 2024/1275 for Calculation of lifecycle GWP of new buildings pursuant of Article 7(2) states that "...calculation tools or methods may be used if the fulfil the minimum criteria established by the Level(s) common EU framework". Section 1.1.2 'Building parts and elements of Level(s)' of the JRC Science Report for Level(s) Part 3: How to make performance assessments using Level(s) includes Minimum scope of building parts and elements which includes the following; Utilities; Connections and diversions Substations and equipment And Landscaping Paving and other hard surfacing Fencing, railings and walls Drainage systems. The RKD report recommends that external works are excluded from calculations. This	It is recommended that GWP calculations for infrastructure and utilities including parking be included in GPW calculations. Further studies are recommended as to how this may be included and reported upon.	We note your comment regarding the inclusion of embodied carbon emissions associated with infrastructure. SEAI and the government steering committee are currently monitoring this matter closely. At present, the EU Commission has not yet confirmed whether infrastructure and utilities will be included in the scope of the LC GWP calculation. Such information will be published in the finalised revision of the Delegated Act amending Annex III of the recast EPBD. Once this is clarified, the approach to accounting for embodied carbon in infrastructure and utilities can be reviewed accordingly. In undertaking this review SEAI will consider the study you mentioned and the impact that infrastructure related emissions can have on achieving national carbon targets.

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	recommendation is based on stakeholder interviews, notional future changes to Level(s) guidance and GWP calculation methodology as implemented by Norway. These external works can make significant contributions towards GWP/CO2 emissions. A recent Irish study estimated that between 13-32% of the overall embodied carbon for different typologies of housing development were for roads and infrastructure. If Ireland has a National per annum carbon budget how can the value of the impact of this infrastructure be ignored in GWP calculations as prescribed by the Level(s) guidance?		

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Page 14- section 4.1.1	We note that B3, B5 and B7 are excluded from the proposed methodology. RKD's report outlines that for B7 it is generally understood that it has very little impact on GWP and that for B3 and B5 that "based on the international research, there is insufficient clarity on how to develop meaningful GWP estimates" and furthermore that these "categories are also typically considered to have a relatively minor impact". We note that Netherlands (B3 and B5) and France (B3, B5 and B7) have included these sections as part of the calculation requirements.	We recommend that further clarification on the proposal to exclude these sections would be useful for understanding and that this information should be included in the proposed methodology document. We suggest to include all module be included as per RICS approach with default values. If all the modules except A1-A3 will be based initially on default values it will be more representative of the life cycle emissions and	The latest revision of the EU Commission's Delegated Act amending Annex III of the recast EPBD includes in the scope of LC GWP calculations all modules except B5, B7 and B8. This update has been published after the SEAI public consultation and workshop held on the 21 May 2025, it will therefore be included in future revisions of the methodology. While some jurisdictions (e.g. France, the Netherlands) include these modules, their inclusion is beyond the current regulatory requirements under the EPBD. The methodology remains open to future revision as data quality, modelling practices, and regulatory expectations evolve.

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		accustom the users to the full LCA methodology.	
Page 15	Definition of building exclude carparking however EU Level(s) states that everything that is within the boundary line need to be part of the calculation. It is not clear if external landscaping and infrastructure works are included in the calculation (or how it will be included). Further clarification is recommended.	Clarification of the scope is necessary.	To define the scope of the calculation in accordance with Ireland national LC GWP calculation methodology, please refer to section 4.5 and to Appendix A, section A.2 of the document. It is to be noted that Ireland national methodology in some instances might differ from Level(s), although for calculations related to buildings in Ireland the former prevails over European frameworks. Final clarification of scope for external works will be included in future revisions; however, this may not be fully defined until the Delegated Act amending Annex III is released in December 2025.

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Page 23 - section 5.4.1	"the deconstruction/demolition impact of fully demolished buildings can be reported under A5.1 on a voluntary basis". The quantity of demolition is a vital stastic which should be a mandatory requirement not a voluntary one.	We recommend inclusion of module A5.1 as mandatory to reinforce the message on the importance of re-using existing buildings.	Comment noted. The latest draft of the Delegated Act amending Annex III of the recast EPBD currently leaves module A5.1 outside of the mandatory scope of LC GWP calculation, which poses some challenges for its inclusion as mandatory at Irish level. Although, SEAI appreciates that government policy and local authorities' requirements in the UK and Ireland specific context are starting to require a LC GWP assessment including demolition works as part of justification for demolition in planning application process. On this basis, the inclusion of A5.1 as mandatory may be discussed with the working group and stakeholders.

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Page 30 -31	It is proposed that the scope of the Life-Cycle GWP Calculation shall be confined to the inclusion of sub-module B6.1 exclusively. Sub-modules B6.2 and B6.3 are excluded from the calculation, they can be calculated and reported separately on a voluntary basis.	It is recommended that the unregulated building-related operational energy should be included in the LCA to reflect the actual emissions as closely as possible. In the absence of project - specific operational energy use calculation, guidance from CIBSE TM54 or similar can be used. Further to this, if it is decided that monitored-post occupancy actual use cannot be introduced at this stage, it should be defined - when will this data be	SEAI's Embodied Carbon Teams current primary task is to develop a methodology for Life-Cycle GWP (LC-GWP) calculations. Any updates to this methodology, as well as to the BER, will be made solely to ensure compliance with the regulatory framework. The inclusion of actual energy use within the BER or LC-GWP calculation is not being considered at this time.

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		necessary to be collected for the final 'as-build' calculation. We would suggest to propose a methodology that includes unregulated loads and closes the current gap between the BER and actual energy use.	
Page 32	Under the section Metered Energy Data during operational stages, it is stated that 'Requirements on the use of data from energy metering to inform the calculation of Module B6 emissions at post-construction/operational stages will be provided in future revisions of this document'. Further clarification is required if Post Occupancy Evaluation (POE)	Please clarify the requirement for Post Occupancy Evaluation (POE) and how GWP will be integrated into the BER if post occupancy is required? Recommendation that the current methodology make	The stages for mandatory reporting of LC GWP results are still under discussion. If reporting at operational stage of the building will be required, it will likely include regulated and un-regulated loads through the use of metered data on energy consumption. At this moment in time, LC GWP reporting during the operational stage of the building is not a requirement of this methodology and the scope of the calculation is confined to module B6.1 exclusively (Regulated Operational Energy).

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	is to become mandatory for projects, as the building needs to be in operation for at least 12 months to have an accurate yearly reading.	provision for the voluntary recording of B6.2 for GWP calculations completed post occupancy. This technical and functional performance of the building, which shall be included and reported separately. This data could be incorporated into BER and Display Energy Certification for in-use values.	
Page 32,33	Under the section Electric Vehicles, it is stated that 'charging points shall be excluded from the scope of Module B6 and the Life-Cycle GWP', however it also states 'Embodied emissions related to the equipment for charging points fall within the scope of the	The anomaly requires clarification.	Section 5.8.4 Electric Vehicles will be amended as follows: 'In instances where charging points for electric vehicles are provided within the building, the energy consumption associated with such charging points shall be excluded from the scope of calculation of Module B6. The assessor may report these emissions under Module B8.1 on a voluntary basis. In this

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	Life-Cycle GWP calculation and shall adhere to the provisions of this guidance pertaining to building components'. Conflicting information requires clarification.		instance, the energy consumption for charging points shall be modelled and sub-metered separately. Embodied emissions related to the equipment for charging points fall within the scope of the Life-Cycle GWP calculation and shall adhere to the provisions of this guidance pertaining to building components.'
Page 46 - Appendix A.2	In the line 'Core' - Tier 2 - states 'External architectural works'	Recommend correction to 'Internal architectural works'.	Noted, categorization will be amended as follows: Core - "Internal" architectural works/Non-structural works
Page 23	Pre-Construction Demolition Works: Prioritizing the retention of existing structures to minimize embodied carbon emissions, while also exploring adaptive re-use options can reduce the need for new construction.		The methodology does not preclude the assessment of pre-construction demolition works when appraising retention of existing structures against new construction. This type of comparison is often complex and depends on multiple factors that sometimes might go beyond LC GHG emissions and environmental impacts. When doing this type of assessments, it is highly recommended to extend the scope of the calculations as wide as possible and make robust assumptions in a careful, unbiased, and coherent manner. SEAI will review the possibility to include a section in the methodology specifically on the appraisal of new construction against refurbishment.

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Page 35	End-of-Life Scenarios: Historic & protected buildings may need particular consideration in this section as it should be assumed that they would be retained indefinitely and would not be subject to the same LCA/life cycle as a conventional building.		In the immediate term, the Life-Cycle GWP Calculation Methodology is being developed to satisfy the requirements of Article 7(2) of the recast EPBD. Historic & protected buildings are excluded for now.
Page 29	Maintenance & Replacement: Historic building components are generally highly durable and/or repairable which minimizes the need for replacement by comparison with many modern building materials.		In the immediate term, the Life-Cycle GWP Calculation Methodology is being developed to satisfy the requirements of Article 7(2) of the recast EPBD. Historic & protected buildings are excluded for now. In the instance where historical building components and/or techniques are applied to new buildings, their longer lifespan and durability will be reflected in the replacement and maintenance rates.
Page 31	Operational Energy Use: Sympathetic energy efficiency measures can be implemented that reduce operational carbon emissions while respecting the historical fabric and special interest of the building.		In the immediate term, the Life-Cycle GWP Calculation Methodology is being developed to satisfy the requirements of Article 7(2) of the recast EPBD. Historic & protected buildings are excluded for now.

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Page 65	Additional relevant policies, frameworks and standards: Refer to Design for Performance Framework published by the RIAI (May 2025).		Noted

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Wednesday 21/05/2025 SEAI Presentation, SEAI Workshop on Life-Cycle Global Warming Potential Calculation Methodology for Buildings Page 19 - Climate Action Plan 2025 - CAP25 Action under Climate Action and Low Carbon Development (Amendment) Act 2021 https://www.gov.ie/en/department-of-enterprise-trade-and-employment/press-releases/government-approves-public-procurement-guidance-to-promote-the-reduction-of-embodied-carbon-in-construction/	• From 1st September 2025, public bodies that are commencing design for new buildings for projects in receipt of exchequer funding in excess of €10 million in the case of non-residential buildings, or in excess of €60 million in the case of residential buildings, should produce or procure a Whole Life-Cycle Greenhouse Gas Emissions assessment in accordance with technical guidance to be provided by SEAI in 2025, consistent with the Energy Performance of Buildings Directive. • From 1st June 2026, projects in receipt of exchequer funding in excess of €5 million in the case of non-residential buildings, or in excess of €30 million in the case of residential buildings, should produce such an assessment. Projects below this scale should also consider implementing this		The Life-Cycle GWP Calc Methodology V. 1.0.0 has been issued and is currently available for use. We recommend its adoption going forward. SEAI are also developing a generic materials database, which is scheduled for delivery to SEAI by late November to early December. In the interim, designers may refer to publicly available embodied carbon figures, such as those provided by the EPD Ireland Programme or the Eco Platform, as a starting point

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	assessment. Draft Comment: -At the public consultation, it was clear that the SEAI are not in a position as of yet, to put forward a methodology and they cannot give a date when they may have one. - SEAI did acknowledge they wish to have an agreed national data set ready for initial comments by September 2025. In the interim, SEAI acknowledge that the IGBC National Inventory may be suitable for use for generic materials. In the absence of a current national methodology, national material data set, and measurement conventions, can Public Bodies proceed with: • IGBC – INDICATE methodology to measure LCA on our project. • IGBC National Inventory may be suitable for use for generic		

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	materials. • Revit workflows that can assist Architects in quantifying the bldg. materials within the bldg. components; in the absence of full Bill of Quantities.		

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LCA National Methodology: Wednesday 21/05/2025 SEAI Presentation, SEAI Workshop on Life-Cycle Global Warming Potential Calculation Methodology for Buildings Page 57	Draft Comment: - From the SEAI on Wednesday 21/05/2025 presentation they made it clear that they have no timeline for the LCA methodology when it will be ready. This was iterated during the RIAI Design for Performance webinar on the 23/05/2025. - In the absence of an existing national methodology, SEAI suggest assessments from 1 September 2025 use one of the below methodologies: SEAI to confirm IGBC Indicate methodology acceptable and suitable in the absence of a national methodology being approved.		The Life-Cycle GWP Calc Methodology V. 1.0.0 has been issued and is currently available for use. We recommend its adoption going forward.

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Quantifying Materials: Wednesday 21/05/2025 SEAI Presentation, SEAI Workshop on Life-Cycle Global Warming Potential Calculation Methodology for Buildings Page 67	Draft Comment: - SEAI seem to place a heavy reliance on Bill of Quantities. In the meeting it was suggested that assumption may be flawed as: Not all projects have full BoQ's (and simply QS seldom measure all materials, they measure components). Secondary steel is not accurately captured in BoQ's (that's a big one, and SEAI acknowledged the gap) M&E tend to be spec performance by M&E and typically separate to QS BoQ Relying on contractor to accurately track material quantities might be misguided, i.e. measured data by contractor and how that is verified?		The scope of building elements and technical equipment is defined in the Level(s) common EU framework for Indicator 1.2. A more detailed list is provided in Appendix A, Section A.2 of the Life-Cycle GWP Calculation Methodology (Version 1.0.0). In the absence of product-specific data for mechanical and electrical (M&E) systems, secondary steel, and façades, designers are advised to consult established guidance documents. These include CIBSE TM65, CWCT guidance on calculating the embodied carbon of façades, and the Institution of Structural Engineers (IStructE) guidance for calculating the embodied carbon of structures

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Quantifying Materials: Wednesday 21/05/2025 SEAI Presentation, SEAI Workshop on Life-Cycle Global Warming Potential Calculation Methodology for Buildings Page 66	Draft Comment: - During RIAI webinar 21/05/2025, there did not seem to be convincing belief in the poll on QS to be best suited for LCA assessments - There is still a lot of un-known on how to achieve as-built verified data. Unless there is a system in place for material independent quantity verification, you rely on the contractors word…(for example see SEAI BER verification, and even that rely heavily on default assumptions; compared to verifying all materials in a project…) - The greatest impact on LCA is at early design stage, prior tender, i.e. who is best placed in coordinating the designers from the initial brief to achieve the best outcome?		In the absence of a training and qualification infrastructure, SEAI believes that the Architect, M&E engineer, or quantity surveyor employed in a project have the necessary skills and knowledge to carry out a LC GWP assessment. These professional figures also have access to third party training material to expand their technical knowledge in this field. Where required, the professional figures mentioned above can be appointed as LC GWP Assessor at the initial brief of the project to coordinate the measuring, reporting, reduction of LC emissions throughout the entire project. In relation to verified data, guidance given in Appendix C of the SEAI Life-cycle GWP Calculation Methodology should be followed.

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B6 Operational Energy Use - Section 5.8	Reliance on BER methodologies for calculation of (particularly DEAP for residential projects) is very unlikely to accurately reflect the carbon / energy benefits of some proposed building assemblies and fabric specification. Greater accuracy in energy modelling will become increasing important when the Embodied Carbon of the assembly / specification is assessed against energy performance / lifecycle carbon benefit / disbenefit.	Facilitate other energy modelling tools and methods in addition to BER /DEAP Methodologies (similar to proposed alternative software providers for LCA assessment), as reliance on BER methodologies (particularly DEAP for residential projects) is very unlikely to accurately reflect the carbon / energy benefits of some proposed building assemblies and fabric specification. Great er accuracy in	In the immediate term, the Life-Cycle GWP Calculation Methodology is being developed to satisfy the requirements of Article 7(2) of the recast EPBD. The Life-cycle GWP mush be disclosed on the energy performance certificate and the regulated operational energy calculated under the recast EPBD shall be used to calculate Module B6.

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		energy modelling will become increasing important when the Embodied Carbon of the assembly / specification is assessed against energy performance / lifecycle carbon benefit / disbenefit.	
	If different proprietary calculation tools are permitted, it's critical that the assumptions and material data within them are standardised, in so far as possible. This is to ensure that the same building will get the same results irrespective of which tool is used.		The methodology recognises the importance of consistency across different proprietary tools. As outlined in Section 4.8 and Appendix C, all tools must use standardised input data, particularly from the Ireland's National Embodied Carbon Database of Building Materials, and follow the calculation requirements defined in the methodology, including module scopes, data hierarchies, and reporting formats. SEAI will setup a process to validate software to be used to carry out LC GWP assessments.

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			This framework ensures that, regardless of the validated tool used, assessments for the same building will yield consistent and comparable results.
	It would be an excellent idea to ensure that it's possible to build any national calculation tool in such a manner that calculations done in proprietary tools can be seamlessly populated into it, via an API.		Noted

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	It would be a good idea to encourage the use of calculations based on product-specific data (e.g. EPDs and PEPs) at early design stage. This is because: -A) the initiatives by specific manufacturers, in terms of whether they have decarbonising their manufacturing processes or not, can lead to enormous differences for similar products - differences which can profoundly affect the whole building total; -B) doing so would encourage more manufacturers to not just obtain EPDs, but to seek to decarbonise their manufacturing processes to achieve lower embodied carbon scores.		The methodology reflects the importance of product-specific data in improving the accuracy of life-cycle GWP assessments. As outlined in Section 4.8 and Table 1, while generic data is permitted at early design stages, there is a clear hierarchy that prioritises verified product-specific EPDs and PEPs at detailed design and as-built stages. SEAI acknowledges that the use of product specific data from EPDs can highlight significant differences in EC between similar products and reflect manufacturers' decarbonisation efforts. A broader EPDs adoption is incentivised by the large-scale implementation of LC GWP assessments at building level, but also regulation changes at product level such as European CPR and CBAM. Concurrently, the LC GWP calculation methodology has to ensure that data inputs reflect the status of the building design at each stage in a robust and indisputable manner. On this basis it has been developed the data hierarchy presented in section 4.8. The use of favourable product specific data in the LC GWP assessment before the procurement process of such products has started would be highly debatable and easily contestable in a regulated system.

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	One element which I believe is absent from module B is the impact of the quality of design from the lifespan of products. For instance, a window might have a 50-year design life statement in an EPD, with a very loose statement about a normal amount of maintenance. But has sufficient attention been paid to weather proofing around the reveals, or to consideration of the potential impacts causes by surface condensation etc? Perhaps you could argue this is addressed by BCAR, but I have data to show that the majority of the market is moving towards a 0.15 Y-value, which is troubling.		Section 5.7 on Module B4 (Replacement) outlines the requirements to account for building components replacement in the LC GWP calculation. Replacement impacts depend on the lifespan of the component and its LC GWP factor. For generic materials, default expected lifespans (appendix A, section A.3, table 13) shall be used. For specific products and project-specific scenarios, default lifespan can be replaced by product-specific values. Provided that robust information are available to support longer or shorter lifespans, and values are calculated in accordance with the standards and requirements outlined in section 5.7, paragraphs 7 and 8.

3 Initial Considerations for Conducting a Life-cycle GWP Assessment	**Lessons from Energy Modelling: EU vs. US Approaches** The CIF's concerns regarding the current methodology's scope draw a pertinent parallel with historical approaches to energy modelling. In Europe, Building Energy Ratings (BERs) have traditionally adopted a simplified approach, focusing on "regulated" energy sources and monthly calculations, aiming for broad applicability and ease of initial implementation. In contrast, the United States has often embraced a more detailed approach, utilising highly advanced energy modelling that encompasses all energy sources, HVAC controls, and 8760 hourly calculations, allowing for greater precision and optimisation for complex systems. The CIF suggests that embodied carbon modelling will likely follow a similar trajectory. The current SEAI methodology, labelled "Version 1.0.0", implicitly acknowledges that it is a foundational document expected	Develop a twin track approach with a voluntary more advanced modelling approach for complex mixed use developments on brownfield sites	The LC GWP methodology already introduces modules beyond the minimum scope of the recast EPBD and Delegated Act. Such modules can voluntarily be included in the LC GWP calculation and related results reported separately in accordance with the methodology requirements. This method implies two approaches. The mandatory one, which is in alignment with the recast EPBD minimum requirements and widely adoptable. The voluntary one, which goes beyond the minimum scope and aims at including additional impacts for a holistic assessment that could suit the needs of experienced assessors or the analysis of complex developments.

	to evolve, with future revisions planned for various aspects such as default waste rates, End-of-Life (EoL) routes, and energy modelling requirements. This recognition of an evolving framework aligns with the observation that initial regulatory frameworks often prioritise simplicity for widespread adoption. However, as market maturity and technological capabilities advance, there is an inevitable demand for greater granularity and accuracy. By starting with a highly simplified scope, particularly regarding pre-construction impacts and external infrastructure, SEAI risks creating a methodology that swiftly becomes outdated or inadequate for complex projects. This could necessitate rapid and potentially disruptive revisions in the future. Proactively developing an "advanced option" now, even if initially voluntary, could help future-proof the methodology. Such an option would allow for a		

	more comprehensive environmental assessment of complex projects, including factors like remediation, demolition (A5.1), and new infrastructure (roads, utilities, parking) that are currently excluded or optional. This would provide a more accurate and holistic picture of a project's true GWP, enabling better decision-making and incentivising more sustainable development practices, whilst also providing a pathway for the industry to demonstrate leadership in comprehensive carbon accounting. This approach aligns with the document's mention of "further research" to inform future revisions.		

5.4.1 A5.1	**Brownfield vs. Greenfield Development - Exclusions and Their Implications, and the Unintended Bias Towards Greenfield Development** The current exclusions within the SEAI methodology inadvertently create an uneven playing field that may discourage brownfield development in favour of greenfield sites. Brownfield developments inherently involve substantial pre-construction activities, including the demolition of existing structures, site clearance, and often extensive remediation of contaminated land. While the methodology states that the deconstruction/demolition impact of fully demolished buildings can be reported voluntarily under A5.1 as part of the upfront carbon impact to inform decision-making during the concept design phase, it is not a mandatory component of the new building's final GWP calculation. Crucially, key decisions during the concept	SEAI should adopt a dual-level approach: a simplified calculation for SMEs and smaller projects, and an option for a more detailed calculation for complex and brownfield developments, to ensure fairness in promoting sustainability. An advanced GWP model could include site remediation, demolition and infrastructure GWP, enabling a more accurate comparison between greenfield and brownfield development.	SEAI agrees that often demolition impacts play a crucial role in appraising a brownfield development against a greenfield, and this has often moved the dial in recent years on development in city centre locations. When appraising this type of scenarios at early stages it is highly recommended to have a holistic and objective approach, going beyond the minimum scope of the calculation and include additional impacts such as those from demolition works, enabling services and facilities, transport of workers during the life of the building, etc. While the draft delegated act gives member states latitude to include or exclude pre-construction demolition, it stipulates that the results shall be reported seperately. Likewise external works which are classified as optional inclusions under the draft delegated act may become mandatory inclusions for planning purposes. SEAI acknowledge the very well-made point and the proposal for a simple and complex LC GWP assessment and will keep this in mind as we develop the National LC GWP methodology. SEAI are currently engaged in the task of establishing a LC GWP calculation methodology that satisfies the requirements of the recast EPBD and the Delegated Act amending Annex III. Elements outside of the regulated LC GWP assessment may be included but their impact shall be reported seperately.

	stage regarding new builds versus retrofits are often made based on the inclusion of demolition data or estimated demolition data. This approach to demolition emissions at the concept stage will inevitably favour renovation and could result in the demonising of demolition. However, if the site use is not maximised (e.g., development is restricted due to the retention of existing buildings to favour renovation), there is a significant risk that institutional investors or funders will perceive these brownfield sites as less attractive. Without a full accounting of the benefits of existing infrastructure and the demolition GWP, they may choose to invest in greenfield development instead. This shift in investment could lead to increased dereliction and blighted areas within towns and cities, undermining urban regeneration efforts. Conversely, greenfield developments typically require		

	the construction of entirely new enabling infrastructure, including access roads, extensive utility networks, and dedicated parking facilities. These elements, if considered external to the building's immediate envelope or structurally independent, are largely excluded from the mandatory GWP calculation of the new building. This creates a significant disparity in site selection and planning decisions. Brownfield sites are disadvantaged during the key decision-making phase at the concept stage, with considerations for demolition and remediation; yet, the carbon cost of their necessary demolition and remediation is not mandatory in the final calculation. Meanwhile, greenfield sites benefit from not having to account for demolition, and the carbon cost of their new, extensive enabling infrastructure is exempt from the building's GWP. Consequently, at the key project site selection stage,		

	greenfield development may appear to have a "lower carbon" footprint on paper for the building itself, as the significant carbon costs of new infrastructure are not consistently included in the mandatory assessment. The current methodology risks overlooking critical impacts that truly matter for sustainable development. A truly sustainable assessment framework should incentivise the efficient reuse of existing urban land and infrastructure. The current methodology, through its selective exclusions, inadvertently makes greenfield development appear more favourable at the site selection stage. This undermines broader sustainability and land-use efficiency goals, creating a policy paradox where a methodology designed to reduce carbon in buildings could inadvertently contribute to urban sprawl. If the full carbon cost of site preparation and associated		

	infrastructure is not holistically captured, especially in a comparative context between brownfield and greenfield, then the methodology fails to incentivise the most sustainable site selection. This subtle disincentive for brownfield regeneration runs counter to broader climate action objectives of promoting sustainable land use and urban revitalisation. Furthermore, this incomplete picture could be weaponised by serial planning objectors, who might delay brownfield developments on the grounds of "unnecessary demolition" or "high embodied carbon" without a comprehensive and fair assessment that considers the full life-cycle and broader urban benefits.		

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5.4.2 A5.2	**Challenges in Mixed-Use Developments and GWP Calculation** Mixed-use developments, characterised by a combination of residential, commercial, retail, and other functions within a single complex, present unique complexities for GWP calculation that are not sufficiently addressed by the current draft methodology. Apportionment of Shared Basement Embodied Carbon A significant challenge arises in the accurate allocation of embodied carbon in shared basements and other complex shared infrastructure. The SEAI methodology, in its current form, does not provide clear guidance on how to distribute the embodied carbon of these shared spaces in mixed-use developments. While there is some guidance for shared	As the methodology is developed, CIF recommends developing a worked example of a complex mixed-use development in order to tease out and resolve the various issues that will inevitably arise in these projects. Once the protocol is developed for this scenario, it will be straightforward to streamline for simpler buildings or one-off developments	LC-GWP calculations for mixed-use developments exceeding 1,000m² GIA will become mandatory from January 2028. Guidance on how to apportion embodied carbon across the mixed-use development will be incorporated into the SEAI LC GWP Methodology in due course, informed by insights gathered from pilot projects conducted between now and 2028.

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	parking facilities, indicating that the entire complex could be assessed as one, or impacts/floor area allocated based on designated parking spaces, this specific case does not extend to general shared basements or other common infrastructure such as shared plant rooms, vertical circulation cores, or common services. Mixed-use schemes frequently feature a large, singular basement structure that accommodates multiple distinct uses, each potentially requiring separate BERs. Without clear, standardised rules for assigning the embodied carbon of such shared elements to individual units or building types, assessors face a significant technical and administrative challenge. This lack of direction may result in arbitrary allocations, potential double-counting, or unintended		

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	omissions, thus compromising the accuracy and comparability of GWP certificates. The methodology's foundational scope appears to implicitly assume a single, monolithic "building" for assessment, as evidenced by the absence of detailed guidance on shared elements beyond parking. This "single building" paradigm falters when real-world mixed-use developments, which are often collections of distinct functional units built upon shared substructures, necessitate individual GWP reporting. This gap compels assessors to form their own assumptions regarding complex shared elements, leading to inconsistency across projects. Without clear, standardised apportionment rules, the comparability and reliability of GWP certificates for mixed-use developments will be		

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	compromised, potentially undermining the very purpose of the EPBD disclosure requirement.		

5.4.2 A5.2	**Granularity of 'As-Built' GWP Calculation** The CIF's observations highlight a potential disconnect between the methodology's ambition for 'as-built' GWP accuracy and the practical realities of data collection. It is understood that 'as-built' construction material quantities will typically be derived from a "one-click LCA" type schedule of materials, rather than a detailed 3D model like Building Information Modelling (BIM). This suggests that contractors will be required to manually input actual material quantities into a schedule as each part of the construction is completed. This manual data input process will impose a substantial administrative burden on contractors. The document explicitly states that for completed projects, data on Module A5.3 (waste and waste management) shall be provided by the contractor, and if unavailable, generic values will be	As part of the complex mixed-use worked example above, consideration needs to be given to the practicalities of on-site data collation and whether this is even realistically possible for contractors. Knowing the as-built volumes of concrete for each element seems very challenging to robustly report. Noting that site values may need to be adjusted for exclusions such as infrastructure and car parking, for example. This would be a significant administrative burden. This would	The draft delegated act requires the Life-cycle GWP be disclosed in the energy performance certificate (EPC) of the building shall reflect the as-built stage. SEAI's Life-Cycle GWP Calculation Methodology acknowledges that the assessment of Life-cycle GWP should commence at early design stage. Estimates of materials quantities along with carbon factors sourced from Ireland's National Embodied Carbon Database of generic Building Materials are used in early-stage assessments. As the project evolves through the construction phase, correction to initial estimates of materials quantities along with the substitution of product specific DoPC or EPD for generic Building Materials will be necessary to establish the most accurate as-built Life-cycle GWP. SEAI note potential difficulties in gathering information for Module A5 site construction activities and waste. To address this, generic figures are provided within the Life-Cycle GWP Calc Methodology. However, contractors are expected to be incentivised by market dynamics to monitor and report actual waste rates during construction, enabling them to replace default values with more favourable, project-specific data at the as-built assessment stage.

	maintained. This indicates an expectation for detailed, contractor-provided data. However, accurately apportioning actual materials used on a per-building basis, particularly in complex mixed-use schemes with shared elements and dynamic material usage across different zones, presents a significant challenge. The methodology does not explicitly state the expected granularity for 'as-built' data beyond requiring "actual figures" for A5.2 and A5.3 where possible. The methodology aims for "accurate as-built embodied carbon calculation at project completion." This implies a high level of data granularity and precision. However, the reliance on "one-click LCA" type schedules and manual input, coupled with the acknowledgement that "small contractors may not include material inventories at site or unit level basis," points to a known gap in current industry practice and available tools. This fundamental mismatch between	likely necessitate having a dedicated LCA GWP assessor working on site throughout the project for large complex mixed used developments. This is in addition to the GWP Assessor fees which would also need to be considered.	

	the detailed data requirements and the operational capabilities and resource allocation of many contractors could lead to significant non-compliance due to the impracticality of detailed manual tracking. Alternatively, it could result in inaccurate reporting based on generic data or rough estimates, thereby undermining the credibility and utility of the 'as-built' GWP certificates. This could stifle innovation and participation from a vital segment of the industry, potentially leading to a two-tier system where larger firms can provide more accurate data while smaller firms struggle to meet the same standards.		

5.4.2 A5.2	**Provisional GWP Calculation for Shell & Core Units** The methodology indicates that a preliminary or provisional assessment will be carried out during the design phase, with a final assessment conducted upon the completion of construction, drawing upon the initial inputs. However, there is a lack of explicit guidance on whether a provisional GWP calculation is necessary for shell-and-core units (e.g., retail spaces) before the fit-out is finished. Shell-and-core projects are a common delivery model, particularly in commercial and mixed-use developments, where the tenant fit-out occurs post-handover and involves materials and systems selected by the tenant. In the absence of clear guidelines, it becomes unclear how to account for the embodied carbon of elements that will be added later by various parties. This uncertainty can result in incomplete or inconsistent provisional GWP figures at	A worked example to be included in the above complex scenario above	Transparency in reporting is essential. If the assessment covers only shell and core, this must be clearly stated. This ensures clarity in scope and consistency in reporting across projects.

	handover, presenting a significant challenge for developers who must report GWP at project completion. The EPBD requirements for an LCA GWP calculation for buildings exceeding 1,000 m² necessitate careful consideration in large mixed-use developments. Landlord areas in apartment developments are evaluated under Part L Building Other than Dwellings and require a separate BER. These floor areas encompass communal corridors and an increasing array of amenities such as gyms, yoga rooms, and communal kitchens for events. The 1,000 m² floor area could be applicable to this aspect of the building's LCA GWP calculations, despite the fact that other elements (apartments) would not need LCA GWP calculations until 2030. It is practically impossible for a contractor to isolate the material deliveries for one part of the building in this manner.		

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5.4.2 A5.3	**Waste Allocation in Multi-Unit Projects** The document provides a detailed methodology for calculating site waste production and management (Module A5.3) for the "entire building", and for End-of-Life stages (C1-C4), including specific waste rates and disposal scenarios. However, it explicitly does not provide guidance on how shared waste emissions should be apportioned among multiple units on the same site in multi-unit projects. This absence of guidance is problematic for multi-unit schemes where waste streams, particularly from shared construction activities (e.g., common basement excavation) or end-of-life demolition, are inherently collective. Without clear rules, assessors are likely to adopt varying methods for attributing these shared waste	A worked example to be included in the above complex scenario above	LC GWP calculations for mixed used developments above 1000m^2 GIA will become a requirement from January 2028. Guidance on how to apportion waste allocation will be added to the LC-GWP Methodology in due course, informed by experience gathered from pilot projects between now and 2028. It will be a requirement of the LC-GWP Methodology to assume the same emissions allocation rules for every module of the LC-GWP calculation.

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	impacts, leading to inconsistent reporting across projects. This lack of standardisation undermines the comparability and accuracy of reported GWP for individual units within a multi-unit development, especially given the requirement for separate BERs/EPCs for each unit. Similar to shared basements, the waste calculation methodology is framed around the "total mass of the i-material used for the construction of the entire building." This "whole building" perspective simplifies calculations for single-purpose buildings but breaks down when individual units within a multi-unit development require separate BERs/EPCs. This situation creates ambiguity and potential for misrepresentation, making it difficult for consumers or investors to compare the		

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	environmental performance of individual units.		

5.2 A4	**Tracing Transport Emissions (Module A4)** The calculation of transport emissions under Module A4 requires contractors to trace the origin of materials and apply default distance bands. This process is inherently complex for small builders who frequently deal with mixed suppliers and subcontracted deliveries, making it challenging to ascertain precise manufacturing locations and transport distances for every component. While the methodology allows for the use of generic data with embedded transport emissions at early design stages, it encourages the use of more precise, project-specific information in later stages, stating that "assessors are encouraged to employ more precise information as it becomes available, to modify the default scenarios". However, the practicalities of obtaining this granular data from a complex, multi-tiered supply chain are	SEAI should provide clear templates and simplified reporting methods	The methodology recognises the challenges associated with calculating Module A4 transport emissions and provides structured support to mitigate these. Specifically: - Default transport scenarios (Table 2, Section 5.3) and carbon conversion factors (Table 3) are provided for use where project-specific data is unavailable. - The methodology permits the use of generic data with embedded transport emissions at early design stages (Section 4.8.1), and while it encourages refinement at later stages, this is not mandated where impractical. The methodology outlines that default values may be retained throughout the project lifecycle if more accurate data cannot be obtained (Section 5.3 and 5.4.3). - Project-specific scenarios are encouraged only when supported by verifiable data and are not required prior to the tender stage (Section 5.11). It is anticipated that manufactures and building material suppliers will include detailed information on transportation emissions on delivery dockets in the future.

	immense, particularly for smaller projects or those with diverse material sourcing. Accurate A4 calculations depend on precise material origin and transport data. Although the SEAI plans to establish a National EC Database to provide generic data, the emphasis on project-specific data for later stages places the burden of tracing on contractors. The complexity of modern construction supply chains, with multiple tiers of suppliers and subcontractors, makes this a formidable task, particularly for SMEs who may lack the digital infrastructure or contractual leverage to demand such granular data. If contractors cannot reliably obtain or track this granular data, they will either default to less accurate generic values or provide estimates that lack verifiability. This risks the "garbage in, garbage out" phenomenon, where the reported GWP figures for Module A4, despite being mandatory, may not accurately reflect real-		

	world impacts, thereby undermining the credibility and utility of the entire GWP assessment. Recommendation To mitigate the significant burden of data collection on contractors, particularly SMEs, SEAI should provide clear templates and simplified reporting methods. This could include tiered reporting requirements, allowing greater reliance on verified generic data for smaller projects or pre-defined simplified default assumptions for common materials and transport scenarios where project-specific data is impractical. Furthermore, developing user-friendly digital tools designed for ease of use by non-specialists could significantly streamline the data-gathering process.		

5.4 A5	**Addressing the Soft Costs of Evidence Gathering** Beyond the direct costs of materials and labour, the implementation of the new GWP methodology introduces "soft costs" associated with evidence gathering and compliance, which are often underestimated by industry stakeholders. **Administrative Burden and Underestimation** The CIF highlights that contractors and design teams often underestimate the administrative burden, time, and resources required for GWP certification. These "soft costs" are not direct material or labour expenses but represent significant overheads regarding personnel time dedicated to data collection, training for new processes, the setup of internal tracking systems, and coordination across complex supply chains. This consistent underestimation leads to frustration during the certification process itself. It also	To tackle this critical issue, SEAI should launch a targeted and comprehensive awareness campaign. This campaign ought to educate contractors and design teams on the significance of accurately accounting for evidence gathering in the tendering process. It should offer realistic estimates of the time and resource commitments necessary for GWP compliance, potentially providing training programmes or best practice guides for seamlessly integrating GWP	The SEAI Life-Cycle GWP Calculation Methodology is designed to align with Article 7(2) of the recast EPBD and the Delegated Act amending Annex III. While the methodology outlines the technical requirements for Life-cycle GWP calculation and reporting, it does not extend to procurement practices or project-level resource planning. SEAI acknowledges that data collection and compliance efforts may introduce administrative overheads. To support implementation, SEAI will provide information for potential GWP assessors and publish guidance materials to promote consistency and transparency in reporting. The recommendation is noted and may inform future engagement strategies in collaboration with relevant industry bodies.

	results in design teams and contractors failing to allocate the necessary time and resources properly for data collection within their tendering processes. This may cause projects to exceed budgets or fall behind schedule due to unforeseen compliance efforts, creating a disincentive for contractors to engage proactively with the GWP assessment process. While the methodology focuses on the calculation of GWP, the CIF's concern highlights the process of data acquisition and compliance. If these "soft costs" are consistently underestimated in tendering, it results in either under-resourced compliance efforts (leading to poor quality data or non-compliance) or financial losses for contractors who absorb the unexpected costs. This "unseen" barrier may result in inflated contingency costs in bids as firms strive to account for unknown administrative burdens. Ultimately, this situation distorts the market by failing to	data collection into existing project workflows from the earliest stages. Such proactive education will help set realistic expectations and alleviate the strain experienced during the certification phase.	

	accurately reflect the true cost of sustainable construction and creates friction within the industry, potentially hindering the adoption of best practices and the overall transition to lower-carbon construction.		

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Section 3		Suggest that a GWP assessment is required at commencement notice stage to ensure that it is carried out at design stage and is not simply a 'check box at completion'	The advice at European Commission level is that design teams engage in life-cycle GWP assessments at as early a stage as is practically possible, as early engagement will have the greatest influence on achieving the lowest life-cycle GWP for a project.
Section 3		GWP assessors should have a background in the construction industry and hold a professional qualification. The GWP will effectively become a design and should hold the appropriate PI for making such decisions.	Noted. Life-cycle GWP assessors will need to hold a professional qualification and have a background in the construction industry. Further clarification on the minimum requirements and training will be added in future updates to the Methodology.

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5.4.3 Waste and Waste Management		The default value for recording of waste should be significant to incentivise accurate reporting of waste, and not over procurement of materials.	Throughout the entire methodology, default values and scenarios have always been selected with a conservative approach. This is to stimulate parties involved in the design and construction of a building to gather more accurate project-specific data and strive to reduce GHG emissions.

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5.7 B4 - Replacement		Provision should be made in the methodology to encourage use of quality materials that will lead to fewer replacement cycles. There should also be guidance and scope for designers to select more replacement cycles, for example external paint and render materials will require more replacement and maintenance in a severely exposed location that that in a sheltered location with little exposure.	Section 5.7 on Module B4 (Replacement) outlines the requirements to account for building components replacement in the LC GWP calculation. Replacement impacts depend on the lifespan of the component and its LC GWP factor. For generic materials, default expected lifespans (appendix A, section A.3, table 13) shall be used. For specific products and project-specific scenarios, default lifespan can be replaced by product-specific values. Provided that robust information are available to support longer or shorter lifespans, and values are calculated in accordance with the standards and requirements outlined in section 5.7, paragraphs 7 and 8.

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5.9 B7 Operational Water Use		If operational water use is to be excluded from the scope of the GWP calculation achieving the target set by the RIAI Climate Challenge should be incentivised, otherwise there will be no onus to meet the target	Future phases of the implementation of the recast EPBD require to set limit values for the LC GWP value of buildings. Such values are expected to become the GHG emissions targets for new constructions. Any other target referring to other environmental impacts associated with the building falls outside the scope of SEAI LC GWP calculation methodology.
	Specific guidance will be required for off site construction. Will the onus be on the suppliers to provide the GWP for their components. The methodology for calculating the transport emissions would need to include the potential 'double handling' of materials, how will these be reported.		Off site construction activities inclusive of additional transportation emissions arising from 'double handling' shall be included in the calculated A1-A3 value associated with the production stage. At construction stage, the transportations emissions for off site constructed elements is accounted for under module A4. These can be calculated based on default scenarios or based on more specific transport distance information gathered by the LC GWP assessor.

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	The definition of "GWP assessor" and the certification/registration of "GWP assessor" are not clear in the methodology.		Noted. The definition of a GWP Assessor, including certification and registration requirements, has not been finalised at the time of publishing. Further clarity will be provided in future versions of the methodology
Section 4.7	Two approaches are given but there is no suggestion for which one should be used.	Suggest one approach (maybe calculate as a separate category)	A single approach will be selected, with additional clarity to be included in future versions of the LC GWP Calculation Methodology

Section 5.4.1 - A5.1 End-of-Life Stage (C1-C4)	For C1-C4, will the default EC value for A5.1 be applied to the end-of-life stage? For now, each LCA module of C1-C4 is separated for estimation and although some default assumptions are given for each module, no default EC values are provided. In the early design stage, the prediction of C1-C4 could be difficult if no default EC values are given. In further research, maybe default EC values can be developed. For C1, different default EC values can be provided based on the building's structure frame type (e.g., concrete, steel, timber, etc). Or suggest appropriate percentages of A5.2 for C1 (Table 7) according to different structure frame types instead of giving options to the industry. For C2, the average distance within Ireland can also be estimated by investigating the waste processing factories. For C3-C4, the default EC values can also be given according to different building structure		From the text of the draft delegated act, “Member States may choose to exclude processes related to pre-construction demolition and transport of construction workers to and from the site. If a process related to pre-construction demolition or transport of construction workers to and from the site is calculated, the results shall be reported as separate indicators” At early stages of design, when generic materials are selected from the Ireland’s National Embodied Carbon Database of Building Materials, emissions related to stage C will be pre-calculated and based on default scenarios. The national database will contain these default figures. At later stages, it is responsibility of the LC GWP assessor to decide if end of life scenarios are to be changed based on more accurate information, or default scenarios can be maintained.

	frames. For suggesting default EC values for C1-C4, there are two main approaches. First is to estimate C1-C4 in the unit "kg CO2eq/m2" and the second is to link C1-C4 with A1-A3. For example, in Vancouver By Law (VVBL), the default assumption of C1-C4 is 5.6% of A1-A3. In further research, maybe these two methods can be considered and compared to decide which one is more appropriate for the Irish context.		

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Section 5.4.1 - A5.2	No reference for the default assumption (40 kg CO2eq/m2 GIA).		Noted. The figure was presented in Sturgis et al. (2024). *Whole life carbon assessment for the built environment*.
Section 5.14	A subtitle is missing → "5.14.2 Waste processing for reuse/other types of recovery"		Noted. Further research is currently ongoing to provide default values for other waste processing scenarios.
Section 5.15	The table has no captions.		Noted. Caption will be added from the revision of the methodology.
Section 5.15	How often should we update the Table 11 values considering that the current values are given based on RICS 2024 level.		The values in table 11 have been updated and are taken from the 2025 UK Government GHG Conversion Factors for Company Reporting published by the Department for Energy Security and Net Zero.
Section 5.16	Which power source should be referenced for the avoided generation of electricity and heat? This should also be suggested.		Noted. This assumption will be clarified in the next revision of the LC GWP calculation methodology.
Page 6 / Table 1 (Ramboll report)	International EPD/ENVIRONDEC	International EPD/ENVIRONDEC	Noted, the sentence will be amended to "*International EPD/ENVIRONDEC*" in the next revision of the LC GWP calculation methodology.
Page 17 / Table 4 (Ramboll report)	ICE Database v3/v2 is now updated to v4	ICE Database v4	Noted

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Page 17 / Table 4	Geographical limitations should be declared	Add a column for the geographical limitations	Table 4 Summarises EPDs under the ECO Platform. If considering materials from this platform, transportation/geographical emissions will be accounted for in module A4.
Page 17 / Table 4	Why EPD International database is not included?		The EPD International database is classified as 'product-specific' data under Table 1.
All	ICF recognises the work done to bring the methodology to the point of public consultation and the thoroughness/quality of the drafts shared. ICF is keen to be involved in the development & implementation of this initiative to help the construction industry understand & properly address the challenge it faces. ICF also welcomes the commitment made at the public consultation workshop to update methodology / associated databases on an annual basis, if required.	Important that SEAI are given the resources to tweak/update database values and methodology on an annual basis.	

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Glossary of Terms and Definitions	Whilst headquartered in London, the Institution of Structural Engineers (IStructE) defines itself as a global rather than merely 'British professional body'. There is, for example, an IStructE Northern Ireland & Ireland branch and many Irish structural engineers are chartered via the Institution. The 'About Us' section of the IStructE website describes itself as 'The Institution is the world's largest membership organisation dedicated to structural engineering.'	Adopt IstructE definition. IStructE NI&I branch could be contacted if a more detailed description is required.	Noted, IStructE definition will be amended in the revision of the LC GWP calculation methodology.
4.1	Lifecycle stages A-D are to be mandatory. Welcome that D is to be reported separately, however, it will be important to develop specific, transparent guidance on Stage D as this stage has traditionally been approached with far less rigour than A-C.	Develop specific, transparent guidance for Stage D assessments.	Further research is ongoing on module D to identify the most appropriate way to report its emissions in a transparent, scientific, and fair manner. Further details will be included in future revisions of the methodology.

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4.1.1 / Figure 1	Understand that module A0 included as per RICS updates is not simply 'not mandatory' for EPBD but rather excluded? If the option to calculate is to be retained, guidance should be produced to support assessors calculating associated impacts.	Provide clarity on status of A0.	In line with prEN 15978, “Module A0 that covers preliminary activities is not usually used as part of the environmental assessment of a building, however module A0 may be included in the assessment report as additional information.” Following guidance outline in the draft delegated act, “Member States may choose to exclude processes related to pre-construction demolition and transport of construction workers to and from the site. If a process related to pre-construction demolition or transport of construction workers to and from the site is calculated, the results shall be reported as separate indicators” Guidance on optional modules will be added to the LC GWP calculation methodology.

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4.3 / A.2 Table 12	Table 12 would suggest that the entire external works are to be included. This differs from discussion at public consultation. Capturing construction across the full-site (red line for site will have been provided as part of planning process anyhow) avoids penalising taller/higher-density/brownfield developments.	Provide clarity on extent of development to be assessed.	Table 12 is derived from the draft Delegated Act amending Annex III of the recast EPBD. In which it is stated that the LC GWP calculation shall cover the minimum scope of building components in accordance with tier 3. Prior to the meeting of the European Commission Expert Group on the 23/10/2025, External work was "Require only if covered by the EPC". In the current draft of the delegated act (23/10/2025 post meeting), the entire external works are now considered as "Optional". Discussion remain ongoing on the scope of building components i.e. should they be limited to the footprint of the building (e.g.: perimeter of the external walls) or should it cover the full site and be limited by the red line. SEAI agrees that capturing construction within the site red line reduces the risk of penalising some developments and ensures a fair LC GWP assessment.

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4.3 / A.2 Table 12	Understand that this is outside the scope of this exercise but holistic carbon assessment to include ongoing transport/broader infrastructure impacts would help ensure that outcomes from this exercise would not penalise brownfield development.	Note for future potential development of the methodology.	SEAI acknowledges the benefit of a holistic carbon assessment. Even though this falls outside the scope of the recast EPBD, guidance on how to best undertake a LC GWP appraisal of new construction vs. refurbishment, or brownfield vs. greenfield development, will be included in future revisions of the methodology. We also repeat guidance outline in the draft delegated act, "Member States may choose to exclude processes related to pre-construction demolition and transport of construction workers to and from the site. If a process related to pre-construction demolition or transport of construction workers to and from the site is calculated, the results shall be reported as separate indicators"
4.4	Note that functional unit will be 'useful floor area'. Traditionally most embodied carbon and many WLC calcs were done per gross floor area. Understand the reason/logic for the change.	Capture both 'useful floor area' AND 'gross floor area' from those completing assessments. This will facilitate future benchmarking against historic studies &	In alignment with IPMS, SCSI definitions, and Building Cost Estimation, useful floor area is identified as GIA for the vast majority of buildings typologies and has IPMS 3 for offices, which equates somewhat to the NIA. We appreciate the need to capture LC GWP intensity per m^2 of both IPMS 3 and GIA area to facilitate future comparison against historical assessments, this will be

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		alternative international studies.	implemented from the beginning of pilot/data collection phase.
4.4	For some buildings (for example stadiums/sports arenas, some transport facilities, etc) a per m2 figure will not always be very insightful/useful.	Allow for GWP to be calculated over other functional units but reported in addition to the floor area.	While the potential benefits of using alternative functional units for specific building types are acknowledged, the functional unit defined in the EPBD—per square metre (m^2)—will remain the standard. SEAI may consider incorporating voluntary supplementary metrics to present results for specific building typologies, strictly for informational purposes.

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4.8.1	For usability, especially for early stage, it may be necessary to define typical typologies for different scopes. For some disciplines, even at planning stage, BOQs do not typically capture full set of quantities. For example, MEP distribution or steel/aluminium connections associated with timber frame. Comparison of EC of standard typologies	Define typical typologies for early stage entry. Arup Zero Level 1 approach as presented at IStructE Climate Emergency Conference 2023 may provide a model.	It currently under discussion the option to provide a set of default LC GWP intensities to be used at early stages. Such intensities could be associated with different building systems/components and could be pro-rated based on the area of the building and tailored -- within a defined range -- based on the characteristics of the building. The use of these default intensities would not require the availability of a BoQ and would be strictly restricted to early stages assessments. SEAI appreciates how this method could radically improve the quality of results obtained at early project stages, particularly during the initial implementation phase of the LC GWP calculation methodology. Arup Zero Level 1 approach will be reviewed in details to inform future discussions around this matter.
4.8.1	It may make sense to expand the 'Ireland National Embodied Carbon Database of Building Materials' beyond simply material impact factors but also to capture in one place all of the default values which are suggested, for example transport emission factors. Typology quantities &	Expand scope of Ireland National Embodied Carbon Database of Building Materials	SEAI will also consider storing default values and conversion factors within the National Database. For generic materials selected from the Ireland National Embodied Carbon Database of Building Materials, default values based on material type will be embedded within the software tool aligned with the Irish methodology. When a practitioner selects a

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	carbon suggested above could be stored here also.		generic material, these default values for further life-cycle modules will be automatically applied.
4.8.1 / Appendix C	Favoured approach of sector-specific EPDs will not be possible for some materials such as readymix concrete (RMC). RMC is tailored specifically to each project & element and whilst ICF will be publishing some representative sector EPDs, these will not cover sufficient mixes to address the need for the database.	ICF would be delighted to collaborate with the SEAI & partners to help derive robust & appropriate carbon intensity figures.	Noted and agreed. The objective is to ensure comprehensive coverage of Ready-Mix Concrete (RMC) types within the Ireland's National Embodied Carbon Database of Building Materials. The publication of sector Environmental Product Declarations (EPDs) for concrete is welcomed and will be incorporated by SEAI. For any RMC types not currently covered but required for the database, alternative calculation methods will be employed by our consultant. SEAI will continue to review and enhance the database over time, which may involve collaboration with industry stakeholders.
4.8.1 / Appendix C	Document should require that EPDs follow relevant European (and where they exist) Irish PCRs.	Document should require that EPDs follow relevant European (and where they exist) Irish PCRs.	Noted

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4.8.1 / Appendix C	Approach for developing/updating Carbon Database should consider that CPR implementation should mean that most construction products (eventually all) should have GWP information provided in DoPC. If this could be accessed this would provide very comprehensive information even if not in EPD format.	Consider possibility of updating based on availability of CPR-driven product-specific GWP information over coming years.	Agreed. Ireland's National Embodied Carbon Database of Building Materials will be updated on an annual basis and will take into account CPR data provided within the DoPC when it becomes available.
4.10	Perhaps this is driven by EPBD documentation, but it appears that the template is combining lifecycle modules into stages for data collection. It will be far easier to process & interrogate in the future if the information is capture at module level.	Revise template to capture information at module level. It may be necessary to accept A1-A3 combined but should not be necessary for the other modules.	The results reporting framework presented in section 4.10 of the LC GWP calculation methodology is aligned with the requirements of the Guidance on Article 7(2) and 5 of the recast EPBD. It is therefore the standard framework to report LC GWP results on the EPC at European level. Although, SEAI will introduce in the methodology further details about the minimum results breakdown to report in the LC GWP calculation report and, eventually, in the EPC and related documentation. SEAI agrees that a breakdown by module is a necessary requirement for future interrogation of results.

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5.3 / Table 2	Are the distance figures provided here intended to be mean/median distances or maximum distances? If the former, the figure for Locally manufactured (general) would appear to be high. Is there a source for these?		The distances presented in Table 2 of Section 5.3 of the LC GWP Calculation Methodology are intended to represent seven default transport scenarios. These scenarios should be used in the absence of more specific data (e.g., the manufacturer's distance from the building site, actual transport mileage, etc.). They aim to define a representative area around any building site from which construction materials are likely to be sourced. The scenarios have been developed conservatively to avoid underestimating transport impacts, particularly for remote locations. The primary sources for these scenarios are the RICS Whole Life Carbon Assessment (WLCA) guidance (Section 5.1.3) and the SEAI Position Paper. Specifically, for the ""Locally Manufactured (general)"" scenario, RICS cites the BRE Global Product Category Rules (PCR) for Type III Environmental Product Declarations (EPDs) of Construction Products to EN15804+A2 (2023) as the data source. If ICF wishes to provide any references or studies outlining alternative average transport scenarios for construction materials in Ireland, SEAI will consider and review the documentation as part of its ongoing analysis of transport emissions.

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5.4.1	Reporting of pre-construction demo is noted as voluntary. Given that several local authorities (for e.g. DCC) have already begun to ask for 'justification of demolition with respect to embodied carbon...', this could be made mandatory as has been the case for the GLA New London Plan WLCA guidance. Would better align with broader gov policy on increasing consideration of circularity & would allow more consistent comparison across the country.	Consider making A.5.1 mandatory.	As Module A5.1 is not a mandatory requirement within the draft Delegated Act, in the immediate term SEAI will not include it as a mandatory module within the SEAI Life-Cycle GWP Calculation Methodology
5.4.2	The capture of on-site information to allow the calculation of A5.2 is happening on some projects in Ireland currently but has been developed separately by a number of consultants/contractors. Guidance should be provided to contractors to standardise this.	Prepare guidance for the capture of on-site information & the calculation of 'as-built' A5.2	Noted. Guidance on the calculation of 'As-built' A5.2 will be developed in future versions of the methodology.

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A.4	End-of-life scenarios presented appear significantly different from what happens in practice in Ireland & in some cases in ways which could impact upon calculated values. For example, table suggests that 78% of solid timber in Ireland is recycled. This does not align with EPA C&D stats even on optimistic reading, particularly when much of it appears to end up in mixed waste streams.	Text in this section notes that research will be carried out to better define end-of-life scenarios. This is very welcome.	SEAI notes that end-of-life scenarios are currently drawn mostly from RICS guidance and require further development. Research is currently ongoing and will be progressed in the coming months to define Ireland specific end-of-life figures and requirements for all materials.
Biogenic Carbon and End-of-Life Scenarios	Framework must fairly reflect long-term carbon storage benefits of timber and account for different end-of-life scenarios. Current assumptions may overstate timber impact if emissions are automatically included without considering reuse or landfill storage.	Credit durable timber for long-term storage; develop guidance on when biogenic carbon can be treated as delayed emissions or permanent sequestration; promote reuse in structural applications.	While timber does offer carbon storage benefits, Module C is scenario-based, and we can only conservatively assume future end-of-life scenarios based on current practices. Published LC GWP calculation methodology accounts for timber impact considering production emissions, as well as maintenance and end of life. Guidance to include reuse and landfill storage related impacts is provided in the document. SEAI is currently undertaking research work to further develop end-of-life scenarios and requirements that better represent Ireland specific conditions. These will be included in next revisions of the methodology.

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Not declared	Use of Generic Data - Defaulting to generic or European datasets risks penalising Irish timber systems if not properly contextualised. Risk of disadvantage if high-quality Irish-specific data is not available.	Co-develop representative sectoral EPDs for Irish timber frame with ITFMA; SEAI to support EPD development; label generic sources and allow for updates as Irish data improves.	SEAI agrees that without high-quality, Irish-specific data, the embodied carbon values for certain products may not accurately reflect the Irish context. SEAI does not offer support services for EPD development and expects that, if an industry body seeks a more accurate representation of its product, it would need to undertake this process independently. This approach has already been adopted by other sectors. If a sectoral EPD is developed for a product and complies with the relevant standards, it will be included in the Ireland's National Embodied Carbon Database of Building Materials to provide a more accurate figure.
Not declared	Transparency and Industry Engagement - Greater transparency needed on modelling assumptions and database updates. Current process risks losing industry support if not open and responsive.	Create formal advisory group including timber frame sector; publish assumptions; allow corrections to EC database entries.	When the national embodied carbon database of generic building materials is published, SEAI are happy to engage with industry representatives.

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Not declared	Low-Carbon Timber Solutions - Timber systems already offer NZEB compliance and low embodied carbon. More support needed to make timber central to Ireland's climate strategy.	Recognise timber frame systems as key low-GWP typologies; promote in guidance and procurement policy; showcase best practice in EC database.	While Irish Timber Manufacturer Association comment on support is noted, promoting timber frame use in guidance and procurement policy is outside the scope of Article 7(2) of the recast EPBD and the remit of the embodied carbon team within SEAI. It is an objective of the LC GWP calculation methodology to ensure that timber's GHG emissions are calculated in an accurate and fair manner, as for any other construction material. Transparency and fairness of representation are key pillars of the methodology, as a result promotion of some materials against others or develop the calculation in ways that favours some solutions would be against these principles. Timber will be included in the Ireland's National Embodied Carbon Database of Building Materials, which will show both its GWP Total and GWP Biogenic for Modules A1–A3. End of life scenarios will be further developed to ensure that they are representative of current end-of-life practices in Ireland. Such scenarios will aim also at appropriately and fairly reflect any carbon stored in construction materials and potentially released at end of life.

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