

2nd stage criteria

Degree of innovation – section on Knowledge sharing –
and scalability



Degree of innovation

From intermediate to breakthrough innovation

- State-of-the-art
- *How the project will go beyond*: plant design, operating approach, construction, performance, quality, reliability, availability, maintenance, economics

Contribution to other EU policy objectives

- Energy efficiency *
- Circularity economy *
- Use of electricity from renewable origin
- Net carbon removals *
- Additional GHG emission savings *

Is the project applying best practices?
Can it perform even better?

* *substantiate claims with calculation integrated as a separate tab in the GHG emission excel sheet*

Scalability – market potential for widespread application

Project level and regional economy impact

- Further expansion at project site and other sites
- Regional economy impact, including sector coupling, and cooperation with other regional actors; impacts on economic growth and jobs at regional level
- Knowledge-sharing plan and activities planned to promote the results and maximise the impact

Sector impact

- Extent to which the technology of the project can be applied within the sector *
- Expected cost reductions
- Resource constraints and how they can be overcome

Economy-wide

- Extent to which the technology of the project can be applied across the economy *
- Potential to create new value chains or reinforce existing ones
- Contribution to development of strategic autonomy in industrial supply chains

Consider **short / medium term** and **long-term** impacts

Knowledge sharing goals

- ✓ de-risking innovative low-carbon technologies with regard to wide-scale commercialisation
- ✓ acceleration of deployment
- ✓ increasing the undertaking of, and confidence in these technologies by the wider public
- ✓ maintenance of a competitive market for the post-demonstration deployment of the technologies

Knowledge sharing activities

Beneficiaries

- Knowledge-sharing reporting
- Own knowledge-sharing activities
- Proactive and systematic public communication

CINEA

- information, communication and promotion actions
- organise specific seminars, workshops or, where appropriate, other types of activities to facilitate exchanges of experience, knowledge and best practices as regards the design, preparation and implementation of projects

Knowledge sharing in practice

- Knowledge-sharing is an obligation of the grant award: failure to comply means that the grant award may be adjusted
 - But no obligation to disclose if risk of reverse engineering/ability to obtain patent
 - Knowledge-sharing will start after grant signature, i.e. includes the periods to financial close and to entry into operation
- ➡ [See draft Knowledge-sharing template](#)
- Knowledge-sharing plan: possibility for beneficiaries to do more than the minimum obligation

The knowledge-sharing plan shall set the objectives, key messaging, target audiences, communication channels, social media plan, and relevant indicators for monitoring and follow up of own knowledge-sharing activities

➡ Check also the presentations and recording from the preparatory event: [From NER 300 to the Innovation Fund: knowledge-sharing for innovative clean tech projects](#)

2nd stage criteria

GHG emission avoidance

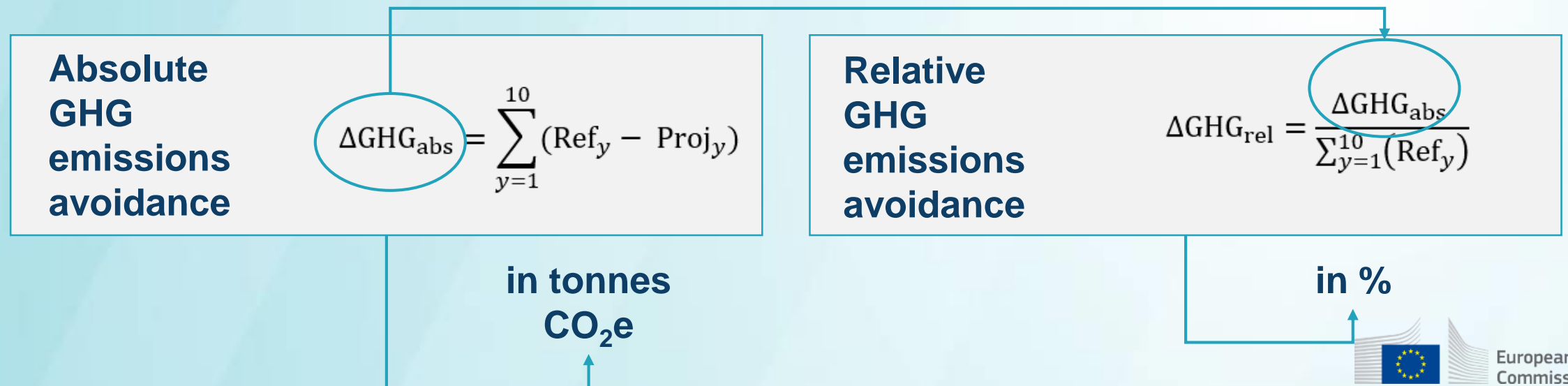


Recap of the GHG emission avoidance methodologies

Absolute GHG emission avoidance is the difference between:

- the **emissions that would occur in the absence of the project** (*Ref*), and
- the **emissions from the project activity** (*Proj*)

Timescale: 10-years. Forecasting: emission factor will be fixed for the 10 years of calculation (incl. for the period of monitoring and reporting)



What changes in the second stage in relation to the first stage?

Additional emissions sources included in the boundaries of the calculation

$$\Delta\text{GHG}_{\text{abs}} =$$

$$\text{EII:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{inputs},y} + \text{Ref}_{\text{processes},y} + \text{Ref}_{\text{products},y} + \text{Ref}_{\text{use}} + \text{Ref}_{\text{EoL}} - (\text{Proj}_{\text{inputs},y} + \text{Proj}_{\text{processes},y} + \text{Proj}_{\text{products},y} + \text{Proj}_{\text{use}} + \text{Proj}_{\text{EoL}}) \right)$$

De minimis inputs restricted to <10% of the total emissions



$$\text{CCS:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{release},y} - (\text{Proj}_{\text{capture},y} + \text{Proj}_{\text{transport pipeline},y} + \text{Proj}_{\text{injection},y} + \text{Proj}_{\text{transport},y}) \right)$$

$$\text{RES:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{grid or heat},y} - \text{Proj}_{\text{bio},y} \right)$$

$$\text{ES:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{energy},y} + \text{Ref}_{\text{services},y} - \text{Proj}_{\text{energy},y} \right)$$

First Stage
Equations

What changes in the second stage in relation to the first stage?

Additional emissions sources included in the boundaries of the calculation

$$\Delta\text{GHG}_{\text{abs}} =$$

$$\text{EII:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{inputs},y} + \text{Ref}_{\text{processes},y} + \text{Ref}_{\text{products},y} + \text{Ref}_{\text{use}} + \text{Ref}_{\text{EoL}} - (\text{Proj}_{\text{inputs},y} + \text{Proj}_{\text{processes},y} + \text{Proj}_{\text{products},y} + \text{Proj}_{\text{use}} + \text{Proj}_{\text{EoL}}) \right)$$

De minimis inputs restricted to <5% of the total emissions

$$\text{CCS:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{release},y} - (\text{Proj}_{\text{capture},y} + \text{Proj}_{\text{transport pipeline},y} + \text{Proj}_{\text{injection},y} + \text{Proj}_{\text{transport},y}) \right) \quad \leftarrow \text{No changes in the second stage}$$

$$\text{RES:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{grid or heat},y} - (\text{Proj}_{\text{bio},y} + \text{Proj}_{\text{geo},y} + \text{Proj}_{\text{on-site},y}) \right)$$

$$\text{ES:} = \sum_{y=1}^{10} \left(\text{Ref}_{\text{energy},y} + \text{Ref}_{\text{services},y} - (\text{Proj}_{\text{energy},y} + \text{Proj}_{\text{on-site},y}) \right)$$

**Second Stage
Equations**

Annex C updated for clarity but no changes in substance

1) On the **choice of sector for manufacturing facilities** for components (section 1.2.);

- Main option: quantify emission avoidance during use phase as described under renewable energy resp. energy storage, any emission reductions in the manufacturing process may be presented separately for Degree of Innovation;
- Alternatively, if the main reduction in emissions is due to the manufacturing process, the applicant can choose EII;
- In any case: the sector choice should match the methodology choice: RES (apply section 4), ES (apply section 5), EII sector (apply section 2)

2) How emissions associated with **transport of raw materials and inputs** are treated in EII (section 2.2.)

- In general: not necessary to account for emissions associated with transport of raw materials and inputs, transport of intermediate products between sites within the project boundary or distribution of final products in order to align with how EU ETS benchmarks are calculated
- Exceptions: transport of CO₂ or waste; replacing products with physically different products (but the same function)

3) When the possibility of virtual storage can be used for EII, section 2.2.2.4;

4) The calculation of **relative emission avoidance** when innovation concerns only part of a plant, section 2.3: it is possible to consider only this part for the calculation of the GHG_{rel} if it is technically feasible to convert the entire plant with the new technology;

5) The format of the **monitoring plan**: the plan should be integrated in the GHG emissions calculation tool;

6) The **contractual requirements** for manufacturing plants for components for energy storage: highlighting the requirement in a separate section 5.1.1.1.

Updated reference to the applicable EU act for product benchmarks for second stage in section 2: Commission Implementing Regulation (EU) 2021/447 of 12 March 2021 determining revised benchmark values for free allocation of emission allowances for the period from 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC of the European Parliament and of the Council, available at https://eur-lex.europa.eu/eli/reg_impl/2021/447.

New tool for EII projects and new tabs to support your applications

The updates to the tools have been motivated by the common mistake observed and inspired by the practices

The screenshot shows a spreadsheet with columns A, B, C, D, and E. Row 10 is titled 'Using the spreadsheet'. Row 12 contains the text: 'The cells are color-coded to guide the user. Captions are on the sheets where data entry is required.' Row 14 is a legend titled 'Colour code' with four entries: 'Enter data' (blue), 'Calculated data' (green), 'Select an option' (yellow), and 'Please provide additional information' (grey). Row 20 is titled 'Structure'. Row 22 contains the text: 'The spreadsheet is divided into tabs according to its contents and purposes'. Below the text is a row of tabs: 'Overview', 'Summary', 'Reference emissions', 'Project emissions', 'Conversion factors', 'Assumptions', 'Checklist', 'Example GHG', 'Degree of Innovation', and 'Scalability'. The 'Overview' tab is highlighted with an orange box, and the 'Degree of Innovation' and 'Scalability' tabs are highlighted with a red box.

Tabs updated or revised

New tabs!

A calculation tool is now available for EII projects. Applicants are strongly encouraged to use this in the second stage

Applicants will benefit from having a common and more comparable structure, but will still be able to tailor it to their operations

ETS benchmarks and other relevant emission factors already part of the database

Summary									
This is a Pivot Table. As such, changes you make to the data set are not automatically picked up by it. To update the pivot table with the applied changes to the text or numbers in your data set, you need to refresh it: (1) Click any cell inside the pivot table. (2) Right click									
Row Labels	Sum of t CO2e								
Refinputs									
Refprocesses									
Refproducts									
Refuse									
RefEoL									
Grand Total									
Reference emissions calculation									
Note: for many projects the reference emissions for processes will be based on an EU ETS benchmark, fossil fuel comparator or other natural-gas-based disaggregate process emissions, and may be no emissions in the inputs, products, use or end of life boxes. Note that there may still be input emissions									
Projected operational data									
Source	Plant / Unit	Process	Input	Output	Parameter monitored	Description of parameter	Data unit	Year 1	Year 2
Inputs [add rows and column, as needed]									
Ref _{inputs}									
Ref _{inputs}									
Ref _{inputs}									
Processes [add rows and column, as needed]									
Ref _{processes}									
Ref _{processes}									
Ref _{processes}									
Products [add rows and column, as needed]									
Ref _{products}									
Ref _{products}									

GHG emission factors, and other conversion factors for calculation of reference emissions					
Type of data	Description	Fuel / Feedstock / Product	Proposed value	Data unit	Source
Default factors					
ETS Product benchmarks	Coke-oven coke (obtained from	Coke	0.217	tCO2e / t	Commission Implement
ETS Product benchmarks	Agglomerated iron-bearing proc	Sintered ore	0.157	tCO2e / t	Commission Implement
ETS Product benchmarks	Liquid iron saturated with carbon	Hot metal	1.288	tCO2e / t	Commission Implement
ETS Product benchmarks	Anodes for aluminium electrolysis	Pre-bake anode	0.312	tCO2e / t	Commission Implement
ETS Product benchmarks	unwrought non-alloy liquid aluminium	Aluminium	1.464	tCO2e / t	Commission Implement
ETS Product benchmarks	Grey cement clinker as total clinker	Grey cement clinker	0.693	tCO2e / t	Commission Implement
ETS Product benchmarks	White cement clinker for use as	White cement clinker	0.957	tCO2e / t	Commission Implement
ETS Product benchmarks	Quicklime: calcium oxide (CaO)	Lime	0.725	tCO2e / t	Commission Implement
ETS Product benchmarks	Dolime or calcined dolomite as	Dolime	0.815	tCO2e / t	Commission Implement
ETS Product benchmarks	Mixture of calcium and magnesium	Sintered dolime	1.406	tCO2e / t	Commission Implement
ETS Product benchmarks	Float/ground/polish glass (as to	Float glass	0.399	tCO2e / t	Commission Implement
ETS Product benchmarks	Bottles of colourless glass of a	Bottles and jars of colourless glass	0.290	tCO2e / t	Commission Implement
ETS Product benchmarks	Bottles of coloured glass of a n	Bottles and jars of coloured glass	0.237	tCO2e / t	Commission Implement
ETS Product benchmarks	Melted glass for the production of	Continuous filament glass fibre	0.309	tCO2e / t	Commission Implement
ETS Product benchmarks	Facing bricks with a density > 1	Facing bricks	0.106	tCO2e / t	Commission Implement
ETS Product benchmarks	Clay bricks used for flooring and	Pavers	0.146	tCO2e / t	Commission Implement
ETS Product benchmarks	Clay roofing tiles as defined in E	Roof tiles	0.120	tCO2e / t	Commission Implement
ETS Product benchmarks	Spray-dried powder for the production	Spray-dried powder	0.058	tCO2e / t	Commission Implement
ETS Product benchmarks	Plasters consisting of calcined	Plaster	0.047	tCO2e / t	Commission Implement
ETS Product benchmarks	Dried secondary gypsum (synthetic)	Dried secondary gypsum	0.013	tCO2e / t	Commission Implement
ETS Product benchmarks	Short fibre kraft pulp is a wood	Short fibre kraft pulp	0.091	tCO2e / t	Commission Implement
ETS Product benchmarks	Long fibre kraft pulp is a wood	Long fibre kraft pulp	0.046	tCO2e / t	Commission Implement
ETS Product benchmarks	Sulphite pulp produced by a sulphite	Sulphite pulp, thermomechanical	0.015	tCO2e / t	Commission Implement

Summary | New fields to add information on key GHG indicators, including GHG emissions intensity

Key indicators	Description	Value	Data unit
Absolute GHG emission avoidance (Δ GHGabs)	Net absolute GHG emissions avoided thanks to operation of the project during the first 10 years of operation	0	tCO2e
Relative GHG emission avoidance (Δ GHGrel)	Relative GHG emissions avoided due to operation of the project during the first 10 years of operation	0	%
GHG emissions in reference scenario (Ref)	GHG emissions that would occur in the absence of the project during the first 10 years of operation	0	tCO2e
GHG emissions in project scenario (Proj)	GHG emissions associated with the project activity and site during the first 10 years of operation	0	tCO2e
Average GHG emissions intensity of the installations to produce a unit quantity of principal product in the reference scenario, or EU ETS	Principal product 1		tCO2e / unit quantity of principal product 1 <i>[Please replace with adequate unit]</i>
	Principal product 2		tCO2e / unit quantity of principal product 2 <i>[Please replace with adequate unit]</i>
	Principal product 3		tCO2e / unit quantity of principal product 3 <i>[Please replace with adequate unit]</i>
Average GHG emissions intensity of the installations to produce a unit quantity of the principal product in the project scenario	Principal product 1		tCO2e / unit quantity of principal product 1 <i>[Please replace with adequate unit]</i>
	Principal product 2		tCO2e / unit quantity of principal product 2 <i>[Please replace with adequate unit]</i>
	Principal product 3		tCO2e / unit quantity of principal product 3 <i>[Please replace with adequate unit]</i>

Application Form B

Application Form C

Knowledge Sharing



Best practices: a structured and tidy summary table is expected to facilitate transferring results to the forms, and reduce mistakes in the calculation of reference emissions for projects with multiple products

Reference & Project emissions | Updated columns for insertion of data traceability information

Projected operational data									GHG emissions due to production in the reference scenario				Data traceability													
Source	Plant / Unit	Process	Input / Output	Parameter monitored	Description of parameter	Data unit	Year 1	Year 10	Type of data	Value	Unit / t product	t CO2e / [unit]	t CO2e	Area / Department for collection and archiving	Data source	If applicable, equipment used for monitoring, including details on accuracy and calibration	Monitoring frequency	QA/QC Procedures	Additional description of the monitoring system	Reliability						
Inputs <i>[add rows and column, as needed]</i>																										
Ref _{inputs}																										
Ref _{inputs}																										
Ref _{inputs}																										
Processes <i>[add rows as needed]</i>																										
Ref _{processes}	<p>Data traceability</p> <p>Provide a brief description of your monitoring plan. It may include procedures for data collection procedures (information on how the parameters are measured/calculated, aggregated, recorded, calculated, checked/reviewed and reported), as well as roles and responsibilities. You may include diagrams showing all relevant monitoring points.</p> <table border="1"> <thead> <tr> <th>Area / Department for collection and archiving</th> <th>Data source</th> <th>If applicable, equipment used for monitoring, including details on accuracy and calibration</th> <th>Monitoring frequency</th> <th>QA/QC Procedures</th> <th>Additional description of the monitoring system</th> <th>Reliability</th> </tr> </thead> </table>																			Area / Department for collection and archiving	Data source	If applicable, equipment used for monitoring, including details on accuracy and calibration	Monitoring frequency	QA/QC Procedures	Additional description of the monitoring system	Reliability
Area / Department for collection and archiving	Data source	If applicable, equipment used for monitoring, including details on accuracy and calibration	Monitoring frequency	QA/QC Procedures	Additional description of the monitoring system	Reliability																				

Best practices: A clear verification trail that includes details for gathering and reviewing data and links to the original references used might secure an easier and faster assessment of the estimated operational data informed in the application. It will also ensure beneficiaries can track back the basis of the calculation to update data and to **use it as starting point for the Monitoring Plan**. Additional elements and explanations can be added in a separate tab.



Assumptions | New tab reserved to document quantitative and qualitative assumptions used in the calculations

Quantitative assumptions							
Data / Assumption	Proposed value	Data unit	Description	Basis or source of the assumption	Hyperlink to the original source, if applicable	Brief description of the monitoring plan	Area / Department responsible
<i>Example: Share of organic waste in the MSW incinerated in project</i>	0.00% %		<i>Solid waste composition</i>	<i>Conservative assumption by the applicant to avoid possible overestimation of GHG emission avoidance claims</i>			
[add or exclude rows and columns, as needed]							

Qualitative assumptions					
Data / Assumption	Description	Basis or source of the assumption	Hyperlink to the original source, if applicable	Brief description of the monitoring plan	Area / Department responsible
<i>Example: No demand for offshore service vessels</i>	<i>No demand for offshore service vessels as O&M will be performed using drones</i>	<i>Based on project planning, and best practices in year 2020.</i>	Project Planning_O&M		
[add or exclude rows and columns, as needed]					



Best practices: a transparent documentation of methods and secondary data used to extrapolate/estimate the operational data allow for a more effective review of the robustness of data adopted, e.g., whether the characteristics of the proposed plant are credible and in line with basic engineering principles, or whether these have been selected in a conservative yet accurate manner, i.e., to avoid under/over estimation?

Checklist | New tab to assist applicants prepare their submission in line with the best practices

The document has been built based on the experience gathered from the 1st stage of the LSC, the common mistakes identified as well as the best practices followed by applicants. This tab is reserved for applicants to self-assess whether they are following the best practices in calculating and presenting GHG emission avoidance in order to eliminate possible mistakes.

Checklist for self-assessment of accordance with best practices

		Yes / No / NA
1	Alignment with the methodology Have the GHG calculations been submitted in an excel sheet that mirrors the GHG methodology, using the same terminology for GHG emission sources and activities within the scope of the given sector? (Please note that an excel template now exists also for energy intensive industries.) Any deviations are explained clearly and justified.	
2	Alignment with the methodology Have ONLY emissions inside the scope of the IF GHG avoidance criteria been considered for the final emissions calculation? (GHG savings that could be claimed under the Degree of Innovation criterion should be indicated separately, see next point.)	
3	Alignment with the methodology In case the project presents benefits which are out of the scope of the IF GHG emission avoidance criterion, has an excel-based calculation of these additional benefits with respect to GHG emission avoidance, energy and resource efficiency been provided? Does the calculation of the additional GHG emission avoidance follow the logic of the IF GHG emission avoidance methodology and the corresponding guidance? Have you presented the additional calculations in the separate tab 'Degree of innovation'? Have you referred to the excel file/tabs, when presenting the additional benefits under the degree of innovation criterion in Application Form B?	
4	Alignment with the methodology Have sufficient data and explanations to fully explain the project, its boundaries and its interactions with other installations been provided? Have the data used and methods adopted to estimate the GHG emissions and emission factors been documented in a transparent manner, creating a clear verification trail? Have you provided information sources and hyperlinks to the original reference in the application files?	
5	Alignment with the methodology Has the application been updated to take into account further details required in the second stage?	
6	Alignment with the methodology Have the principal product(s) and the reference products they substitute been identified? Do the principal product(s) represent the main objective of the project? Are the principal product(s) all in the same sector?	
7	Alignment with the methodology For projects with multiple products, have ONLY the GHG emissions attributed to the chosen "principal products" been considered in the reference emissions when calculating the RELATIVE GHG emission avoidance? (please note that whilst all emissions in the reference scenario shall be considered for the absolute avoidance calculation, ONLY emissions of PRINCIPAL PRODUCTS in the reference scenario shall be considered for the relative avoidance calculation)	

Checklist | New tab to assist applicants prepare their submission in line with the best practices

Alignment with IF methodology

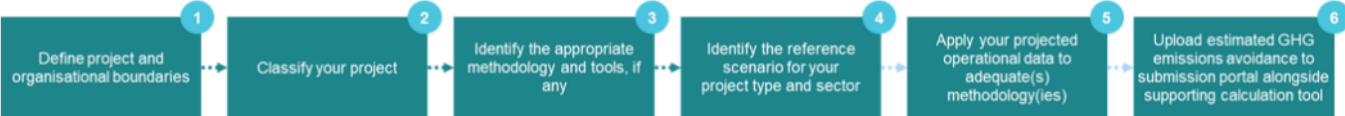
Transparency and robustness

Consistency and clarity

Have the GHG calculations been submitted in an excel that mirrors the GHG methodology, using the same terminology for GHG emission sources and activities within the scope of the given sector?
Have ONLY emissions inside the scope of the IF GHG avoidance criteria been considered for the final emissions calculation? (GHG savings that could be claimed under the DoI criterion shall be indicated separately)
In case the project presents benefits which are out of the scope of the IF GHG emission avoidance criterion, has an excel-based calculation of these additional benefits with respect to GHG emission avoidance, energy and resource efficiency been provided? Does the calculation of the additional GHG emission avoidance follow the logic of the IF GHG emission avoidance methodology and the corresponding guidance? Have you presented the additional calculations in the separate tab 'Degree of innovation'? Have you referred to the excel file/tabs, when presenting the additional benefits under the degree of innovation criterion in Application Form B?
Have sufficient data and explanations to fully explain the project, its boundaries and its interactions with other installations been provided? Have the data used and methods adopted to estimate the GHG emissions and emission factors been documented in a transparent manner, creating a clear verification trail? Have you provided information sources and hyperlinks to the original reference in the application files?
Has the application been updated to take into account further details required in the second stage?
Have the principal product(s) and the reference products they substitute been identified? Do the principal product(s) represent the main objective of the project? Are the principal product(s) all in the same sector?
For projects with multiple products, have ONLY the GHG emissions attributed to the chosen “principal products” been considered in the reference emissions when calculating the RELATIVE GHG emission avoidance? (please note that whilst all emissions in the reference scenario shall be considered for the absolute avoidance calculation, ONLY emissions of PRINCIPAL PRODUCTS in the reference scenario shall be considered for the relative avoidance calculation)
In case an EU ETS benchmark is used, are these values up to date?
Have each adopted assumption been disaggregated (i.e. in easily verifiable units) and with their rationale (i.e. the basis of the calculation) properly referenced and/or any data sources used?
Have projected operational data been backed by robust evidence or, if estimated/extrapolated, linked to the assumptions table? Are the conversions sufficiently visible so they can be easily reviewed and the robustness of the assumptions checked? Are the characteristics of the proposed plant credible and in line with basic engineering principles, e.g. heat and mass balance? Where assumptions have been applied for operational characteristics and KPIs used, have these been selected in a conservative yet accurate manner, i.e. to avoid under/over estimation?
For EII, has the applicant considered the emissions in all steps (inputs - processes - products - use - eol) for the calculation of relative emission avoidance? (When there is no change in emissions in a step, these can be disregarded for the absolute emission avoidance calculation but have to be considered in the relative emission avoidance)
Has a clean, tidy and organised excel with different colour codes (in order to visually differentiate cells with input data, comment and calculations) been provided? Have the calculations of the reference and project emissions been presented in different tabs to facilitate internal and external review of the calculations?
Have any double-counted emissions or avoidance/reduction been adequately disregarded from the calculations?
In case the relative emissions avoidance exceeded 100%, have you checked whether ONLY the GHG emissions attributed to the chosen “principal products” been considered in the reference emissions in your calculation?
Have absolute and relative emissions for the full 10 years of operation and, in the case of EII projects, the EU ETS benchmark used (if applicable) been objectively and visibly declared in the Application Form B? Are these values declared also consistent with the values indicated in the excel sheet?
For EII, has the process diagram in figure 2.1 of the methodology been properly filled in? Have any “zero” values inserted in any of the fields been properly justified?
For projects using feedstock of biogenic origin: have sufficient assurance that the biomass supplied will meet the sustainability requirements of the recast Renewable Energy Directive (RED II) and that will originate from feedstock with a low risk of causing indirect land-use change been provided?

Examples | Hypothetical examples are now available to illustrate the use of the tool for each project category

Large Scale projects: Example of calculation of GHG emission avoidance (EII) - methanol (Version 1.0 - 18 March 2021)



Context of project and organisational boundaries
 The project foresees the construction of a biomass gasifier and electrolyser to feed a methanol synthesis unit. The plant will use biomethane as the main gasifier feed, plus grid electricity and a fossil natural gas boiler for heat. The syngas from the gasifier will be complemented in the methanol synthesiser feed. The projected production is 100,000 t methanol per year once the facility reaches full capacity (projected for year 3). The reference scenario for methanol production is given in the GHG avoidance methodology - an emission factor of 82.5 gCO₂e/MJ may be used. The project scenario includes several inputs, several processes, and end of life emissions from disposal of the methanol. There are no additional non-principal products or changes in in-use emissions.

Classification
 Category: Energy Intensive Industry
 Sector: Chemicals
 Product: organic basic chemicals (methanol)

IF Methodology
 EII, Section 2 of IF LSC GHG Methodology

Reference scenario
 As stated in the GHG avoidance methodology for the energy intensive industries, the reference scenario for methanol may be based on the estimated GHG intensity of production of methanol from natural gas, given in the methodology as 82.5 gCO₂e/MJ. There is no ETS benchmark for standalone methanol production. The ETS refinery benchmarks include methanol production units but these refinery sub-units are not relevant for the IF.

Tab "Reference emissions":

Sum of t CO ₂ e	
Refinputs	-
Refprocesses	1,518,618.8
Refproducts	-
Refuse	-
RefEoL	-
Grand Total	1,518,618.8

Projected operational data																	GHG emissions due to production in the reference						
Source	Plant / Unit	Process	Input	Output	Parameter monitored	Description of parameter	Data unit	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Type of data	Value	Unit / t product	t CO ₂ e / [unit]	t CO ₂ e	C
Processes [add rows and column, as needed]																							
Ref _{processes}	Methanol plant	Methanol production	Natural gas	Methanol	Methanol output	Tonnes of methanol produced	tonnes	50,000	75,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	Other natural-gas-based fossil defaults	19.90	GJ	0.0825	1,518,619	Th all en hir rel
																					19		

Degree of Innovation & Scalability | New tabs embedded to facilitate calculation of selected figures to be reported under the two criterion

Degree of Innovation:

- 1) the degree to which the project goes beyond incremental innovation on a scale from intermediate to breakthrough innovation; and
- 2) The contribution of the project to further EU objectives for a climate-neutral economy:
 - (a) Energy efficiency as a main objective of the EU and the first building block of the Long-term Strategy;
 - (b) Circularity as a further essential part of a wider transformation of industry towards climate neutrality and long-term competitiveness;
 - (c) Contribution to deployment of renewable electricity. Projects that propose to use electricity from the grid must demonstrate whether they are using electricity of renewable origin and whether they are adding to the renewable deployment;
 - (d) Potential to deliver net carbon removals;
 - (e) Other GHG savings from emissions sources not included within the boundaries of the Innovation Fund methodology.

Scalability:

- 1) Scalability at the level of the project and the regional economy, including:
 - (a) Plans for further expansion at project site and the possible project's technology transfer to other sites,
 - (b) Cooperation with other actors of the regional economy,
 - (c) Impacts on regional economic growth and jobs,
 - (d) Quality and extent of the knowledge-sharing plan.
- 2) Scalability at the level of the sector, including:
 - (a) Extent to which the technology of the project can be applied within the sector and the expected emissions avoidance,
 - (b) Expected cost reductions and resource constraints.
- 3) Economy-wide scalability, including:
 - (a) Extent to which the technology of the project can be applied across the economy
 - (b) Potential to create new value chains or reinforce existing ones in Europe.

Third party verification of the GHG emission calculation

see AFB 8. Overview of supporting documents

- The verification shall be specific to the calculations submitted in the excel sheet and ascertain that it is correct, complete and done in accordance with the methodology in Annex C.
- Verification companies/organisations must be accredited verifiers according to Commission Implementing Regulation (EU) 2018/20672 or according to standards ISO 14065, ISO 14064-2 and ISO 14064-3.

THANK YOU!