Best Practice (1)

Admissibility & Eligibility

Degree of Innovation

GHG emissions avoidance

Best practice

Admissibility and Eligibility

María ALFAYATE, CINEA Deputy Head of Unit Innovation Fund

Comprehensive application: Complete and timely

- **Read carefully** all the requirements (including the admissibility and eligibility ones), guidance and instructions
- **Start well on time preparing** your application and do not wait for the last day to submit (you can still modify your application before deadline)
- **Specific supporting documents** are requested for **Innovation Fund grants**
- **Quality and clarity more important than quantity**
- Consult our FAQ, including for updates, and **use Helpdesk if unclear**

Best practice

Degree of Innovation

Degree of Innovation (DoI): Be exhaustive and underpin your

1- Establish the relevant State-of-the-Art in a clear and comprehensive manner.

Describe

Technological State-of-the-Art (of innovative tech proposed)
- Performance data
- Cost
- Production Characteristics
- Tech/system Readiness Level

Commercial State-of-the-Art (of best-available technology)
- Performance data
- Costs
- Product characteristics

2- Explain in detail why and how the innovation goes beyond incre mental innovation.

Identify

Barriers for scaling up of innovative technologies

Barriers for combining innovative technologies

Compare

3- Provide key performance data Evidenced in the feasibility study and other documentation.

Provide evidence

Key performance data of the project‘s (combination of) Innovative Technology(ies)
- Costs, product characteristics
- TRL/System Readiness Level
- Energy efficiency, circularity

Evidence

- Feasibility study
- Other supporting documents

- Compare the proposed innovation with both the commercial and the technological State-of-the-Art at EU and National level.
- Check thoroughly Annex D1.
- Provide all relevant information, be transparent and realistic.

Degree of Innovation – Hydrogen/Hydrogen Powered Vessel

Checklist	**State-of-the-art comparison** ✓	**Well substantiated Innovation** ✓	**Describes barriers for scaling up** ✓	**Transparency** ✓	**Evidence based** ✓
Examples	Well referenced and benchmarked state of the art.	Demonstrated innovation in each individual element of the project.	Solution presented with the establishment of a dedicated vessel construction platform.	Thoroughly describing all stages in the value chain.	Conceptual demonstration with operational considerations.

The relevant State-of-the-Art	**Conventional and Battery-drive trains for boats**	**Fossil fuel** (diesel) – Substantial GHG Emissions.	Conventional **diesel refuelling system.**	Conventional **diesel engines.**
Innovation	**Adaptation of a Fuel cell solution to an industrial scale boat**	**Fossil-free** Hydrogen – Full decarbonization.	Adaptation of **hydrogen refuelling systems** to a commercial operation on inland waterways.	Optimization of a **Hydrogen-powered propulsion system.**

Degree of Innovation – Solar Energy/PV Panels

Checklist	State-of-the-art comparison ✗	Well substantiated Innovation ✗	Transparency ✗	Evidence based ✗
Examples	The proposal does not address or characterise the existing state-of-the-art.	No innovation is demonstrated beyond the state-of-the-art, either at EU or national level.	Insufficient details on the feasibility study and technical parameters of the project.	The proposal does not provide credible data on performance data and plant design, construction and the operational approach.

	Product innovation		Business innovation	
The relevant State-of-the-Art	Crystalline silicon PV panels.	Use **widely available existing technologies with no credible advancement** (standard crystalline silicon PV panels) and other widely commercialized components.	Share of "just over 10%" of renewable energy production in the region.	"Improve the region's energy supply level and energy security". **No credible data presented**.
Innovation	Use "the most modern and eco-friendly technology".		Increase the share of renewable energy production.	

Best practice

GHG emissions avoidance

Uwe LUTZEN, CINEA Head of Sector, Innovation Fund Unit

Choose and apply the correct methodology: Dos

Follow the **IF GHG emission methodology** for calculation and reporting.

Clearly identify your **principal product(s)**, then select sector, category, calculator, and methodology section accordingly.

Use correct **emissions factor(s)** in line with the methodology. For example, use EU ETS benchmarks where relevant.

Justify choices made in the application of the GHG emissions avoidance methodology, when relevant.

Assumptions must be **robust, properly justified**, and **referenced.** Justify operational data, and use the hierarchy of sources when relevant.

Choose and apply the correct methodology: Don’ts

Do NOT use other GHG calculation approaches different than the **IF GHG Emission Avoidance methodology**.

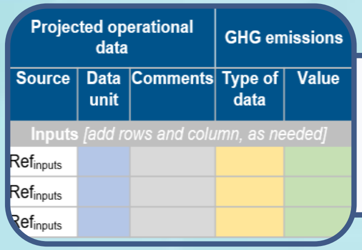
Do NOT choose a sector or a category that is **not compatible** with your principal product. Clearly justify your choice.

Do NOT deviate from the methodology by using different-than prescribed **emission factors**, this may result in a major error.

Do NOT forget to clearly and thoroughly justify your choices. It is one of your responsibilities as an applicant.

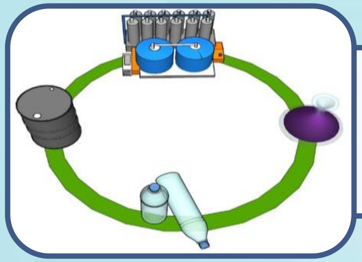
Do NOT provide unsubstantiated operational data.
Do NOT deviate from the relevant hierarchy of sources.

Use the provided GHG calculators: Dos

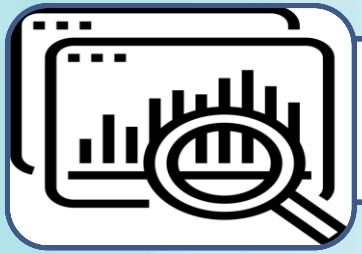


Projected operational data			GHG emissions	
Source	Data unit	Comments	Type of data	Value
Inputs *[add rows and column, as needed]*				
Ref_{inputs}				
Ref_{inputs}				
Ref_{inputs}				

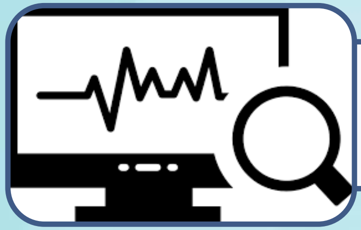
Clean, tidy and organised calculations using colour coding and clearly identifying each parameter that is used.



Provide full lifetime assessment in line with the IF GHG emissions **calculators** (spreadsheets) and methodology.

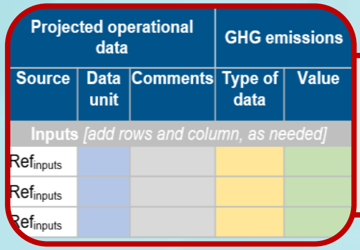


Further disaggregate parameters and provide formulas in the spreadsheet for more transparent and traceable calculations.



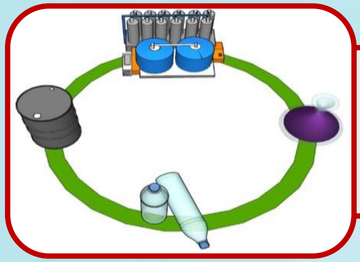
Provide a monitoring strategy by filling in the **data traceability** section of the spreadsheet.

Use the provided GHG calculators: Don’ts

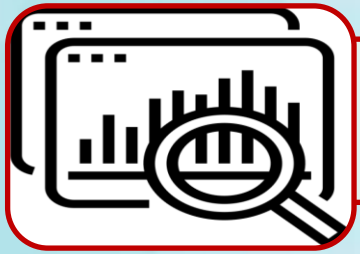


Projected operational data			GHG emissions	
Source	Data unit	Comments	Type of data	Value
Inputs *[add rows and column, as needed]*				
Ref_{inputs}				
Ref_{inputs}				
Ref_{inputs}				

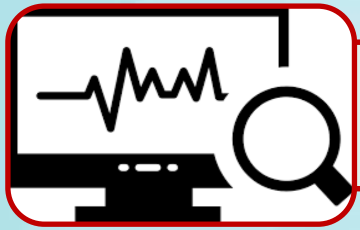
Do NOT forget to identify each parameter used in the spreadsheet, and clearly explain each step of the calculations.



Do NOT use other GHG emission calculation tools, other than the calculators provided.



Do NOT provide bulk numbers in the spreadsheet. Always include formulas and links to other cells where relevant.



Do NOT forget to fill in the data traceability section for the reference and project scenarios, and carbon credit sheet.

Be consistent across the documentation

ΔGHG_{abs}

In the **Application Form Part B Section 1**, clearly declare upfront the quantified absolute and relative emissions avoidance calculated for your project. **Follow this with a step-by-step calculation** of each parameter and references to the relevant cells in the Excel sheet.

Double check that the **absolute and relative emission avoidance** amount claimed, and the **sector, category, and principal product** chosen for your project **are the same in all the parts of the Application Form**, including Part A, Part B, Part C, and the GHG calculator.

Ensure that any **GHG savings that are excluded** from the methodology are **claimed separately** in the tab ‘Other GHG emissions avoidance’. Significant other GHG emissions may be rewarded with additional points.

Assumptions and emissions factors: Document and properly reference them

- Use projected **operational data backed by robust evidence.** Document in a transparent manner the assumptions adopted to estimate and extrapolate.
- In case of uncertainties **use conservative values**.
- Detail **all assumptions in a disaggregated manner** and properly reference them.
- **Provide a clear verification trail**: include the source of information and hyperlinks to the original reference, whenever a value is not provided in the methodology.

Main mistakes on GHG emission avoidance

1. Emissions that are not covered by the methodology are included in the calculations, or emissions that are covered are excluded

2. Assumptions and data not backed with supporting evidence

3. Wrong choice of **reference scenario** and emissions factor

4. Difference in scope between **reference and project scenarios**

5. Wrong choice of project **boundaries** with respect to the methodology

6. Additional GHG savings claimed under Absolute GHG emissions avoidance

Practical tips for Energy Intensive Industry projects: From inputs to end of life

- Fill-in **all the sections** of the GHG calculator, from **inputs** to **processes** to **end of life**.
- Include **inputs** even if they are the same in the project and reference scenario.
- Justify **de-minimis** inputs.
- Do **NOT** include emissions associated to **upstream fossil fuel supply** (e.g. extraction)
- Include **combustion emissions** for fuels.
- Include **end of life emissions** for chemicals and other products.

Projected operational data					
Source	**Plant / Unit**	**Description of parameter**	**Data unit**	**Year 1**	**Comments about data**
Inputs *[add rows and column, as needed]*					
$Proj_{inputs}$	Electrolysis plant	Electricity for hydrogen production	MWh	1,283,333	
$Proj_{inputs}$	Electrolyser	Amount of water consumed	tonne	207,900	
$Proj_{inputs}$	FT reactor	Consumption of catalyst	tonne	14	This is identified as a de-minimis input. Applicant should substantiate de-minimis status.
Processes [add rows and column, as needed]					
$Ref_{processes}$	Methanol plant	Tonnes of methanol produced	tonnes	50,000	
Combustion *[add rows and column, as needed]*					
$Ref_{combustion}$	Vehicle	Fuel supply to market	tonnes	12,500	For novel fuels including RFNBOs the stoichiometric combustion emissions must be included here
$Ref_{combustion}$	Vehicle	Fuel supply to market	tonnes	30,000	See above
$Ref_{combustion}$	Vehicle	Fuel supply to market	tonnes	7,500	See above
End-Of-Life *[add rows and column, as needed]*					
$Proj_{EoL}$	End of life	Fraction of biogenic carbon calculated using ratio of mass of biogenic carbon in carbon sources	tonnes	45,659	Assume that all produced methanol (and any materials produced from the methanol output) is eventually combusted or decomposed to release CO2 at stoichiometric ratios.
$Proj_{EoL}$	End of life	Fraction of non-biogenic carbon calculated using ratio of mass of biogenic carbon in carbon sources	tonnes	4,341	Assume that all produced methanol (and any materials produced from the methanol output) is eventually combusted or decomposed to release CO2 at stoichiometric ratios.

This table is a combination of **different examples** for illustrative purposes

Practical tips concerning project assumptions:
Use of principal products

- The **intended use of the product** must be substantiated and justified. For example, by providing **draft contracts**.
- For example, for products that can either be used as chemicals or fuels, the reference scenario can be built on the relevant **benchmark**, or on the relevant **fossil fuel comparator**, depending on the intended use.
- If it is not defined yet what will be the final use of the product, **conservative assumptions** should be used in the GHG emission avoidance calculation.
- If the assumed use of the product **is not well substantiated**, this may be identified as an issue during evaluation.
- If **less conservative assumptions** are used in the application, this may also result in issues during monitoring and reporting of GHG emission avoidance.

Example: generic hydrogen production

If a project produces hydrogen and cannot well substantiate a specific intended use, for example in transport, the reference scenario should be based on the EU ETS hydrogen benchmark, and the sector should be EII/hydrogen.

Example: hydrogen to be used in vehicles

If a project produces hydrogen that will be used in vehicles, the reference is based on the relevant fossil fuel comparator instead of using the hydrogen benchmark, and the project falls under sector EII/refineries rather than EII/hydrogen.

The application should demonstrate that, for example, a draft contractual arrangement exists with a hydrogen refuelling facility for mobility applications.

Example: hydrogen in heating

If a project focuses on the use of hydrogen in heating applications, and its principal product is heat, if falls under sector EII/other, rather than EII/hydrogen.

Practical tips for Manufacturing projects: Cost Share ($CS_{component}$)

- If a project manufactures an **entire** innovative **facility** or **product**, it can claim **100%** of the related GHG savings.
- If a project manufactures only a **component**, it can only claim a fraction **<100%** proportional to the cost of the component with respect to the cost of the full system.
- Clearly justify and substantiate your assumptions and calculations with respect to the $\mathbf{CS_{component}}$.
- This applies to manufacturing projects under every category (EII, RES, ES).

Applicants must allocate emissions avoidance from the use of the individual components proportionally based on the innovative components' cost as a fraction of the total capital cost of the relevant facility or the total retail price of the relevant consumer product. The total capital cost for a facility is the sum of the cost of an innovative component plus standard costs of the remaining components constituting a typical operational renewable energy or energy storage facility using the innovative component. For components used in consumer products, the retail price should be based on a typical use case for the component, and may exclude sales taxes. Applicants must provide appropriate references to justify this cost assessment.

> *Example: If an innovative component represents 25% of the total capital cost for an operational renewable energy/energy storage facility, then the emissions in the project and reference scenarios (and therefore the emission avoidance achieved) should be multiplied by 25%.*

$CS_{component}$ = innovative components' cost as a fraction of the total capital cost of the relevant facility or retail price of the consumer product. The total capital cost for a facility is the sum of the cost of an innovative component plus standard costs of the remaining components constituting a typical operational renewable energy facility using the innovative component. For components used in consumer products, the retail price should be based on a typical use case for the component, and may exclude sales taxes. Applicants must provide appropriate references to justify this cost assessment.

Source	Parameter monitored	Description	Unit of measure	Year 1	Year 2	Year 3	Comments
N	N	Number of renewable energy units supplied to markets by the proposed manufacturing plant.		30	120	270	
$CS_{component}$	component costs	Innovative components' cost as a fraction of the total capital cost of the relevant facility.		0.2	0.2	0.2	