



H2IF – Bridging Horizon 2020 to Innovation Fund

D5.1 – Reviewed guidance for supporting the community of applicants to the Innovation Fund instrument

Work package 5 – IF Proposals preparation second iteration and impact assessment

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Information

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NB: it should be noted that, as it was done in D4.1, the title of the deliverable D5.1 (and its public nature) have been reformulated to mention explicitly the community of IF applicants as target users. Initial title of the deliverable was ‘Reviewed action plan for proposals presentation’ with a dissemination limited to the consortium H2IF and the services of the Commission. The modified deliverable is public with a new title: ‘Reviewed guidance for supporting the community of applicants to the Innovation Fund instrument’.

Dissemination Level

SEN	Confidential	
PU	Public	X (modified)

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Abbreviations and acronyms

CORDIS	EC's Community Research and Development Information Service
CSA	Coordination and Support Action
DMP	Data Management Plan
EASE	European Association for Storage of Energy
EC	European Commission
ES	Energy Storage
FAIR	Findable, Accessible, Interoperable, Reusable
GA	Grant Agreement
GB	Gigabyte
GDPR	General Data Protection Regulation
GHG	Greenhouse Gas
H2	Hydrogen
H2020	Horizon 2020
HE	Horizon Europe
IF	Innovation Fund
MB	Megabyte
MS	Microsoft
PSI	Public Sector Information Directive
R&I	Research and Innovation
R&D	Research and Development
WP	Work Package

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Executive Summary

This document represents D5.1 “Reviewed guidance for supporting the community of applicants to the Innovation Fund instrument” developed under Task 5.1 “Definition of checklist and action plans for proposals preparation” of WP5 “IF Proposals preparation second iteration and impact assessment”, of the H2IF project, funded under Horizon Europe’s Call HORIZON-CL5-2023-D2-01 (Grant Agreement n.: 101137734). This public deliverable represents an updated standardised checklist of documents to be prepared and information to be gathered by applicants for the Innovation Fund applications, reviewing and updating previously delivered D4.1 in July 2024.

The deliverable, following the same structure as in D4.1, is organised in 7 main sections and annexes. After a general introduction of the document (Section 1), it describes an overview of the documents requested by the instrument (Section 2). Section 3 provides experience-based hints, Section 4 focuses on the first strategic decisions to be taken by applicants (topic, sector, product). Enabling templates for the applicants are detailed in section 5 (macro planning, annotated templates for the Business Plan and Feasibility Study). Section 6 to Section 8 conclude respectively with hints inspired by more mature IF awarded projects, the modalities of update and capitalisation process to be organised during the next stage of H2IF project.

1. Introduction

Work package 5 is dedicated to the second iteration of proposals preparation and impact assessment. The very first task ‘T5.1 Definition of checklist and action plans for proposals preparation’ is devoted to review and update the standardised checklist of documents to be prepared and information to be gathered for the IF applications, already presented in D4.1.

The current deliverable ‘D5.1 – Reviewed guidance for supporting the community of applicants to the Innovation Fund instrument’ intends to be of public nature for supporting future applicants targeting the preparation of a project to be submitted to the Innovation Fund instrument. It thus capitalises previous activities of H2IF¹ to go further in providing more operative plans for future applicants.

This deliverable includes:

- The **updated standardised checklist of documents** required by the IF call (and based on the 2024 call), it takes the form of a toolbox supporting preparation;
- **Annotated updated templates for two key documents of the application:** the Feasibility Study and the Business Plan. Both templates have been co-built based on the consultant track records. They will include guidance to support its preparation;
- **The organisation of the IF submission**, time wise, in the form of a macro-planning to be adapted and used by the applicants to match to the particular IF call they target.

A founding assumption retained to elaborate the current document is to consider a typical IF call based on the last available package of information, either formal prescription or guidance material (video recording of info days, tutorials, FAQ, etc.).

¹ in WP3 and deliverable D3.1 of H2IF project.



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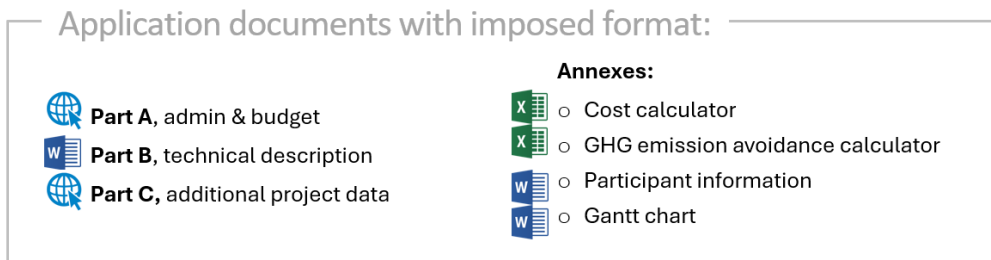
2. The standardised checklist of documents

Within this section, subsections from 2.1 to 2.3 are a reiteration of the section 2 presented in Deliverable D4.1.

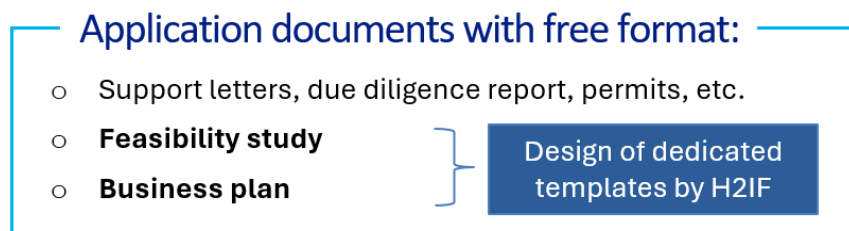
2.1. Observations on the types of documents requested by a typical IF call

Based on the 2024 call, the pieces required for the submission include (i) online forms, and (ii) documents to be uploaded to the submission portal.

The degree of prescription imposed by the IF call also matters. Some application documents must comply with a given format, as illustrated in the diagram below.



Other compulsory components can be provided under a free format. The H2IF consultants propose annotated templates for the Feasibility study and Business Plan, which are two critical documents in the application: those annotated templates are included in Annex of the present report.



The request of a Knowledge Sharing Plan remains to be clarified according to the instructions of next IF call: guidance will then be updated accordingly.

2.2. The five evaluation criteria and the cascade mode of evaluation

The five evaluation criteria of an application are: the Degree of innovation, the GHG emission avoidance potential, the project maturity (Technical, Financial, Operational), the Replicability, and the Cost efficiency².

They follow a verification of eligibility and admissibility criteria in a cascade mode, including the four stages indicated in the figure below.

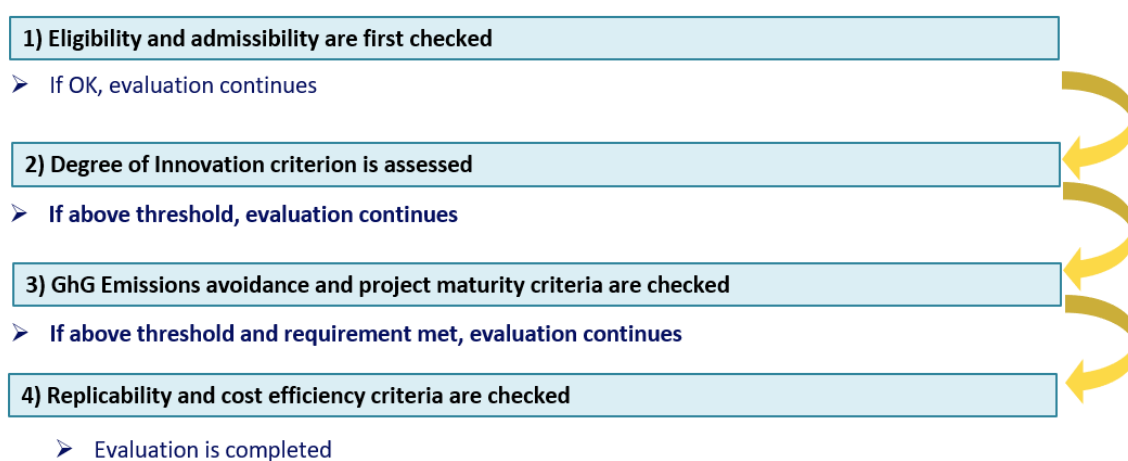


Figure 1: The cascade evaluation of an IF application

As a result, a list of pre-selected projects is established to be consulted with Member-States. Last, the selection procedure leads to the following outcomes: a project is either awarded grant, awarded seal of sovereignty if reaches all thresholds but does not win grant. Should a project not reach the threshold, the project will be invited to reapply next year.

2.3. Overview of IF components with regards to the evaluation criteria

Based on the track record of consultants on IF preparation, the standard list of documents publicly available (Part A, Part B, Part C, and annexes) was analysed according to their respective contribution to the five evaluation criteria (Degree of innovation, GHG emission avoidance potential, Technical maturity, Financial maturity, Operational maturity,

² Bonus points may also be given for specific cases.

Replicability, and Cost efficiency). Indeed, it appears that the overall matrix resulting from this cross analysis is far from being diagonal.

Next figures detail this analysis in two steps, first for Part A, B and C, then for the Annexes.

		Mandatory?	Degree of innovation	GHG emission avoidance potential	Technical maturity	Financial maturity	Operational maturity	Replicability	Cost efficiency
Part A	Budget and administration	Y				X			X
Part B		Y							
	Section 0: Technical characteristics & scope				X				
	Section 1: Degree of innovation		X						
	Section 2: GHG emission avoidance			X					
	Section 3.1 Technical maturity				X				
	Section 3.2								
	Section 3.3 Operation maturity						X		
	Section 3.4 Risk management				X	X	X		
	Section 4: Replicability							X	
	Section 4: Cost efficiency								X
	Section 7.1 Work plan						X		
	Section 7.2 work packages & resources						X		
Part C		Y		X		X		X	X

Figure 2: cross analysis of Part A, B and C with regards to the evaluation criteria

		Mandatory?	Degree of innovation	GHG emission avoidance potential	Technical maturity	Financial maturity	Operational maturity	Replicability	Cost efficiency
Annexes									
	Feasibility study	Y	X	X	X				
	Any existing technical due diligence report	N	X	X	X		X		
	GHG emission avoidance calculator	Y		X					
	Business plan	Y				X			
	Letters of intent	N			X	X			
	Detailed calculation of relevant costs	Y				X			
	Financial Model Summary Sheet	Y				X			
	Applicant's detailed financial mode	Y				X			
	Gantt	Y					X		
	Participant information	Y					X		
	Knowledge Sharing Plan	check call						X	
	Audit statement on Relevant Cost	Y				X			

Figure 3: cross analysis of Annexes with regards to the evaluation criteria

Both figures can be used for pedagogical purposes to help applicants to be acquainted and for a self-assessment of the work carried out at any time of the preparation of the IF application:



- *Ex ante*, to guide the applicant in the complexity of various requests.
- *Ex post*, as a sanity check of completion of the arguments collected and built in each piece to support the respective requirements per criterion.

2.4. Simplifications compared to IF23 Call

The overall structure of the 2024 Innovation Fund call remained largely unchanged compared to the IF23 call; however, several simplifications have been introduced, as outlined below:

- A **detailed Knowledge Sharing Plan** is no longer required at submission. However, an outline remains mandatory in Application Form B and will be assessed under the **Replicability** award criterion.
- The **page limit** for Application Form B (Technical Description) has been **reduced to 70 pages**.
- A new **Annex 3** to the call document has been introduced, outlining the **minimum requirements for documentation of project funding support and contract terms**, intended to guide applicants.
- A **Feasibility Study (FS) template** is available in the Submission System (under "Part B templates"). The FS is **mandatory**; if the template is not used, applicants must ensure the same level of detail and information is provided (*new template is explained in detail in section 5.2 and Annex II – Annotate template for a Feasibility Study*).
- A **Business Plan (BP) template** is also available in the Submission System. The BP is **mandatory**; if the template is not used, the submission must still meet the same standards of detail and completeness (*new template is explained in detail in section 5.2 and Annex I – Annotate template for a Business Plan*).
- **Technical, financial and operational risks and mitigation measures** are **no longer required in Application Form B**. Instead, this information must be provided in the **Feasibility Study** (for technical and operational risks) and in the **Business Plan** (for financial risks) (*new templates are explained in detail in section 5.2 and Annex I – Annotate template for a Business Plan and Annex II – Annotated template for a Feasibility Study*).

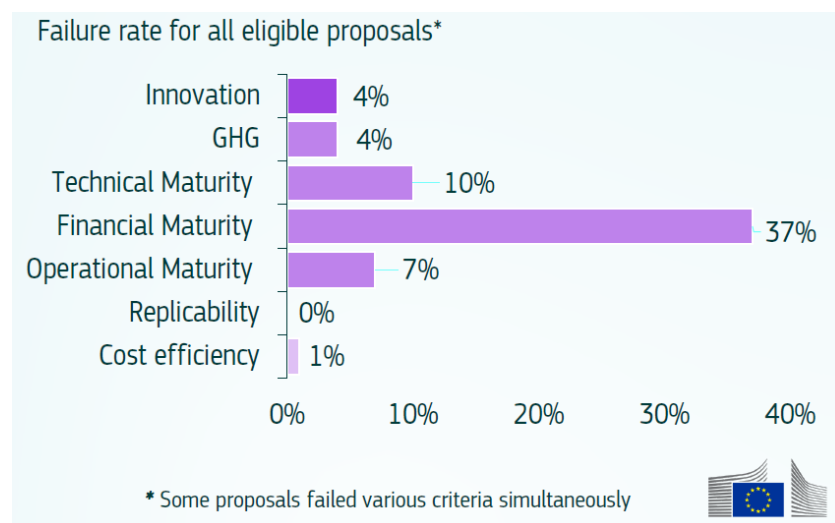
3. Hints and tips based on track record of previous submissions

A review of the five evaluation criteria is proposed with a selection of recommendations identified by the Innovation Fund programme for future applications. For more details one could refer to the **source Info Day Innovation Fund 2024 Call, December 2024**, for pedagogical purposes a concise version is proposed below by the H2IF consultants.

The five tables below have been enriched with specific features related to the H2IF domains (energy storage and Hydrogen).

Results per evaluation criterion

First of all, in the graphic below, it is shown the failure rate for all eligible proposals from IF23, for each of the evaluation criterion. Out of 281 evaluated proposals, 85 were pre-selected for funding, and 64 additional projects could not be funded due to lack of budget.



From the graphic, some key points can be outlined:

- It is clear that **financial maturity** is the **most challenging** step of the evaluation process.
- All proposals that reached the **replicability assessment passed it**.

Criterion Degree of Innovation



Criterion	Recommendations in brief	Lessons Learned IF23 Call	Key reasons for failure												
Degree of Innovation Components (if any): N/A	<ul style="list-style-type: none"> Build a clear narrative, Gather evidence, Refer to the 'Feasibility study Consider the ongoing 'IF projects' 	Out of 12 proposals failing under Degree of Innovation, the main reasons are: <table border="1"> <tr> <td>Innovation not sufficiently identified and justified</td> <td>74%</td> </tr> <tr> <td>State-of-the-art comparison not sufficiently well elaborated</td> <td>67%</td> </tr> <tr> <td>Consideration to existing projects</td> <td>55%</td> </tr> <tr> <td>Inconsistencies across documents</td> <td>55%</td> </tr> <tr> <td>Advancement vs commercial and technological state-of-the-...</td> <td>40%</td> </tr> <tr> <td>Evidence to support innovation claims not sufficient</td> <td>61%</td> </tr> </table>	Innovation not sufficiently identified and justified	74%	State-of-the-art comparison not sufficiently well elaborated	67%	Consideration to existing projects	55%	Inconsistencies across documents	55%	Advancement vs commercial and technological state-of-the-...	40%	Evidence to support innovation claims not sufficient	61%	<ul style="list-style-type: none"> Innovation not sufficiently identified and justified with credible evidence State of the art not sufficiently well elaborated Inconsistencies across documents
Innovation not sufficiently identified and justified	74%														
State-of-the-art comparison not sufficiently well elaborated	67%														
Consideration to existing projects	55%														
Inconsistencies across documents	55%														
Advancement vs commercial and technological state-of-the-...	40%														
Evidence to support innovation claims not sufficient	61%														
BEST PRACTICES															
1 Describe <ul style="list-style-type: none"> Describe relevant state of the art <ul style="list-style-type: none"> Include both technological & commercial aspects Provide quantitative inputs and evidence for: <ul style="list-style-type: none"> Costs Technical characteristics & performance TRL/SRL 	2 Identify <ul style="list-style-type: none"> How does your innovation go beyond state of the art? <ul style="list-style-type: none"> Compare with previous & ongoing EU and IF projects Provide geographical reference point Consider barriers: for scaling up & for technology integration 	3 Provide evidence ->Feasibility study, GHG calc., other <ul style="list-style-type: none"> Compare key performance data vs state of the art <ul style="list-style-type: none"> Relevant parameters Consider also energy efficiency and circularity Provide patent data (when relevant) Consider how will the innovation be implemented or integrated? 													

Criterion GhG emission avoidance

Criterion	Recommendations in brief	Lessons Learned IF23 Call	Key reasons for failure														
GHG emission avoidance Components (if any): Absolute, relative, quality of the calculation and minimum requirements	<ul style="list-style-type: none"> The clarity of the calculations and the careful selection of the domain and the sector 	Out of 11 proposals failing quality of GHG calculation, the main reasons are: <table border="1"> <tr> <td>Wrong assumptions, data not provided, or not backed with supporting evidence</td> <td>23%</td> </tr> <tr> <td>Wrong emission factor in the reference scenario</td> <td>23%</td> </tr> <tr> <td>Double counting of emissions</td> <td>15%</td> </tr> <tr> <td>Wrong calculation of waste or end-of-life emissions</td> <td>15%</td> </tr> <tr> <td>Difference in scope of reference and project scenarios</td> <td>8%</td> </tr> <tr> <td>Wrong or missing input emissions</td> <td>8%</td> </tr> <tr> <td>Minimum requirement for relative GHG emissions avoidance not met</td> <td>8%</td> </tr> </table>	Wrong assumptions, data not provided, or not backed with supporting evidence	23%	Wrong emission factor in the reference scenario	23%	Double counting of emissions	15%	Wrong calculation of waste or end-of-life emissions	15%	Difference in scope of reference and project scenarios	8%	Wrong or missing input emissions	8%	Minimum requirement for relative GHG emissions avoidance not met	8%	<ul style="list-style-type: none"> Poor assumptions Wrong emission factor Double counting of emissions Wrong calculations <p>Resulting in overestimations of GHG emissions avoidance</p>
Wrong assumptions, data not provided, or not backed with supporting evidence	23%																
Wrong emission factor in the reference scenario	23%																
Double counting of emissions	15%																
Wrong calculation of waste or end-of-life emissions	15%																
Difference in scope of reference and project scenarios	8%																
Wrong or missing input emissions	8%																
Minimum requirement for relative GHG emissions avoidance not met	8%																
BEST PRACTICES																	
<ul style="list-style-type: none"> Follow the IF GHG emission methodology for calculation and reporting Identify principal product(s), select sector, scenario and methodology accordingly Use correct emissions factor(s) in line with the methodology Justify choices made in the application of the GHG emissions avoidance methodology, when relevant Assumptions must be robust and properly justified 																	

Criterion Project maturity

Technical maturity

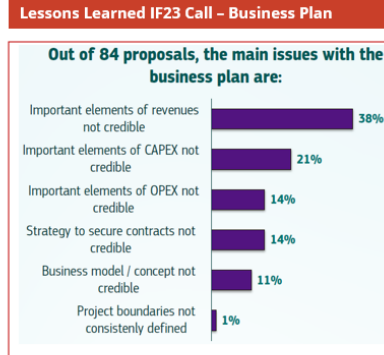
Criterion	Recommendations in brief	Lessons Learned IF23 Call	Key reasons for failure										
Project technical maturity Components (if any): N/A	<ul style="list-style-type: none"> Explain the degree of technology readiness of the proposed solution and the technical feasibility of delivering the expected output 	Out of 29 proposals failing technical maturity, the main reasons are: <table border="1"> <tr> <td>Technical risks and their mitigation strategies either not sufficiently identified or not credible</td> <td>73%</td> </tr> <tr> <td>Technical feasibility not sufficiently demonstrated by clear, detailed and credible data</td> <td>61%</td> </tr> <tr> <td>Claimed technology readiness not sufficiently supported by evidence</td> <td>49%</td> </tr> <tr> <td>Strengthening engineering foundations: based on system reliability and performance data</td> <td>44%</td> </tr> <tr> <td>Proposal clarity and level of detail not sufficiently elaborated and or supported by evidence</td> <td>34%</td> </tr> </table>	Technical risks and their mitigation strategies either not sufficiently identified or not credible	73%	Technical feasibility not sufficiently demonstrated by clear, detailed and credible data	61%	Claimed technology readiness not sufficiently supported by evidence	49%	Strengthening engineering foundations: based on system reliability and performance data	44%	Proposal clarity and level of detail not sufficiently elaborated and or supported by evidence	34%	<p>Technical feasibility claims not sufficiently supported by:</p> <ul style="list-style-type: none"> Proper identification of risks and mitigation measures Credible data and evidence Detailed strategies to achieve targets
Technical risks and their mitigation strategies either not sufficiently identified or not credible	73%												
Technical feasibility not sufficiently demonstrated by clear, detailed and credible data	61%												
Claimed technology readiness not sufficiently supported by evidence	49%												
Strengthening engineering foundations: based on system reliability and performance data	44%												
Proposal clarity and level of detail not sufficiently elaborated and or supported by evidence	34%												
BEST PRACTICES													
1 Describe readiness level <p>Describe actual readiness level of your technology based on credible data:</p> <ul style="list-style-type: none"> Be concise Be realistic Provide key facts and figures 	2 Identify <ul style="list-style-type: none"> Relevant data – from your previous stages: pilots / projects Include all relevant critical risks and mitigation strategies 	3 Provide evidence ->Feasibility study, GHG calc., other <ul style="list-style-type: none"> Due diligence report Procurement quotes MoU Signed letters of intents/ support 											



Financial maturity

Criterion
Project financial maturity
Components (if any): N/A

Recommendations in brief
<ul style="list-style-type: none"> Assess the project capacity to reach Financial Close within 4 years or faster through a credible and sound business model and business plan



Key reasons for failure

- Revenues: credibility and justification of prices, volumes
- CAPEX:
 - Justification missing,
 - No detailed breakdown,
 - Lack of evidence (including quotes from engineering and construction contractors)

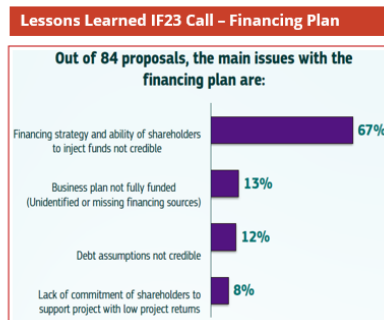
BEST PRACTICES

Business plan:

- Fully describe, substantiate and evidence the main revenues, CAPEX and OPEX assumptions and include a detailed breakdown and description of prices and volumes
- See Annex 3 of call text for minimum requirements on project contract terms

Financing plan:

- Clearly identify all funding sources with their terms and conditions and the progress made in defining and/or negotiating them with funding counterparts.
- Provide financial statements of the shareholder entities
- See Annex 3 of call text for minimum requirements on project funding support



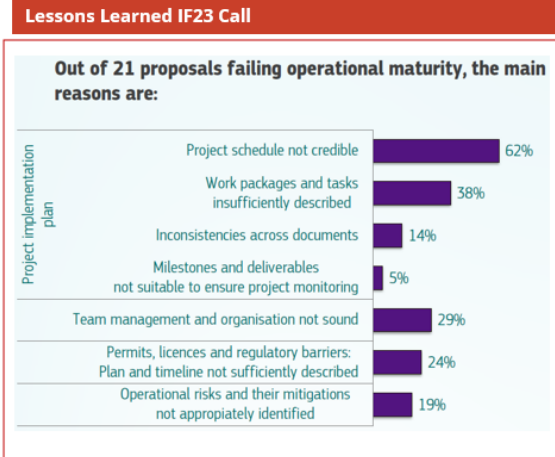
Key reasons for failure

- Ability to secure the required funding
- Commitment of shareholders
- Expected timing
- Steps to reach final investment decision
- Other issues related to debt assumptions (for instance debt repayment capacity)
- Unidentified or missing funding sources

Operational maturity

Criterion
Project operational maturity
Components (if any): N/A

Recommendations in brief
<ul style="list-style-type: none"> Credibility and level of detail of project implementation plan covering all project milestones & related deliverables



BEST PRACTICES

Operations	Timeline	Clear strategy
<ul style="list-style-type: none"> Define solid Work Packages and tasks Set clear and realistic deliverables, milestones and means of verification Include relevant operational risk assessment in the Feasibility Study Ensure availability of necessary know-how in the team 	<ul style="list-style-type: none"> Ensure consistency between Gantt & tasks/ WPs (interdependencies)/ FIF Consider realistic timing for: <ul style="list-style-type: none"> Construction and supply Obtaining permits, rights and licences Ensuring public acceptance Potential delays 	<ul style="list-style-type: none"> Clearly identify project parties and responsibilities Clear Role distribution Link Work Packages and corresponding financial costs Set a clear strategy for: <ul style="list-style-type: none"> Construction, considering targets/ deadlines & needs Obtaining permits, rights and licenses for a defined location Ensuring public acceptance

Provide contractual evidence

- For example: letters of support, MoUs, indicative terms of agreement for off-take agreements, key suppliers, quotes from vendors, EPC parties

Key reasons for failure

- Project implementation plan not credible
- Team management and organization not sound
- Permitting and **licences** plan and timeline not sufficiently elaborated
- Operational risks and their mitigation strategies not adequate



Criterion Replicability

Criterion	Recommendations in brief	Specific hints for this criterion
Replicability Components (if any): 5 components mentioned in the box *recommendations in brief	<ul style="list-style-type: none"> Address replicability in terms of efficiency gains, further deployment, resilience of EU industrial system, potential in terms of multiple environmental impacts, quality and extent of the knowledge sharing 	<ul style="list-style-type: none"> Address all aspects covering the replicability (mentioned in the box in the left) he plan for technology uptake in other sites: credibility and evidences shall be brought Credible assumptions on cost reductions: to be supported with evidence Exploitation: Elaborate ad hoc IPR and licensing strategies Communication and Dissemination strategies Refer to the policy framework (EU policy objectives and initiatives)
Score* <ul style="list-style-type: none"> Score of replicability of preselected applications for grant preparation ranging from 13.5 to 15 with an average ~14 <p>*statistics are based on LSC 2022 evaluation</p>		Other considerations specific to the H2IF domains <ul style="list-style-type: none"> The regulatory context of energy storage or hydrogen and the consideration of possible evolutions The consideration of existing roadmaps on Hydrogen or energy storage providing order of magnitude of industrial deployments

Criterion Cost efficiency

Criterion	Recommendations in brief	Specific hints for this criterion
Cost efficiency Components (if any): direct calculation from requested IF grant (and other public support/ abs. GHG emission avoidance)	<ul style="list-style-type: none"> We could decrease the IF grant requested (below the 60%) to be more competitive The score is known at the stage of the application 	<ul style="list-style-type: none"> Avoid the identified weaknesses for the criterion: <ul style="list-style-type: none"> WACC not aligned with methodology, ineligible cost included, change in the model start date (each for about 1/4 of situations). Other weakness consist in adopting a wrong choice of RC methodology or including inconsistencies
Score* <ul style="list-style-type: none"> Score of cost efficiency directly results from a calculation For applications preselected for grant preparation ranging from 10 to 12, with an average ~11.5 <p>*statistics are based on LSC 2022 evaluation</p>		Other considerations specific to the H2IF domains <ul style="list-style-type: none"> The search of complementary public fundings might impact the numerator of the calculation Elaborate and test scenarios of reduction of the IF grant request to comply with a target score

4. How to select the relevant Innovation Fund SECTOR and PRODUCTS for H2 and energy storage projects?

Last IF call was launched in December 2024 with a deadline in April 2025. It covered five topics with a budget of €2.4 billion. Apart from the IF24 Call, the IF24 Auction on RFNBO Hydrogen and the IF24 Batteries on manufacturing of electric vehicle battery cells (NEW) were published, with €1.2 billion and €1 billion of budget respectively.

Focusing on the IF24 Call, multiple options are open for an applicant wishing to use the Innovation Fund instrument.

Table 1: Overview of options for the IF instrument

Topics	Description
General decarbonisation (large-scale)	€1.2 billion available for projects with CAPEX (capital expenditure) above €100 million
General decarbonisation (medium-scale)	€200 million available for projects with CAPEX between €20 million and €100 million
General decarbonisation (small-scale)	€100 million available for projects with CAPEX between €2.5 million and €20 million
Clean-tech manufacturing	€700 million available for projects with CAPEX above €2.5 million focusing on component manufacturing for renewable energy installations, electrolysers and fuel cells, energy storage solutions and heat pumps.
Pilot	€200 million available for projects with CAPEX above €2.5 million focusing on validating, testing and optimising highly innovative, deep decarbonisation solutions in all sectors eligible for IF support ³

1 The very first decision relates to the selection of a topic that will determine the design of the application. The estimated CAPEX of the project is the criterion that will orient to a large-

³ i.e., technologies that can reduce relative GHG emissions by at least 75% compared to the reference scenario.



scale (above EUR 100 million), medium-scale (between EUR 20 and 100 million), or small-scale project (2.5-20 EUR million).

Two other topics can be targeted for the preparation of an IF application: the clean-tech manufacturing and pilot projects (for both categories, CAPEX shall be above EUR 2.5 million)

To finalise the decision, the size criterion shall be cross-analysed with the sector(s) covered by the application:

- The **‘pilot projects’** shall include highly innovative, deep decarbonisation solutions in a sector eligible for IF support
- The **‘cleantech manufacturing for components’** topic refers to renewable energy installations, electrolysers and fuel cells, energy storage solutions, and heat pumps. It promotes innovation either in cleantech manufacturing process or in improvements of the final product.
- Last for the other topics (**large-, medium-, small-**) the sectors covered are mentioned in Annex I and Annex III to the EU ETS Directive 2003/87, including CCU, CCS, renewable energy and energy storage technologies, maritime and aviation.

2 The second classification to be clarified very early in the project is the classification of projects into SECTORS and PRODUCTS:

- SECTOR is defined by grouping EU ETS activities, while
- PRODUCTS refer to products of sector, derived from EU ETS activities and PRODCOM.

The table below filters out the table of section A1.4 of the document named ‘Annex A: Methodology for calculation of GHG emission avoidance’ for future applications in H2IF related domains.

Table 2: classification of projects into sectors for H2IF-related applications (energy storage, hydrogen, energy intensive industries) based on the Annex A methodology.

SECTOR		PRODUCTS
Energy storage	ID electricity storage	electricity
Production facilities for components	Other energy storage	Electricity, heating/cooling e-fuels, hydrogen
Energy-intensive industries CCU	Refineries	fuels (incl. e-fuels)

Substitute products		
	Biofuels and bio-refineries	biofuel, bio-based products
	Hydrogen	hydrogen
	Other	Electricity, heat, other
CCS	CO2 Transport and Storage	CO2 Transport and Storage

When considering the above table, one key point emerges for projects dealing with Hydrogen: *shall the Hydrogen project consider the "energy intensive industries", if the choice is made to sell an industrial product, or an energy carrier would be more appropriate?*

The answer to this question will depend on the applicant choice concerning the Business Model.

3 The following recommendations are formulated to future applicants.

- **Hint 1:** each applicant shall proceed to the above decision and select the appropriate lines⁴ **based on business intentions**.
- **Hint 2:** each applicant shall determine the ‘topic’ (Table 1) based on the CAPEX criterion and the opportunity to apply to one specific call (pilots or components). To that purpose, the business intentions drive again to decide whether the application shall focus on the manufacturing of batteries (massive production) or on the production plant itself by selecting one line in Table 2.
- **Hint 3:** once the combination SECTOR X PRODUCTS have been defined, it is recommended to elaborate a model of the physical flows, again starting from the business intentions. It is recommended to describe the sequence: **physical flows → economic flows → financial flows** for a given system with boundary conditions.

⁴ Here ‘lines’ refer to the ‘topic’ introduced in Alinea ❶ and to the combination ‘SECTOR’ X ‘PRODUCT’ discussed in Alinea ❷



5. The developed templates

The H2IF consultants propose a generic planning to support the main steps of the application preparation, together with two templates for two strategical documents: the Feasibility Study and the Business Plan.

5.1. Process wise, a generic planning towards IF submission

In order to support the preparation of an application it is highly recommended to anticipate the preparatory steps far ahead of the publication of the call. This work has to be guided by the previous calls' instructions and guidance and will be adjusted once the call is published and according to new FAQ based exchanges with the IF services.

In addition, it should make clear that applicants have to allocate sufficient resources for the setting-up of the projects to reach the desired quality standards. Staffing of the team members must be foreseen by the applicant and at a sufficient level: an estimation of 3-5 person*months of internal resources, plus the support of an external specialised consultant. In case of involvement of multiple departments (e.g. case of a subsidiary and of a mother company in a large group), governance aspects on the decision making and validation at each step should be carefully addressed, since cause of possible risk of delays and of quality of the application. This aspect is further discussed in point II below.

The proposed macro planning has been built on five main stages and start about 9 months ahead of submission. The five stages are:

I) GAP ANALYSIS

Assuming that the starting point is the outcome of a Horizon project taking the form of a Key Exploitable Result, described in terms of maturity, technical characteristics and performance, ownership and intentions of exploitation, this first stage consists of the preliminary verification of the suitability of such outcome for an application to the Innovation Fund instrument. The eligibility criteria are thus examined and to understand the general consistency of the project with the decarbonation intentions. These criteria include:

- The verification that participant(s) are legal entities, and that projects are located in the EEA (EU MS and Iceland, Liechtenstein, Norway)
- The verification of estimated timelines: the ability to reach the financial close within 4 years after grant signature and the ability to operate more than 5 years after entry



of operation⁵, this constitutes the minimum monitoring period of GHG emission avoidance)

- The verification of eligibility of activities.

The constraint in terms of maximum amount for grant (less than 60% of the relevant costs) can be interpreted as a design constraint for the preparation of the application.

In addition, one shall mention that the admissibility criteria include the completeness of the application file as well as a submission according to the call and Submission System requirements (deadline, forms).

For the general call (Large, medium- and small-scale projects):

- Supporting innovation in low-carbon technologies and processes in sectors listed in Annex I and Annex III to the [EU ETS Directive 2003/87](#), including environmentally safe carbon capture and utilisation (CCU), as well as products substituting carbon-intensive ones produced in sectors listed in Annex I.
- Construction and operation of projects that aim at the environmentally safe capture and geological storage of CO₂ (CCS).
- Support the construction and operation of innovative renewable energy and energy storage technologies.
- A spectrum of activities in the maritime and aviation sector is also eligible when dealing with energy efficiency or low carbon technologies.

This category might be of interest for projects in H2IF domain provided that the project size (by CAPEX) is respected:

- Small scale projects: up to €20 million
- Medium scale projects: from €20-100 million
- Large scale projects: above €100 million.

Cleantech components manufacturing:

In its definition, the term ‘components’ includes the final equipment. Its rationale is to target the components and materials that have a significant impact in the cost and / or performance of the final equipment. This category aims at (i) fostering innovative manufacturing in cleantech for hydrogen production/consumption, renewable energy, and

⁵ Excepting SSP and Pilots (3 years instead of 5)



energy storage; as well as (ii) building industrial capacity, technology leadership, and supply chain resilience within the EU⁶.

This scope might be of interest for projects in H2IF domain: the focus shall be either on the final equipment or to components and materials having a significant factor in the final equipment (either in terms of performance or cost). Recycling or reuse can be an option for this category. Last, applicants shall give importance to factors such as cost reduction, performance improvement, efficiency, or sustainability.

Pilot projects:

This category aims at supporting more innovative or disruptive technologies in deep decarbonisation. One shall refer to the Annex I and III of the EU ETS Directive 2003/87 for the CCU or the products substituting carbon-intensive ones. The construction and operation of innovative energy storage, CO₂ storage and renewable energy installations, including electricity / heat grid connections is also included. Emphasis for these projects will be given to:

- the degree of innovation criterion is doubly weighted: projects will have to prove an innovative technology in an operational environment (no expectation to reach large scale demonstration or commercial production)
- the proof of project viability rather than project profitability
- the fact that the relative emission avoidance for these projects should be above 75%
- last, the contribution to EU industrial capacity, technology leadership, supply chain resilience and strategy autonomy.

II) GOVERNANCE

At the launch of the application, governance prescriptions have to be agreed between all parties involved in the preparation of the IF application: they are of prime importance to build a quality proposal. This includes the processes and the definition of the teams and their particular roles.

⁶ As mentioned above typical solutions are renewable energy installations, electrolysers and fuel cells, energy storage solutions (stationary or mobile for intra-day and long duration storage) and heat pumps.

Staffing and roles:

On this specific dimension, it is critical to appoint a team of complementary competences, with budgeted time to prepare the proposal:

- A project manager, who will liaise between the different expertise listed below (and how can cover one of them)
- A contact point at top management level, to ensure the full alignment and integration of the IF application with the corporate strategy
- A contact point in the financial department, to elaborate all financial models and plans requested
- A contact point in the technical department, to formalise the elements related to the technical feasibility and project implementation plan
- A contact point in the commercial department, to formalise all items related to the market strategy.

Follow up procedures:

- The progress on the various work streams needs to be carefully monitored due to the complexity and high number of tasks. It is recommended that a regular conference call is held by the project manager in a predefined pace (usually bi-monthly or weekly).
- The rules for the involvement of the team members to each of the call have to be defined and agreed.

Validation procedures:

- Decision making on critical points as well as on the validation of the components of application has also to be fixed ex ante: how and by whom will be made the review and the quality validation? How long will last the review stage?

III) BUILDING THE COMPONENTS

Components here refer to the collection of all data, proof of evidence, and arguments to sustain the evaluation criteria, the three types of maturity (Financial maturity, Technical maturity, Operational Maturity), the CO2 emission calculations, the degree of innovation.

The timeline foresees several iterations for a progressive setting-up during about three quarters (nine months). This means that the preparation of an application starts well ahead of the publication of the call, assuming that these components might be adjusted with the call requirements.

IV) FORMALISATION, REVIEW AND VALIDATION

This fourth section consists in the transcription of the components into the form of the mandatory documents and annexes in their expected form. In particular: Part A online, Part B, in the limit of a 80 pages document, Part C on line and a series of Mandatory annexes. These annexes include:

- Detailed budget table/relevant cost calculator ('financial information file')
- Participant information (including CVs and previous projects, if any) timetable/Gantt chart
- GHG emission avoidance calculator
- Feasibility study, 60 pages max.
- Business plan, 60 pages max.
- Detailed financial model
- Knowledge Sharing Plan
- Any letter supporting the project, either in terms of supply, due diligence report, permits licenses, authorisations.

V) CAPITALISATION

A return on experience is foreseen for multiple purposes: for the applicant for possible future applications (resubmission or not), for the consultants or other intermediates to generate experience-based hints and recommendations, for the H2IF project as reporting, for the IF instruction teams for providing recommendations in the call process.

TIMELINE

As mentioned above, we strongly recommend to applicants to anticipate the launch of a project application ahead of the call publication. We recommend a period of 9 months for the preparation from the launch to the submission as depicted in Figure 9 which illustrates the successive iterations. An intensification of the setting-up takes about 6 months ahead of the estimated submission deadline.

For readability purposes we split the macro planning into five blocks, the overview being displayed in Figure 9.

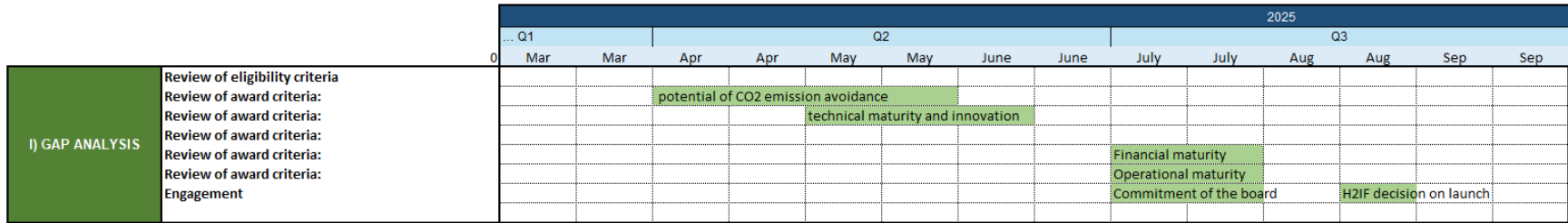


Figure 4: Planning 'Gap analysis'

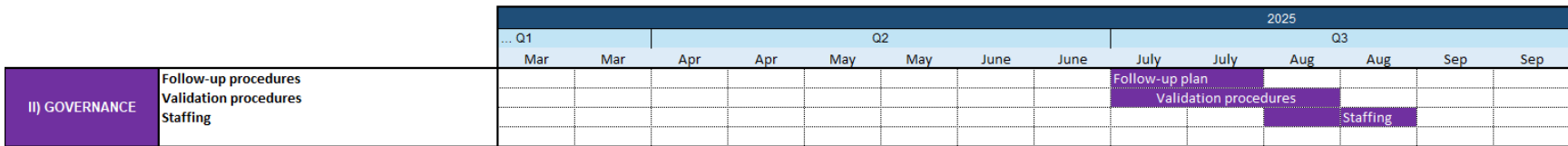


Figure 5: Planning 'Governance'

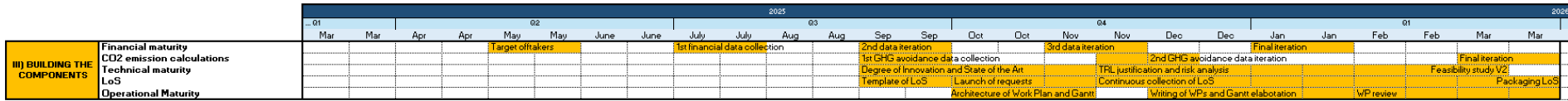


Figure 6: Planning 'Building the components'



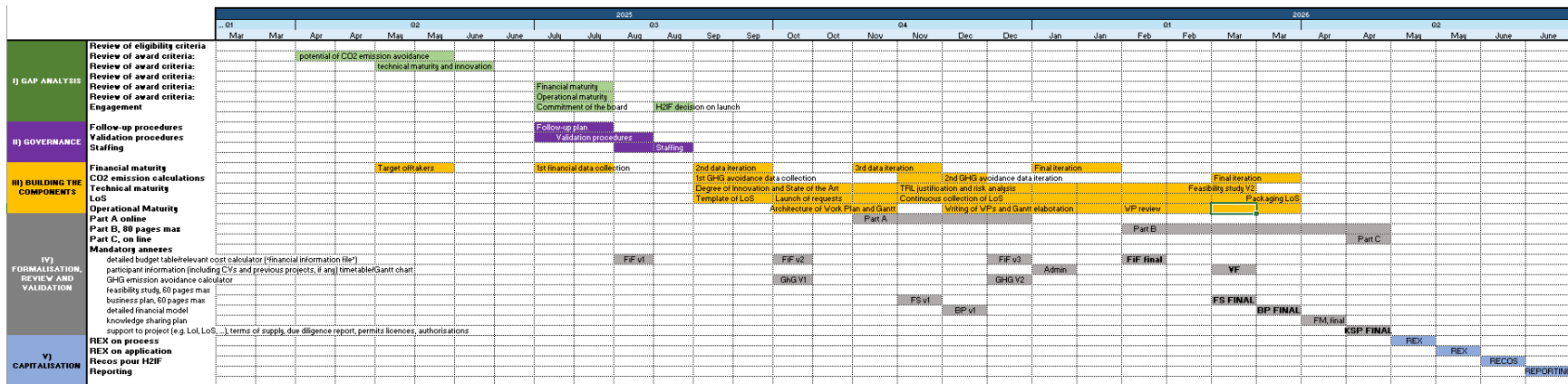


Figure 9: Typical macro planning in five stages for preparing an IF application





D5.1 – Reviewed guidance for supporting the community of applicants to the Innovation Fund instrument

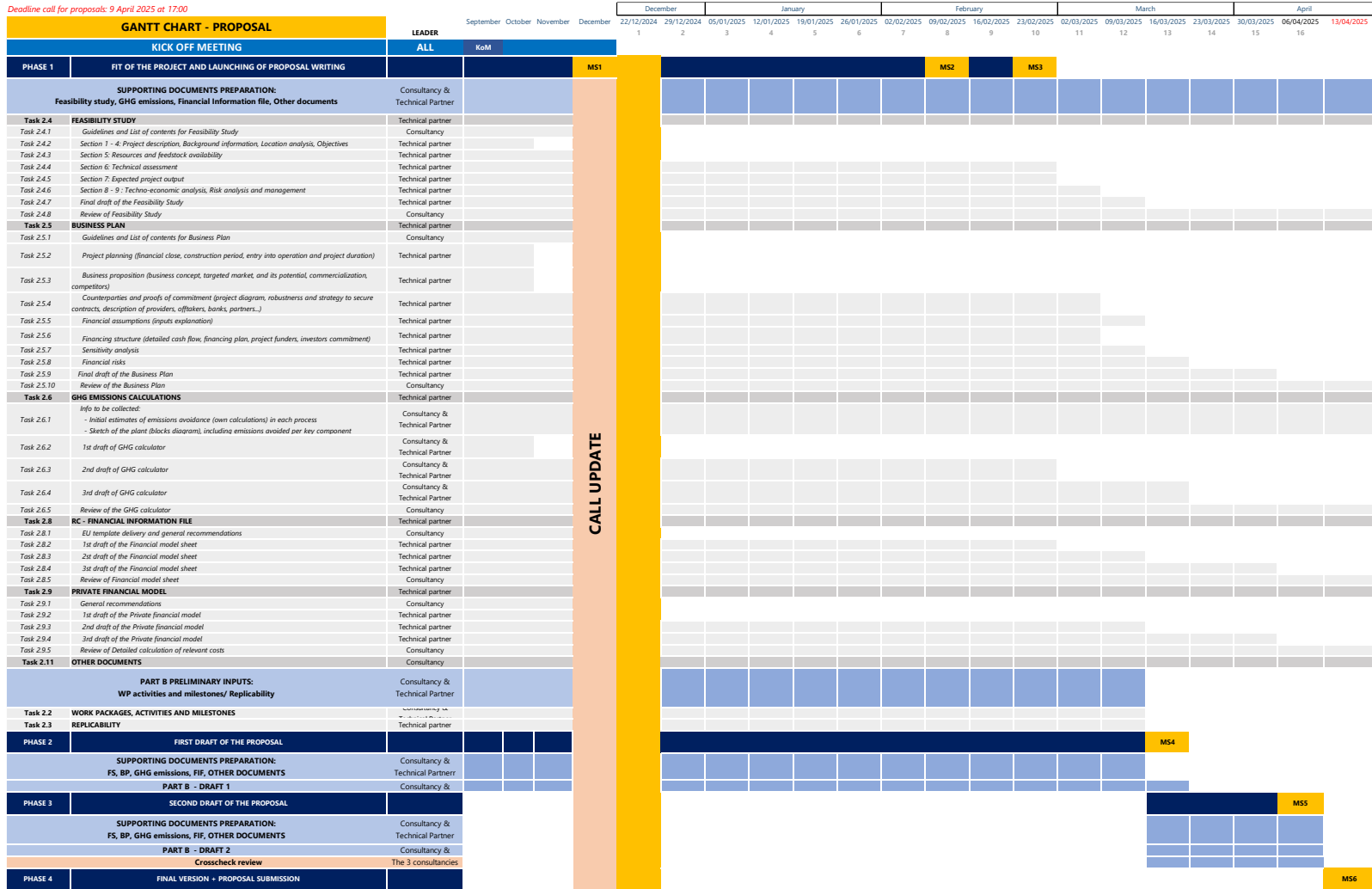


Figure 10: Proposal writing macroplanning Gantt chart.



H2IF is an EU-funded project that has received funding from the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement N. 101137734.

5.2. Content wise, two annotated templates for the Feasibility study and Business plan

Last year, CINEA directly provided both the **Feasibility Study** and **Business Plan** templates, which are available through the Funding & Tenders (F&T) portal. Therefore, there is no need to use the previously offered annotated templates included in D4.1.

- The templates' structures are generic enough to be used across sectors and product types.
- While they are not annotated, they are aligned with the requirements for **hydrogen** and **energy storage** applications.

In order to provide possibly more dedicated guidance we opted for using at best the comments we made in D4.1 in the previous annotated templates, the official CINEA templates have thus been further enriched with some comments. See both templates in the Annexes section.

6. Leveraging upon the knowledge gained by more mature, selected IF projects

The knowledge sharing report of the EC services⁷ provides valuable insights on how selected IF projects in their route to financial closure are facing challenges of various kinds: permitting, regulatory, securing finance and other technical constraints and possible mitigation strategies. The report also offers a detailed analysis of the portfolio of projects organised per domain and is a must-go route for a potential applicant.

As far as we are concerned, two specific chapters focus on ‘projects with a ‘Hydrogen component’ and projects with an ‘Energy storage component’. Future applicants to IF calls in these domains are highly recommended to get into this capitalisation work that include:

- The mapping of the number and types of projects, level of IF contribution and total CAPEX, location countries. More specifically the result of awardees of the past call (Y-1) on similar domains (or from competitors) would give valuable information for an application in preparation.
- The nature of challenges and some strategies adopted and adapted to effectively address them.
- The level of cumulative GHG emissions avoidance per type of project, and over a 10-year period (for example battery manufacturing related project, demand response initiatives, integrated energy storage flexibility solutions; renewable / low carbon hydrogen, etc.).

The information could be used to position the applicant project within the portfolio of projects being awarded by the IF instrument and much more mature.

⁷ see references [1][2][3], [1] being the most recent one released in 2024 -. Annual knowledge sharing report of the Innovation Fund –



7. Feedback loop with applicants

The procedures and templates developed here are based on the 2024 IF Calls' information and the experience of the H2IF consultants. An update process of these elements is planned according to the following sources of information:

- Any possible changes in the official IF guidelines and templates for the IF25 Call.
- Material developed by 'sister projects' dealing with similar objectives (public deliverables and tools) and exchanges with the related consortia.



8. Conclusions and inputs to ‘Innovation pipeline’

At the current stage of H2IF project development we have gathered some useful information to launch the preparation of an Innovation Fund proposal: timeline, annotated templates to guide the applicant. These elements, updated according to the feedback mentioned in the previous section, will feed the activity “Innovation pipeline” aiming at such capitalisation framework.

At that stage consultants discussed the opportunity to design a self-assessment tool for Horizon related project results wishing to apply to Innovation Fund programme. Recurrent questions shall be answered. Once synthesised, and reorganised into main units, the design of such a self-assessment tool emerges. Seven main units must be assessed to build confidence on the *ex-ante* eligibility of the concept. Each unit includes one or several questions whose answers could be assessed by a mark. The methodology to allocate a mark could be further detailed in the coming tasks of H2IF related to the ‘Innovation pipeline’.

This analysis will also avoid engaging resources to an application with low chance of success to the IF funding.



Figure 11: Framework for a self-assessment tool for Horizon type results in seven main units

9. References

- [1] European Commission, European Climate, Infrastructure and Environment Executive Agency, Prządka, A., Sales Agut, C., Bravo, B. et al., *Annual knowledge sharing report of the Innovation Fund – De-risking innovative low-carbon technologies*, Publications Office of the European Union, 2024, <https://data.europa.eu/doi/10.2926/895296>
- [2] European Commission, Directorate-General for Climate Action, *Innovation Fund progress report 2022 – Report from the Commission to the European Parliament and the Council on the implementation of the Innovation Fund in 2022*, Publications Office of the European Union, 2023, <https://data.europa.eu/doi/10.2834/542568>
- [3] European Commission, Directorate-General for Climate Action, *Innovation fund progress report – Report from the Commission to the European Parliament and the Council, August 2022*, Publications Office of the European Union, 2022, <https://data.europa.eu/doi/10.2834/58165>
- [4] [Innovation Fund portal](#)
- [5] [What is the Innovation Fund?](#)
- [6] [Innovation Fund Calls for proposals](#)
- [7] [Innovation Funds projects](#)

Annex I – Annotated template for a Business Plan

See separate document ‘BP’

Annex II – Annotated template for a Feasibility study

See separate document ‘FS’

Preliminary observations and instructions for the reader


Both templates are annotated with coloured boxes inserted in the text.

- Boxes in blue colour background include practical hints for applicants in the H2IF domains (energy storage, hydrogen).
- Boxes in green colour background refer to the application template (part B) in which some of the information must correspond. This also enables a consistency and completeness check between the two documents (BP/FS and Part B).

In addition, both templates include explanatory phrases, beyond those already provided, to further clarify the content of each section. These additions are presented in italics and blue font. It should be noted that they are only included when necessary to complement the template’s existing guidance — in many cases, the template itself already provides clear and sufficient instructions

BUSINESS PLAN

(To be filled in and uploaded in the Portal Submission System as part of the application.

 This template is recommended but not mandatory. If you do not use it, please make however sure that you submit the same level of detail and information to ensure a proper assessment. In case you consider a section not applicable, please mark it and explain why.)

PROJECT	
Project name and acronym:	[project title] — [acronym]

Link to the application template (part B): The financial maturity constitutes the section 4.2 of part B form, in which a detailed overview of the financial maturity of the project is to be provided. The current BP shall support this section. Some instructions appear in the part B template, they have been considered and re-dispatched in the current proposed annotated template.

BUSINESS PLAN
PROJECT BUSINESS PLAN
Business proposition
Product or business concept
<p><i>Describe the business model, the project value proposition compared to other solutions and how it fits with company strategy.</i></p> <p>Insert text</p> <p><i>A problem-solving approach is appreciated which implies starting with the presentation of the problem solved/ market need served by the IF project.</i></p> <p><i>Then, still driven by the demand or the market need, the applicant could focus on the description of the value proposition, and related product/services developed.</i></p> <p><i>NB: the formalisation of a value proposition dedicated to a target underlies the fact that there is a market, either existing or emerging. Providing quick features:</i></p> <ul style="list-style-type: none"> - <i>on the origin of this market, its drivers, how big it is and its dynamics</i> - <i>on established competitors</i> - <i>on what would be the type of positioning strategy that will be adopted by the company.</i>
<p>For applicants in the H2IF-related domains, please make sure to distinguish the roles of user and the customer. They may be distinct, or not. Be clear on the type of offer: product or service.</p> <p>More specifically for storage solutions an initial check could be to assess the adequacy of the storage solutions with respect to the claimed use cases. Another verification could concern the environmental impact of the components required by the solution, the security of operation and possible end-of-life drawbacks that could offset the benefits in terms of GHG avoidance potential.</p>



Targeted market and market potential

Provide a brief general market overview and targeted market potential. Outline the regulatory environment (if this is relevant) and how the project addresses current market gaps, creates new demand or new markets or expands existing ones, or creates new value for existing products or services.

Insert text

Describe first the market segmentation. A tree type visual could be used to illustrate the criteria used to map the market. Then, for each segment describe the key customers and the value the innovation will deliver compared to other solutions, as well the drivers for growth.

Once this qualitative description is provided, a central input is the estimation of the market size in terms of potential and target customers. One should detail:

- Market potential, demand/supply trends,
- competitors' overview,
- positioning of product/services with respect to competition,
- market uptake strategy

To clarify the positioning one could use a 2-entry table format to characterise the product X matrix relationship.

- In columns: products or service offer (P1, P2, S1, S2, etc.)⁸
- In rows: the market segments identified here above
- At the intersection of each cell: a characterisation of the relevance, or of the calendar of release, or any marketing feature.

A SWOT diagram or a Porter Five Forces analysis could document the strategic positioning of the offer and visualise the market entry barriers and more generally factors that could facilitate or slow down the future activities.

For applicants in the H2IF-related domains, the scope of the domain, and the market segmentation is a key element to explain in a pedagogical manner the intrinsic complexity of some energy related markets, some of them possibly not existing yet.

Commercialisation strategy and market uptake

Describe the demand for the products/services proposed, key customer segments, and market entry barriers (if any).

Insert text

Marketing strategy at wide includes several items such as the **pricing policy** (cost based or acceptance based, existence of basic/premium offers, portfolio of offer and calendar or releases), the **distribution strategy** and all aspects related to the sale force, the distribution agreements, the **marketing and promotional strategy** and budget.

For applicants in the H2IF-related domains, pricing strategy involves uncertainty. Its management shall be clearly presented.

Competitive landscape

Outline the main competitors and/or competing solutions.

⁸ P1 refers to the first product, etc.



Insert text

Financial assumptions

Explain the assumptions made on the breakdown of expected revenues, capital expenditure (CAPEX), operational expenditure (OPEX) used for the financial projections of the financial information file and your own detailed financial model. The financial projections must cover the entire lifetime of the project (mandatory);

Include a detailed justification of contingencies for CAPEX and OPEX.

Explain your assumptions on volumes and prices from potential off-takers, suppliers, and construction contractors, and make for this purpose precise references to the sections in the documents submitted in the project contract terms annex that provide the basis for these assumptions.

Complement this information with an overview table including the following information for each of the main parameters underpinning projections for revenues, CAPEX and OPEX:

- value
- unit
- justification for the value used
- reference to page of feasibility study annex or project contract terms annex.

Insert text

For applicants in the H2IF-related domains, any techno-economic model supporting the production process and its potential value will be useful to document the relevant costs and the financial model discussed below.

Where relevant, purchase agreements for electricity/heat of renewable origin, bio feedstock sourcing and supply, CO2 storage or similar must be included here.

For applicants in the H2IF-related domains, consider as much as possible the regulatory context of energy storage or hydrogen and the consideration of possible evolutions. The consideration of existing roadmaps on Hydrogen or energy storage include date providing orders of magnitude of industrial deployments.

Indeed, regulatory environment is especially suited to market projections, market and entry, and other potential barriers or blockers.

For storage, one must bear in mind that the link of policy and regulatory signals is a big part for energy storage that aims to deliver long duration services given their current infancy
Another critical point is the existence of contingencies related to the existence of infrastructure (e.g. Hydrogen transport or distribution infrastructures) to make the project viable.

What costs should be included in "Capex Inputs" sheet and as Opex under the "Fin Model Summary inputs sheet"?

Capex after entry into operation should be regarded as Maintenance Capex and will therefore be discounted.

Construction cost: All cost linked to design, engineering, procurement, construction, commissioning and testing of the project such as: Costs of employee benefits arising directly from the construction or the acquisition of the item of property, plant and equipment; Equipment Cost, Costs of site preparation; Initial delivery and handling costs; Installation and assembly costs; costs of testing whether the asset is functioning properly, after deducting the net proceeds from selling any items produced while bringing the asset to that location and condition; Certifications expenses for necessary repairs during the construction phase;



Expenses for removing hurdles on the site (however costs associated with replacement of existing technologies should be excluded); Land lease cost capitalized during construction.

Site infrastructure cost: Include Purchasing land; Expenses incurred to obtain or maintain authorization (e.g. license, filing, notarization or registration).

Development cost: All costs and expenditures incurred that are specifically required for the development activities of the project: Permitting and environmental assessment; Planning, design, engineering, start-up and testing; Legal, insurance and other advisors expenses; Staff costs linked to day-to-day development activities. Professional fees and fees for environmental permits.

Intangible assets: Include licensing of patents/intellectual property from a third party by the project developer in order to introduce innovation into Member State for demonstration¹

Examples of items which should be excluded or are not impacting the Relevant Cost Calculation: Other State Aid, notably in the form of fiscal or parafiscal measures, must be included in the financial model and may potentially impact the Relevant Costs computation, for example if they impact the projections for revenues or OPEX

Public support: As a general principle, applicants must include in their financing plan any public support to which a project has a potential right, being it project specific or equally applicable and accessible to all market participants on a market wide basis (such as a feed-in tariff or feed-in premium) in the Financial Model Summary Input sheets. Such public support will not impact the relevant cost calculation result.

Financing-related Costs: Any costs linked to the financing of the project are excluded from the Relevant Costs computation. A non-exhaustive list of such costs is the following: interest during construction, working capital needs, bank fees, legal fees, upfront fees, commitment fees, interest payments, additions to the maintenance reserve account or debt service reserve account.

Other excluded items Costs incurred before submission of the application; Terminal value; Training expenses; Advertising and marketing expenses (e.g. for introduction of new product or service); Costs linked to any corporate reorganization including establishment of new entities; Costs associated with any stranded assets (e.g. for the replacement of existing technologies or assets); Royalties paid to project shareholders VAT, taxes, etc.

For applicants in the H2IF-related domains, the volumes of the physical flows have to be consistent with the plant / site capacity and realistic with regard to the market expectations. All technical, capacity, cost, and revenues assumptions have to be aligned.

Link to the application template (part B):

In section 4.2 a dedicated section ‘Detailed cash flow projections and project profitability’ shall be documented with the following instructions:

“Fill in the financial model summary sheet (part of the financial information file) with the output of your financial model including a summary overview of the cash flow projections from revenues and costs, down to free cash flows (including cash from operating, investing and financing activities), the key elements of the P&L (revenues, costs, down to net income) and balance sheet.

Provide your detailed financial model sheet with detailed information on model assumptions and calculations to derive the financial projections (mandatory). The projections should be consistent with the detailed calculation of relevant costs in the relevant cost calculator to be submitted as part of the financial information file.

Describe the project’s business viability measured by the project’s Net Present Value (NPV) and Internal Rate of Return (IRR) before and after the requested Innovation Fund support, estimated over the expected lifetime of



the project. Explain the WACC used for the analysis with details of the underlying assumptions and justify why the assumed debt-to-equity ratio expected for the project is achievable.

Estimate and explain the sensitivity of the cash flows and project profitability (for example NPV or IRR) to the key risks identified which could impact the financial viability of the project.”

Project counterparties and strategy to secure contracts

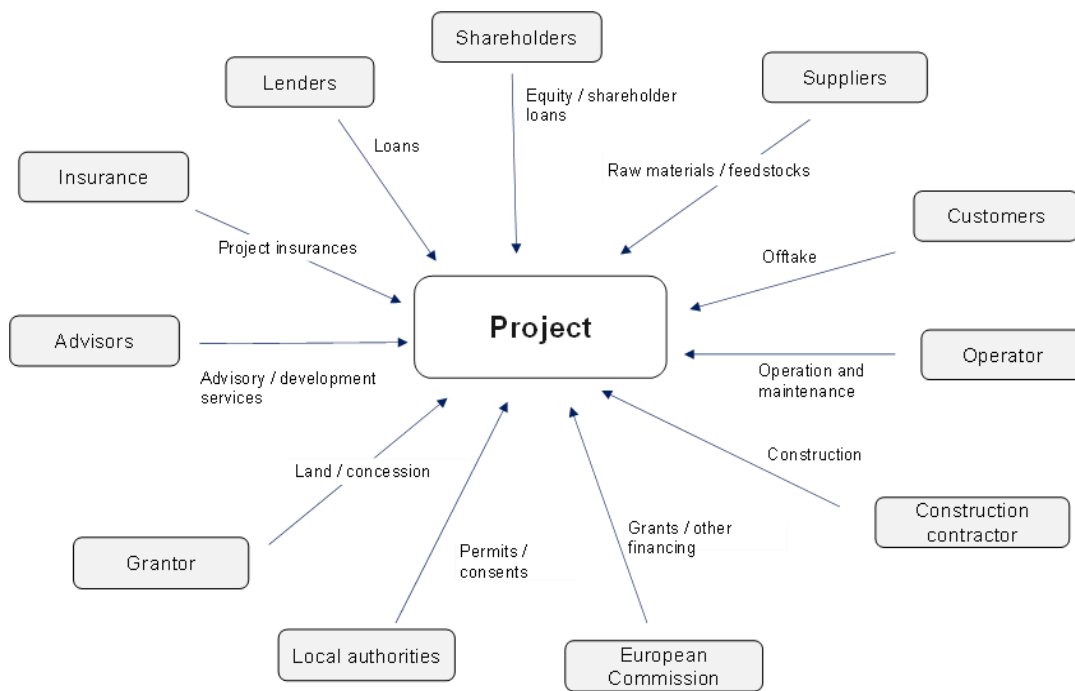
Project diagram

Insert a project diagram showing the relationship between the different project parties and the project, including entities involved in the project, sponsors, shareholders, lenders, off-takers, suppliers, constructions contractors and other contractors, advisors, and insurers. (The example below is an illustrative example and should be deleted when inserting the project specific diagram.)

In case a special purpose vehicle is created for the implementation of the project, please specify in the diagram.

Specify as much as possible the legal and contractual relationships between the main project stakeholders and contractual parties, also including the coordinator and participants mentioned in Application Form Part A.

Insert text



Link to the application template (part B): See the example provided in the part B template, section 4.3 (operational maturity)

We suggest using the very same diagram to document this section (or simply to refer to it) in order to focus more in-depth to the description of the applicant(s) specifically and referring to other similar activities carried out by the applicant(s) in the past.

It should be noted that in part B template there is a dedicated section in 4.3 to the “Project management team and project organisation”, the latter complementing the project diagram.



For applicants in the H2IF-related domains, please insist on the track record of the management team (of all applicants) in the sector and on references in the domain.

Description of project counterparties

Describe who they are and their role/contribution to the project.

Explain the technical, financial and commercial standing of contractors, suppliers and off-takers, including their track-record and overview of key financials as well as credit rating (where available).

Insert text

Robustness and strategy to secure contracts

Set out the main terms of indicative supply, construction and off-take agreements (where available), or terms of memoranda of understanding (if any).

Include the main terms of purchase agreements for electricity/heat, feedstock sourcing and supply, CO2 storage or similar, where relevant.

Explain the strategy for securing supply, construction and off-take contracts and other key commercial contracts for the operation phase and its state of development.

Insert text

DETAILED CASH FLOW PROJECTIONS AND PROJECT PROFITABILITY

Detailed cash flow projections

Describe the cash flow projections of the project presented in the output sheets of the financial information file.

Insert text

Expected project profitability

Explain the WACC used for the analysis with details of the underlying assumptions and justify why the assumed debt-to-equity ratio expected for the project is achievable.

Describe the project's business viability measured by the project's net present value (NPV) and internal rate of return (IRR) before and after the requested Innovation Fund support, estimated over the expected lifetime of the project.

Insert text

Financial indicator: WACC (with the details of calculations) and value creation (comparison WACC with IRR), IRR and NPV before and after the grant.

Three outputs are expected: Profit and Loss account, Cash flow statement with uses and sources, details of financing sources with key terms, and ideally balance sheet

These tables target two populations:



<ul style="list-style-type: none"> - <i>Potential lenders: will your business generate enough cash flow to pay back the loan?</i> - <i>Potential investors: how much return can they get out of this investment?</i>
<p>For applicants in the H2IF-related domains, the internal WACC used by companies will probably be different from the WACC recommended by the IF application</p>
<p>Sensitivity analysis</p>
<p><i>Estimate and explain the sensitivity of the cash flows and project profitability (for example NPV or IRR) to the key risks identified which could impact the financial viability of the project.</i></p>
<p>Insert text</p>
<p>FINANCING PLAN</p>
<p>Funding sources and uses</p>
<p><i>Describe the funding sources and uses of the project and how they reconcile with the sources and uses table presented in the summary chart sheet of the financial information file.</i></p> <p><i>Indicate the type, amount and provider of each source of funding (equity/shareholders loan, debt, expected public subsidies).</i></p> <p><i>Present and explain the financing structure of the project:</i></p> <ul style="list-style-type: none"> - <i><u>Equity</u>: Describe how the equity will be injected (if applicable, list any intermediary legal entities with their country of residence).</i> - <i><u>Debt (if any)</u>: if the project is planning to raise external debt, explain whether the debt will be raised at the level of the corporate entity or of the project, and the level of recourse to the shareholders. Ensure that the key terms expected are justified by the project risks, projected cash flows and in line with market standards (notably but not limited to tenor, margin, debt to equity ratio or DSCR). If possible, provide letters from banks and/or debt investors to support expected terms</i> - <i><u>Allocation of Innovation Fund grant</u>: Explain how the expected allocation of the lump-sum breakdown for the grant will be proportional to the activities and efforts related to the relevant work-packages and project milestones explained in Application Form Part B.</i>
<p>Insert text</p>
<p>PROJECT FUNDERS AND INVESTORS COMMITMENT</p>
<p>Description of financing parties and strategy to secure contracts</p>
<p>Description of financing parties</p> <p><i>Describe each of the funding providers and their respective amount of funding contribution to the project.</i></p> <p><i>Describe the financial standing of the project shareholders. Refer to the project shareholders' financial statements annex for the cash flow statements, profit and loss account and balance sheet (consolidated or social accounts) and the entity carrying the project (if it has existed) for the last three years.</i></p>
<p>Insert text</p>



Terms of support and strategy to secure financing agreements

Describe the status and degree of advancement in securing funding sources, including equity, debt and funding support from Member States or other types of public support.

Describe the nature and conditions of support provided from each project funder and how the funds will be injected into the legal entity owning the project and the ownership structure.

Include a reference to the documents submitted in the project support documents annex to underpin the main assumptions used in the financing plan with indicative terms and conditions from memoranda of understanding or letters of intent (where available). In addition, refer to the letters of commitment (if any) or letters of support from the project shareholders signed by the board of directors to confirm the credibility of support and commitment of project funders to the project.

For all projects, but especially for projects with low profitability and/or exposed to high financial risks, provide credible evidence from the project shareholders that they will support the project to reach operation and cover potential shortfalls during operations.

Justify the planned date set for financial close, including a description of milestones that have already been reached, as well as the outstanding tasks. Provide all necessary information to demonstrate the project’s ability to reach financial close within the time-limit set out in the Call document or faster. Detail the main conditions to be fulfilled before final investment decision can be reached and explain how the expected project financing sources will be made available.

Insert text

RISK ANALYSIS AND MANAGEMENT

Business and financial risks and mitigation measures

Risks related to business plan

Describe the main risk categories related to the business plan which could impact the business viability of the project by filling in the table below.

Risk No	Risk type	Risk description	Risk likelihood	Impact if risk materialises (low/medium/high)	Risk ownership (applicable in case of multiple beneficiaries in the project)	Proposed mitigation measures

Risks related to financing plan

Describe the main risk categories related to the financing plan which could impact the financial viability of the project by filling the table below and describe any contingency funding sources that the project can rely on to reach completion as planned.



The applicant should detail here (and in the section above) all the business and financial risks of the project (unpayments, delays, missing provider, missing resources, commitment not accomplished that can involve penalties, etc). The point is not to show that the project is risk-less, but that a thorough assessment has been performed and all risks have been taken into account.

For each of the identified risks, the applicant must complete the following table:

Risk No	Risk type	Risk description	Risk likelihood	Impact if risk materialises (low/medium/high)	Risk ownership (applicable in case of multiple beneficiaries in the project)	Proposed mitigation measures

Risk heat map

Include a risk heat map to visually summarise the likelihood and impact of the main risks.

Insert text


HISTORY OF CHANGES

VERSION	PUBLICATION DATE	CHANGE
1.0	15.11.2024	Initial version



FEASIBILITY STUDY


(To be uploaded in the Portal Submission System as part of the application)

 *This template is recommended but not mandatory. If you do not use it, please make sure that you submit at least the same level of detail and information to ensure a proper assessment. In case you consider a section not applicable, please mark it and explain why.*

PROJECT	
Project name and acronym:	[project title] — [acronym]

FEASIBILITY STUDY	
Project description	
<p><i>Provide a high-level description of the project (e.g. technologies, products and/or services). It is important that this description captures the most important aspects of the technologies to be used, products and/or services that you are considering, as well as how they may benefit customers and the project itself.</i></p> <p><i>Please include the relevant graphical representation of the project as block flow diagram(s).</i></p>	
Insert text	
<p>For applicants in the H2IF-related domains, the issue of social acceptance or of any NIMBY aspect of local population due to discomfort, industrial or environmental hazards and other inconveniences need to be particularly addressed. All proof for obtaining agreements for the plant site and authorisations should be presented.</p>	
Background information (existing situation)	
<p><i>Describe the existing production line(s) or equipment or product or service (if applicable).</i></p> <p><i>For maritime sector projects that address retrofitting/refurbishing of (in-service) vessels, the information should include the description of the vessels (n/a for Auction Grants calls).</i></p>	
Insert text <p><i>The SoA shall include technological aspects of the solution. It has also to consider commercial aspects such as the development of a new market.</i></p> <p><i>Categories of the SoA have to be designed according to the type of technology and the industrial sector and value chains the solution might impact. An illustration of the architecture of a SoA is proposed below for a case in ‘Hydrogen storage’.</i></p> <p><i>Table 3: Illustrative organisation of data collection to build a SoA for a particular case</i></p>	
<p>State-of-the-art categories</p>	<p>The distinctive value of the proposed solution in comparison to the SoA⁹</p>

⁹ Explain how it differs from other current/recent projects (size, location, etc.)

 H2IF is an EU-funded project that has received funding from the European Union’s Horizon Europe Research and Innovation Programme under Grant Agreement N. 101137734.

Hydrogen storage	<ul style="list-style-type: none"> - Overview of underground reservoir solutions for industrial hydrogen storage (salt caverns, depleted oil and gas caverns or aquifers). - Overview of hydrogen storage technologies other than caverns. 	
Salt caverns	<ul style="list-style-type: none"> - Inventory of salt caverns in operation in 2024 (Europe, outside Europe) - Status of salt caverns under construction for commercial operation in 2028 - R&D or demonstration projects recently completed or underway (Life, Horizon, other instruments or not publicly funded: description, objectives, sites, TRL) - the applicant position in this state of the art 	
H2 transport infrastructures	<ul style="list-style-type: none"> - The prospect of hydrogen transport backbone networks (in Europe, in Germany near the target site) 	
Regional impact	<ul style="list-style-type: none"> Other initiatives covering the needs in the regions impacted by the solution 	<ul style="list-style-type: none"> Analysis of regional impact of the solution to local industry and economy

Location analysis and strategic approach

Include details on:

- Site location and plans, as well as logistics and links to other projects (if applicable).
For maritime and aviation sector projects, the information should include details on the operational area, i.e.: itineraries (route and air/port calls), ship/plane building location and servicing network (e.g. particularly for fuel supply) (n/a for Auction Grants calls)
- Stakeholders.

Clearly explain:

- The regulatory requirements (including permits and certifications) and the permitting strategy (if applicable).
- The rights and licenses (IPR relevance). Outline the rules and principles for the ownership, protection, and exploitation of IP created before (background) and during (foreground) the project, including:
 - licensing of pre-existing know-how (background)
 - ownership of knowledge gained (foreground)
 - confidentiality for dissemination

Overall, outline a structured approach to handle IPR, ensuring fair collaboration while protecting the partners' interests and encouraging the dissemination and commercial use of the project's results.

- The degree of public acceptance of the technology and project and how this will be ensured. Include notes on the environmental impacts expected throughout the project life-cycle and when the relevant environmental studies, assessments and modelling (if applicable) will take place.

Insert text

Objectives



Describe the project objectives ensuring they are specific, measurable, achievable, relevant, and time-bound (SMART) and the clear technical and operational requirements (including scope boundaries) associated with the achievement of these objectives.

Insert text

For applicants in the H2IF-related domains, the framework of the strategic objectives of the EU on the green and digital transitions of the economy, industry and society, and the climate neutrality in Europe by 2050 shall be reminded to introduce the project objectives and its contribution.

Applications dealing with major energy infrastructures that might be disruptive in the sector need to provide a strategic analysis on how they will be game changer, possibly in conjunction with other energy infrastructures (generation, transport, storage or distribution).

Resources and feedstock availability

Provide comprehensive supply and value chain analyses.

The supply chain analysis should demonstrate the steps (to be) taken to ensure the availability and sustainability of required inputs and it should include:

- Market, suppliers and pricing structure analysis.
- Procurement strategy.
- Logistics and distribution.
- Technical resources.

The value chain analysis should demonstrate how the project adds value to both the applicant(s), the end-customer and, possibly, the economy at large and should include:

- Overview of the primary and support activities with identification of value-creating ones.
- Overview of costs drivers associated to the activities.
- Overview of any specific commercial (targeted market) aspects including market drivers and any other relevant considerations (e.g. waste value, carbon value).

Insert text

Technical assessment

Provide a comprehensive analysis of the technology readiness.

Present and explain:

- the process(es) and the plant(s):
 - Design philosophy and alignment with the basic engineering principles.
 - Main systems and long lead items (including utilities and infrastructure, instrumentation and process control system).
 - Assumptions used for operational characteristics.
 - How changes in scale or changes in circumstances compared to previous testing/projects have been taken into account in the design of the project.
 - Reuse suitability of the existing and envisaged assets in the project site (if applicable).
 - Construction approach and plan.
- The technology:
 - How the proposed technology has performed if it has already been tested at the same or at a lower technology readiness level.
 - Technological advancements including innovative elements and benchmarking the concept against the state-of-the-art.
 - Other benefits accruing from the implementation of the proposed technology (e.g. resource-efficiency).
 - Element and system-wise technology readiness level (including before and after the project).



- *Technology providers (if applicable).*
- *Alternative scenarios/options analysis (if applicable).*
- *Scalability and replicability potential and the strategy to scale up (if applicable).*

Include here:

- *process flow diagram(s).*
- *schematic (preliminary) layout(s) and design(s) (including capacities).*
- *mass and energy balances (including before and after the project, if applicable).*

Insert text

For applicants in H2 or energy storage, applicants could also use multi-year technology and industrial roadmaps available in each domain to position the performance ambitions of their innovation (e.g. the MAWP for Hydrogen for which applications shall consider the KPI set in this plan).

Applications in energy storage shall present the added value with regards to other technologies including the techno-economic and environmental characteristics: e.g., time of charge, discharge, efficiency, cycling and ageing, energy density, electro-chemicals risks, capex and opex, considering mature or technologies in development

For applicants in the H2IF-related domain, the issue of supply chain for materials presenting scarcity risks or geopolitical uncertainty needs to be carefully addressed.

Expected project output

Clearly present and explain:

- *Expected project output in terms of volume of the product(s). Include information on:*
 - *quality of the final product(s)*
 - *turn down, availability and reliability*
 - *maintenance.*
- *Technical feasibility of achieving the stated output.*
- *Possible technical challenges and the strategy to address them.*
- *Assumptions and figures (including key consumption factors) used for the estimation of the GHG emissions avoidance (n/a for Auction Grants calls).*

Insert text

Techno-economic analysis

Include a tabular summary of the cost estimates (ensure consistency with the figures presented in the business plan annex).

Clearly present and explain:

- *Techno-economic (element and system-wise) performance and impacts.*
- *CAPEX and OPEX estimation.*

Include the approach used in the cost estimate and cost estimation class according to the [AACE](#).

Include a comparison of possible technical alternatives with regard to the expected costs of production and GHG emission for relevant scenarios (if applicable).

- *Environmental and socio-economic impacts (including health and safety, emissions to air, water and soil).*

Insert text



For applicants in the H2IF-related domain, major uncertainties could remain for projections of mid to long term energy prices, to the regulation of electricity markets opening or impeding possible sources of revenues (grid balancing, feed in tariffs, etc.) but also all incentivisation measures for decarbonisation. Scenario approach with pessimistic or optimistic assumptions could be used to assess the ‘commercial risk’ formalised in the business plan and synthesised in this techno economic assessment.

Risk analysis and management

Technical risks and mitigation measures

Describe the main technical risk that could impact the technical feasibility of the project and fill in the table below.

Risk number	Risk type (technical/operational)	Risk description	Risk likelihood	Impact if risk materialises (low/medium/high)	Risk ownership (applicable in case of multiple beneficiaries in the project)	Proposed mitigation measures

For applicants in the H2IF-related domain, major risk relates to regulation on storage (BESS, thermal, hydrogen) or for supporting new emerging technologies.

Operational risks and mitigation measures

Describe the main operational risks associated with the construction (e.g. timing), project design, operation (e.g. weather conditions) and decommissioning, relevant to the project technology, category and sector and fill in the table below.

Risk number	Risk type (technical/operational)	Risk description	Risk likelihood	Impact if risk materialises (low/medium/high)	Risk ownership (applicable in case of multiple beneficiaries in the project)	Proposed mitigation measures

Risk heat map

Include a risk heat map to visually summarise the likelihood and impact of the main risks.

Insert text



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