

Best Practice (2)

Project Maturity

- Technical Maturity
- Financial Maturity
- Operational Maturity

Scalability

Cost efficiency

Best practice

Project maturity

Uwe LUTZEN, CINEA Head of Sector, Innovation Fund Unit

Best Practice - Project maturity

Project maturity is encompassing 3 sub-criteria: technical, financial and operational maturity

1

Define a project timeline

- Make sure it is comprehensive, realistic and consistent with your project's technical and financial elements

2

Identify technical, financial and operational risks based on a comprehensive risk assessment

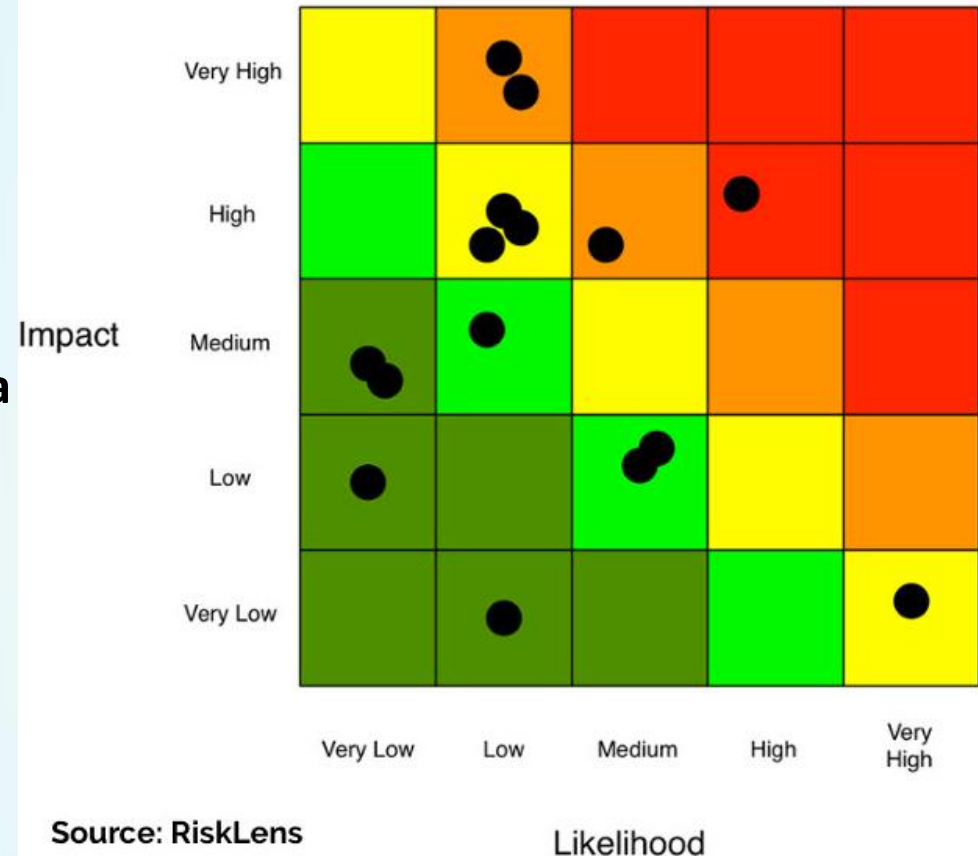
- Ensure that your mitigation strategy is convincing across the major technical, financial and operational risks

3

Provide contractual evidence

- E.g., letters of support, MoUs, indicative terms of agreement for off-take agreements, key suppliers, EPC parties. **Evidenced commitment of project funders is key!**

Sample Risk Heat Map



Best practice

Technical maturity



How mature is your technology: Describe the actual readiness level of your technology/

Resubmissions are welcome, particularly if the readiness of your technology has improved

1 Provide a thorough analysis and technical description

- Be concise and focus on key facts and figures

2 Justify and provide evidence for the claimed expected output, e.g.:








- Evidence and performance data from previous stage/site/pilot
- Third party confirmations, quotes from vendors or suppliers, signed letters of agreements or head o terms

3 Analysis of technical risks and their mitigation is required

- Use due diligence report when available

Ensure consistency between project implementation plan, feasibility study, business plan and GHG calculations

Technical maturity – Industrial Waste Heat Recovery

Checklist	Justify evidence with demonstrated TRL 	Identified technical risks and proposed mitigation measures 	Ensure consistency among the documents 
Examples	<p>Adequately estimated TRL using a combination of mature technologies (7 -> 9).</p> <p>Credible performance data and assumptions presented as evidence of successful pilot testing.</p> <p>Feasibility Study provides a detailed overview of similar previous projects and their results.</p> <p>Assumptions for operational characteristics and KPIs suitably determined and substantiated.</p>	<p>Key critical risks identified and assessed, with likelihood of occurrence and severity.</p> <p>Working fluid degradation, leakage of refrigerant and failure to reach the expected Coefficient of Performance.</p> <p>Mitigation measures are credible, effective and convincing.</p> <p>E.g. credible potential substitutes for the working fluid were identified.</p>	<p> Feasibility Study</p> <p> Business Plan</p> <p> Implementation Plan</p> <p> GHG calculator</p>

Technical maturity – Other Energy Storage/Technology for Power to Methane

Checklist	Justify evidence with demonstrated TRL 	Identified technical risks and proposed mitigation measures 	Ensure consistency among the documents 
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Examples

TRL not credibly defined and sufficient technical maturity not demonstrated for the main technology (AEM) – **unconvincing information on pilot testing**

Characteristics of the main process and its integration with the plant are insufficiently defined.

Basic engineering principles were not demonstrated, as **discrepancies in heat and mass balance between documents exist.**

Key technical risks, their likelihood and severity, are **not sufficiently elaborated.**



E.g. individual technologies in the relevant sub-section of the plant (including AEM). **Risks assessed by a single dimension rating.**

Presented mitigation measures were broadly addressed, thus **not sufficiently elaborated.**



Feasibility Study



Business Plan



Implementation Plan



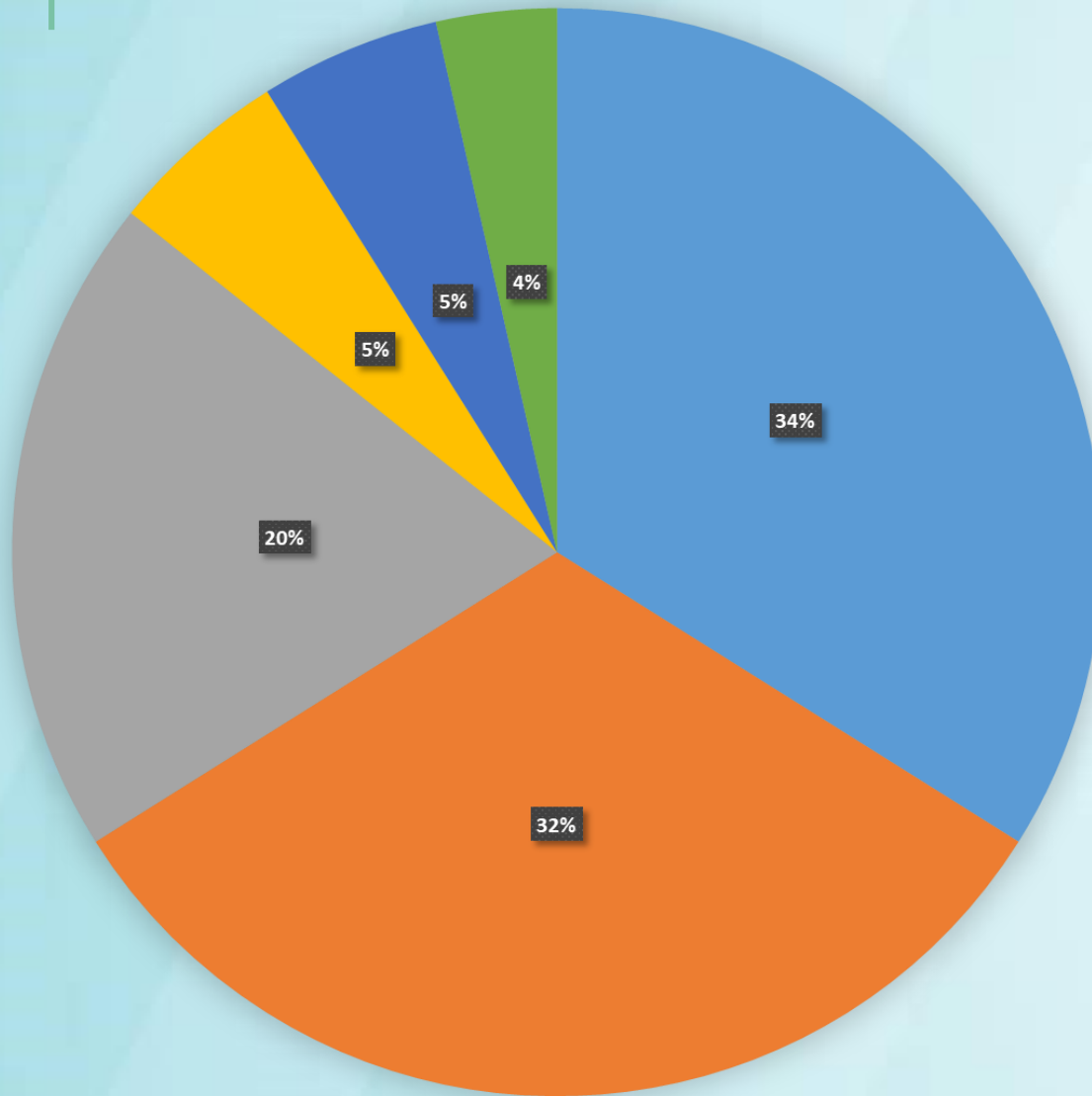
GHG calculator

Best practice

Financial maturity

Quentin NERINCX, CINEA Financial Engineer

Most frequent Significant Weaknesses



- The business plan is not credible + assumptions are not substantiated nor credible
- The Financing plan is not credible nor substantiated
- The CAPEX not credible nor substantiated or inconsistent
- The project is not profitable + the financing plan is not credible
- There are inconsistencies between RC - BP - FMSS - Detailed Business Model
- The business and financial risks and their mitigations are not identified nor substantiated

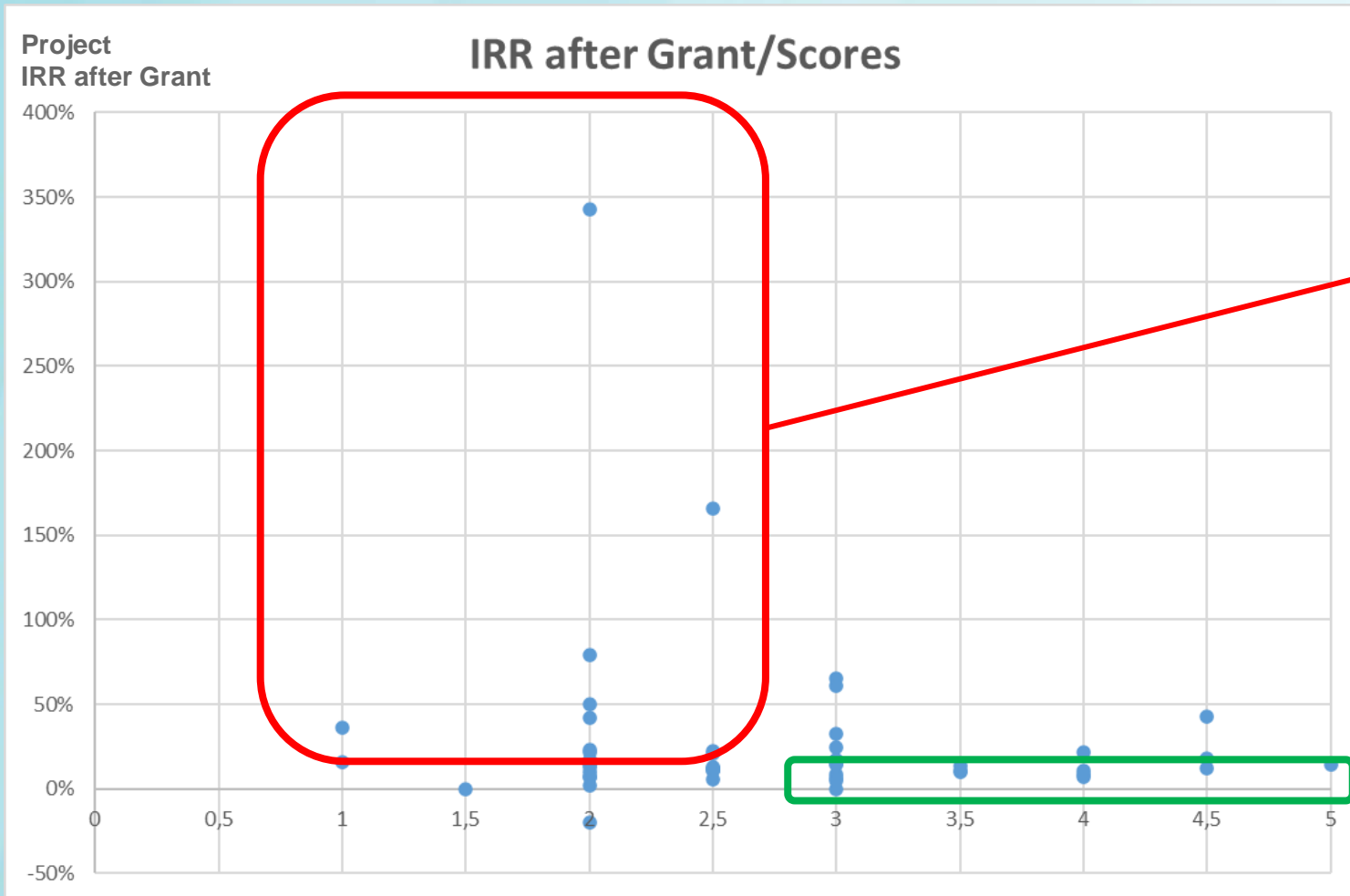
Credibility of the Business Plan

- Make sure that the financial projections are coherent with the assumptions detailed in the business plan and used in the other application documents
- Fully describe and substantiate the main revenues and cost assumptions: provide and justify volumes, prices assumed, write a clear narrative for your assumptions and make sure they are coherent with your thorough market assessment and technical feasibility assessment
- Provide a clear and full breakdown of CAPEX with references and justifications
- Make sure that the scope of activities of your business model and business plan match the scope of the project you submit, that the assets and costs of the project are borne by the applicant and grant beneficiaries
- Justify the cost contingencies assumed and ensure that they are in line with market practice in your sector
- Focus on quality instead of quantity of information

Credibility of the Financing Plan

- Highlight the financing structure indicating whether the debt will be raised at the level of the corporate entity or of the project, and the level of recourse to the project shareholders
- If the project is planning to raise external debt, justify the key terms assumed, expected cash flows and that this debt level and repayment profile is in line with market standards. If possible, provide letters from banks/debt investors to support these assumptions
- **If project has low profitability and/or subject to high volatility of cash flows, we expect **strong evidence of commitment from sponsors.****

Profitability is not the whole story



Profitable proposals could be penalized if their business and/or financing plans lack credibility

Proposals with low returns can still meet scoring thresholds in particular if the funders provide **strong evidence that they are committed to fund the project**

Profitability is only one element considered in the evaluation of financial maturity

Avoid inconsistencies and provide supporting evidence

Best Practice :

Use your own Detailed Financial Model to fill in the Financial Information File

- Provide contractual evidence (e.g., letters of support, MoUs, indicative terms of agreement) for off-take agreements, key suppliers, construction/EPC parties
- Make sure that the grant disbursement schedule is in line with the call text guidelines
- Ensure that assumptions used for WACC are adequately reflecting the project risks and **refer to dedicated section on WACC assumptions in the guidance on relevant cost methodology**
- Provide a detailed financial model covering the entire project lifetime and consistent with the project milestones



Item	Unit	EUR/t	2023	2024
Volumes				
Baseline				
Feedstock	kt		17	50
Product - Light	kt		9	26
Product - Heavy	kt		4	14
With Project 1				
Feedstock	kt		17	62
Product - Light	kt		9	32
Product - Heavy	kt		4	14

[PROJECT] - Model inputs				
Year		2023	2024	
Period Start		01-01-2023	01-01-2024	
Period End		31-12-2023	31-12-2024	
Profit & loss				
Revenues				
(1) Total revenues from products and other revenues	k EUR			
(2) Total revenues from products	k EUR			
[Product/Service 1]				
Price	[Unit]			
Volume	[Unit]			
[Product/Service 2]				
Price	[Unit]			
Volume	[Unit]			

Provide supporting evidence : Example

Macroeconomic assumptions		2022	2023	2024
Inflation	%	19.00%	9.20%	3.50%
GDP growth	%	4.50%	2.00%	3.00%
Increase in exports	%	4.80%	5.00%	4.40%
Growth rate of gross average earnings	%	15.80%	7.10%	7.00%
Corporate tax rate	%	9.00%	9.00%	9.00%
Employer's contributions	%	13.00%	13.00%	13.00%
Risk-free forward return	%	0.27%	1.10%	1.57%
Unlevered industrial beta	—	0.75	0.75	0.75
Market risk premium	%	6.00%	6.00%	6.00%
Country risk premium	%	1.85%	1.85%	1.85%
Innovation risk premium	%	3.00%	3.00%	3.00%

For EACH of the assumption used, provide the sources and the justification:

- If it is publicly available – the website reference
- If it is NOT publicly available - the detailed data as annex of the Business Plan

The justifications provided have to be accessible, verifiable and reproducible.

Identify the risks, mitigate them and clarify the scope

Example 1 : Carbon capture and storage (CCS)

If the carbon storage is outside the scope of the project, ensure that you do have enough strong indication that CO2 transport and storage infrastructure will be available and related contracts secured to ensure that your project can mitigate these risks

Example 2 : Waste-to-power for production of hydrogen or chemicals

If the feedstock is externally sourced, ensure that you have Letters of intent (LoI's) from potential suppliers and provide a detailed overview of the feedstock availability in the project area. Take the potential cannibalisation effect into account.

The 7 golden rules of FM

Clearly outline project scope, legal structure (*) and potential interdependencies with other projects

Identify & provide effective mitigation measures for key business risks

Ensure your business plan is fully funded and provide evidence of funding commitment

Substantiate and justify your business assumptions



**Financial
Maturity**

Be consistent and follow our guidance on how to calculate your project WACC in line with your project risks

Give evidence of preliminary contract agreements with your main suppliers, construction contractors and offtake parties

Assess market, competitive landscape and commercialisation of your technology

() if project is set of as a consortium, outline the main responsibilities and working arrangements*

Best practice

Operational maturity

María ALFAYATE, CINEA Deputy Head of Unit Innovation Fund

Operational Maturity – key points

Objective: assess the prospects of the project for its successful deployment

Project implementation plan (covering all project milestones & deliverables)

Permits, Rights, Licences and Regulatory procedures)

Ensuring public acceptance of the project

Project management team and project organisation

Operational risks and proposed mitigation measures

- **Application form, Part B, sections:**
 - 3.3 - Operational maturity
 - 3.4 - Risks and mitigation measures
 - 3.3 - Project Diagram
 - 6.1 - Work Plan
 - 6.2 – Work Packages, activities, resources and timing
 - Timetable
 - Participant information document
- Any existing due diligence report (optional)

Operational Maturity

Follow the guidance provided in the Application form, section 3.3

Credibility and level of detail of project implementation plan covering all project milestones & related deliverables

Guiding principle / key questions to reply:

- Project **milestones** must include at least financial close, entry into operation and annual reporting after the entry into operation (guidance provided in the call text and application form).
- Provide **timeline** from signature of the grant up to the end of the operation period; **ensure consistency** with timetable provided as annex
- **key aspects**: strategy to reach milestones of financial close and entry into operation; ensure timing of planned activities during plant construction; regular operation of the technology during operation period
- implementation planning **consistent** with work packages, milestones and deliverables described in **section 6**.

Project implementation plan

Describe the implementation planning of the project and key milestones, deliverables and work plan for project development, construction and roll out, and envisaged permitting procedures.

Provide the timeline which must cover the period of the project implementation starting from the signature of the grant up to the end of the monitoring and reporting period and include inter alia the status of project development, the steps concluded so far (e.g. FEED study, initial permits, etc.), the planned date for the final investment decision, start of construction, commissioning and testing, entry into operation.

The timeline should be illustrated in the Gantt chart required in section 6.2.

Provide information on the following aspects:

- strategy to reach the milestones of financial close and entry into operation as well as the intermediate milestones
- planned timing of project activities and milestones and how it ensures meeting the project milestones (e.g. sufficient time reserve for procurement and delivery of major capital components, commissioning and appropriate ramp-up period of reduced output in the initial operation of the project)
- strategy for regular operation of the proposed technology during the monitoring and reporting period (e.g. maintenance, down times for revisions, operational capacities, quality assurance/quality control)

The implementation planning must be consistent with the work packages, milestones and deliverables described in section 6.2, as well the project implementation plan.

Applicants are expected to implement the construction works without delay and complete the construction of the project within a reasonable timeframe relative to market standards.

Insert text and refer to relevant sections of the supporting documents

Operational Maturity

Follow the guidance provided in the Application form, section 3.3

State of play and credibility of the plan for obtaining required permits, IPR or licenses and other regulatory procedures

Permits, rights, licences and regulatory procedures

Describe in detail the regulatory framework impacting the project, any intellectual property rights or licence and other relevant regulatory procedures, relevant permitting processes needed (including permits related to environmental impacts), permits obtained and still needed and the plan for obtaining them.

Include a timeline indicating the relevant permit application dates, expected reception dates and measures planned to ensure timely granting.

Insert text and refer to relevant sections of the supporting documents

Guiding principle / key questions to reply:

- Key aspects to be covered: detailed analysis of the regulatory framework; any intellectual property rights or licence; other relevant regulatory procedures; relevant permitting processes needed (including permits related to environmental aspects);
- State of play: description of permits already obtained and still needed and the plan for obtaining them, including timeline indicating the relevant permit application dates, expected reception dates and measures planned to ensure timely granting.

Soundness of the public acceptance strategy

Public acceptance

Describe all environmental impacts expected throughout the project life-cycle (from construction to operation to decommissioning), and the mitigation measures. Explain when the environmental studies, assessments and modelling will take place.

Explain the degree of public acceptance of the technology and the project.

Explain how public acceptance will be ensured.

Insert text and refer to relevant sections of the supporting documents

Guiding principle / key questions to reply:

- Detailed description of all environmental impacts expected throughout the whole project life-cycle (from construction to operation to decommissioning), and associated mitigation measures;
- Degree of public acceptance of the technology and the project.
- Clear and specific strategy on how public acceptance will be ensured (please do not limit to generic explanations of the issue).

Operational Maturity

Follow the guidance provided in the Application form, section 3.3

Relevance & track record of project management/team and soundness of the project organization

Guiding principle / key questions to reply:

- Project management team, e.g.: key qualifications and track record; sufficient coverage of all necessary skills; provide justifications on the need for additional outside resources
- Project organisation, e.g. project management structure; governance, responsibilities and decision-making mechanisms and processes within the consortium; quality management, health and safety
- Provide a project diagram visualising the involved actors and organisation of the project

Project management team and project organisation

Describe the project management team and the project organisation, including:

Project management team:

- project team, including key qualifications and track records of the staff responsible for project implementation (see also Participant information)
- ability to operate without interruption if a key individual leaves
- sufficient coverage of all required skills (such as technical expertise, technology commercialisation, business management, financial management and environmental management)
- need for additional outside resources.

Project organisation:

- project management structure;
- governance, responsibilities and decision-making
- evidence that the applicant's management and s
- quality management and health and safety practice.

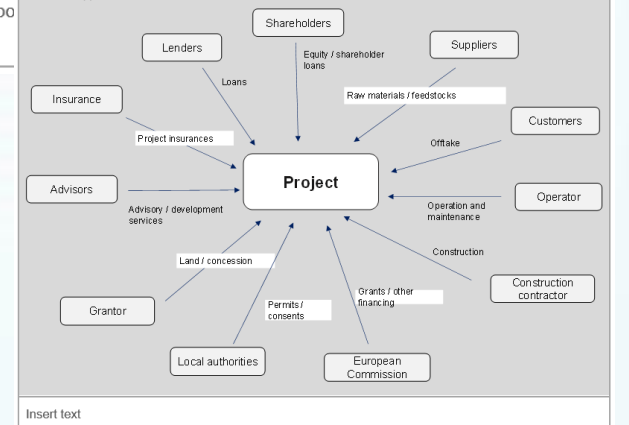
Please make reference to the project diagram provided below

Insert text and refer to relevant sections of the support

Project diagram

Please insert a project diagram (the example below is only an illustrative example and should be deleted when inserting the project specific diagram).

- A special purpose vehicle may be created for the implementation of the project or not (please specify in diagram).
- The parties mentioned are for illustration purposes only, please adapt the diagram and the parties to your specific project.
- Please 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.



Follow the guidance provided in the Application form, section 3.4

Project implementation risks and credibility of proposed mitigation measures

Guiding principle / key questions to reply:

- Describe key project implementation risks (e.g. related to construction, project design, operation & decommissioning)
- Propose convincing risk mitigation measures and explain in detail why they are suitable
- Summarise the identified risks in the risk matrix in section 3.4 of the application form

Operational risks and proposed mitigation measures

Detailed description of the project's operational risks and the proposed risk mitigation measures. Include all known risks associated with construction, project design, operation and decommissioning, relevant to the project technology, category and sector.

Explain how risks (including timing, weather conditions, commissioning conditions, unexpected or undesired events) are taken into account in the project planning and strategy and the proposed mitigation measures.

Description of measures proposed to handle any potential forced outages (e.g. power plant, capture or separation plant, compression plant, transportation, energy or CO₂ storage site) and operational interdependencies of all parts along the project value chain.

Insert text and refer to relevant text of the supporting documents.

Critical risks and risk management strategy

List critical risks, uncertainties or difficulties related to the implementation of your project, and your measures/strategy for addressing them.

Indicate for each risk (in the description) the impact and the likelihood that the risk will materialise (high, medium, low), even after taking into account the mitigating measures.

Note: *Uncertainties and unexpected events occur in all organisations, even if very well-run. The risk analysis will help you to predict issues that could delay or hinder project activities. A good risk management strategy is essential for good project management.*

Risk No	Description	Work package No	Proposed risk-mitigation measures

Operational maturity – Intraday energy storage/Solar PV-plus-storage systems

Credible implementation plan



Project management team & organization



Ensuring public acceptance



Strategy for permits, rights & licences



Risks & mitigation measures



Realistic timing for the main tasks e.g. 1 year of construction period is in line with current practices for solar PV systems

Participants possess the **required skills** and **capacity** to successfully deliver the action.

Provided a **credible assessment** from the relevant authorities for both the off- and on-site plants

Necessary permits appropriately identified and credible strategy for obtaining them provided

Relevant operational risks identified and proposed mitigation measures are effective.

Secured EPC contractor

Well defined roles and responsibilities of the different entities and suitable decision-making mechanisms

Justified **pre-existing public support**

Actions to engage the public have been proposed

Regulatory framework addressed via including the **relevant standards**

- Risk associated with delays during the construction phase is appropriately considered

Deliverables and main project milestones clearly defined with a sound rationale

Achievement of milestones confirmed via a credible list of verification activities



- Penalty clauses are included as an effective **mitigation measure**

Operational maturity – Wind energy/Wind turbines

Adequate WPs, deliverables & milestones



Project management team & organization



Ensuring public acceptance



Strategy for permits, rights & licences



Risks & mitigation measures



Timing of (some) of the main tasks not convincing and realistic.

- Milestone for long-term fixed price off-take agreement (via renewable energy auction) is not sufficiently defined.
- Timing and requirements of the local development plan (LDP), a key pre-requisite to receiving the building permit, are not sufficiently defined



Not demonstrated whether the participants possess the required skills to deliver the action successfully

No evidence of previous experience in the integration of solar and wind power plants.

Decision making structures not sufficiently addressed

Omission to specify associated environmental impacts

Location of nearest habitable area not taken into account e.g. the nearest house is only 900 m from the wind turbine

Regulatory procedures not sufficiently addressed:

The fact that the proposed size of wind turbine (2 MW) does not comply with current regulation ("Law 10H"), is not addressed with a credible strategy for the successful implementation of the project.



Timeline for obtaining the permits undermined:

Preliminary geotechnical studies for the wind turbine, which are required to start the permitting process, have not started at the time of the proposal submission.

No convincing mitigation measures for most of the identified operational risks

- **Mitigation measure** associated with the **risk of delays** on the procurement of the wind turbine is not convincingly effective.

Best practice

Scalability

Uwe LUTZEN, CINEA Head of Sector, Innovation Fund Unit

Objective: assess the scalability and the knowledge sharing

Scalability in terms of efficiency gains

Scalability in terms of further technology or solutions deployment

+

Quality and extent of the knowledge sharing

Follow the guidance provided in the Application form, section 4

- Efficiency gains:
 - expected technology **cost reductions**;
 - **efficient use of resources** or other ways to address resource constraints notably in terms of **reduction of use** and **more efficient use** of critical raw materials biomass and other scarce resources, and in terms of **circularity, recycling and recyclability** of such resources.
- Scalability in terms of further technology or solutions deployment:
 - at project site and possible transfer to other sites;
 - at sector level, regionally or across the EU economy or globally;
 - potential for technology transfer beyond sector
 - New value chains / reinforce existing ones in Europe
- Knowledge sharing

- Which are the related expected additional emission avoidance?
- What's the impact on economic growth and jobs?
- What's the potential to create new value chains or reinforce existing ones in Europe (development of strategic autonomy in industrial supply chains)? Is there a positive impact on competitiveness?
- For projects to a large degree dependent on subsidies, potential to become cost-competitive and financially viable over time in the absence of subsidies.

Quality and extent of the knowledge sharing


Knowledge sharing goals




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

In the application form Part B, section 4:


- Outline the plan for the activities for knowledge-sharing (e.g. objectives, key messages, target audiences, communication channels, social media plan, and relevant monitoring indicators)
- Describe the communication and dissemination activities planned to promote the activities/results & maximise the impact of the project

Scalability – Waste heat recovery

Checklist	Impact and expansion at regional level 	Impact at sector level/ International expansion 	CAPEX & OPEX reduction (Efficiency gains) 	Impact on economy wide scalability 
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Targets	 <p>Existence of a convincing plan to replicate at project site location and at regional level.</p> <p>Replication potential for 4 modules at project refinery and 16 modules across 4 other regional refineries.</p>	 <p>Sufficient information is provided on potential replication at international level, with two potential Repsol refinery sites identified (in Portugal and Peru) for 8 modules in total.</p>	<p>Cost reductions are substantiated in the feasibility study</p> <p>25-30% CAPEX decrease</p> <p>10-15% OPEX decrease</p>	 <p>Impact on the refinery sector and on other energy-intensive industries (e.g. chemicals and steel industries) and on the economy in general (e.g. other sectors such as district heating).</p>
	<p>590,000 t GHG emissions avoidance</p>			

Scalability – Waste heat recovery

Checklist	Knowledge sharing 
Targets	<p>Credible knowledge sharing plan among three phases:</p> <ul style="list-style-type: none">• Inception• Growth• Expansion <p>Clearly identified stakeholders</p> <p>Dissemination strategy towards:</p> <ul style="list-style-type: none">• Public and institutional bodies• General public <p>In total 14 Knowledge sharing activities with defined KPIs for each one</p>

Best practice

Cost efficiency

Quentin NERINCX, CINEA Financial Engineer

Relevant Cost Methodology

Read carefully Annex B

Implement the methodology carefully in the Financial Information File

(= Detailed budget table / relevant costs calculator)

- Strictly taking into account the methodology guidelines
- Do not try to have your own reading: check with Helpdesk if needed

Only the costs mentioned as eligible in the FIF and in the Appendix 1 of the "Methodology for calculation of relevant costs" are allowed to be included in the relevant costs.

Examples of costs NOT eligible:

- Capitalized interests
- Debt Service Reserve Account provisions
- Spare parts
- Insurance Premiums
- Royalties

Cost efficiency ratio calculation: follow the guidance of the new call text

A lower grant amount **improves the Cost Efficiency ratio**

Use the amount of absolute GHG emission avoidance as calculated under the GHG emissions avoidance criterion.

Cost efficiency – be consistent

Main change VS previous calls

Cost Efficiency

= automated in the « Relevant Cost Calculator / Financial Information File » (FIF)

Main attention points



- 1 Do not change or alter the file and the cells
- 2 Follow the instruction mentioned in the file
- 3 Do not forget to add the GHG emission reductions
- 4 Fill the file completely
- 5 **BE CONSISTENT** – Business Plan / FIF / Detailed financial model