2\textsuperscript{nd} stage criteria
Project maturity, relevant costs and cost efficiency
Technical Maturity – key considerations

Similar to the 1st stage, but more details required

Feasibility study

- Provide information in line with the table of contents indicated in section 8 of the application form. Highlight and explain any changes compared to your first stage submission.

- Follow the structure in application form

- Highlight and explain any changes compared to the first stage submission

- Underpin your presentation with evidence

- Attach any technical due diligence report if available

Technical feasibility to deliver the expected output and GHG emissions avoidance

- Fill in the risk matrix in section 4.4 of the application form

- Focus on major technical risks, be convincing with their mitigation

- Underpin your analysis with the feasibility study and provide the risk heat map.

Strong focus on risks and their mitigation
Operational Maturity – key considerations

Similar to the 1st stage, but more details required

- Provide detailed information in line with the table of contents indicated in section 8 of the application form. Do not forget to highlight and explain any changes compared to your first stage submission.
- Follow the structure in application form
- Highlight and explain any changes compared to the first stage submission
- Be as detailed as possible, this is your actual project planning document
- Be precise with your project milestones and how you get there
- Underpin your presentation with evidence
- Attach any relevant due diligence report if available
- Fill in the risk matrix in section 4.4 of the application form
- Focus on major operational risks, be convincing with their mitigation
- Underpin your analysis with the project implementation plan and provide the risk heat map.
Financial Maturity – key considerations

Much deeper financial analysis compared to the 1st stage

- Provide information in line with the table of contents indicated in section 8 of the application form. Do not forget to highlight and explain any changes compared to your first stage submission.

- See related slides and instructions. Follow the template.

- Follow the structure in application form
- Highlight and explain any changes compared to the first stage submission
- Provide evidence, e.g. binding letters of support/MoU/terms of agreement with project funders and/or suppliers/off-takers signed at board level
- Attach any financial due diligence report if available

- Fill in the risk matrix in section 4.4 of the application form
- Focus on major financial risks, be convincing with their mitigation
- Underpin your analysis with the business plan and provide the risk heat map.
Financial Maturity – key considerations

Objective: assess the project’s business and financial viability

- Value of the innovation, market access, competitive position
- Financial projections and assumptions, contracts with project parties
- Financial viability with the Innovation Fund grant
- Level of detail and consistency of the financial information. The Financial Model Summary Sheet needs to be filled as a minimum.

Credibility of the project business plan

- Funding sources to cover the project’s needs and at each milestone
- Steps to reach financial close
- Support / commitment from shareholders and other project funders

Soundness of the financing plan

- Risks to financial viability: potential impact and mitigation measures
- Risks to financing plan: ability to reach completion and contingency funding

Understanding of project financial risks
Updates to the Relevant costs methodology

Overview

• Greater clarity applied to all methodologies, including around key terms, to help applicants understand what should be taken into account in their calculations.

Key terms in a new Glossary

• CAPEX now fully defined across: (a) Construction costs; (b) Site infrastructure costs; (c) Development costs; and, (d) Intangible assets.

• OPEX – O&M; Replacement costs; Decommissioning costs (if in first 10 years).

• Revenues - All sources of revenues generated by the project, excluding operational benefits and external benefits outside the project boundary.

• Operational Benefits - Any revenue received by the project from the sale of EU ETS allowances for reductions in CO₂ emissions, preferential tariffs or feed-in premia, or other market-wide regulatory support programmes.
Key principles for relevant costs

Scope of relevant costs & methodologies to use

• **Relevant costs are “additional costs”** borne by applicants as a result of the application of the innovative technology related to GHG emissions avoidance.

• **For most projects**, you should calculate relevant costs based on the difference between the levelised cost of producing an output unit with the new technology, compared to the cost of producing a reference product using its current market price (“Reference price”).

• The **“fall-back” option** for you to use is a reference plant.

• In **exceptional circumstances** there will be no reference scenario to compare your project with.
Decision tree ensures applicants select the right relevant cost methodology

Applicants can use only one relevant cost methodology

Refer to Levelised Cost Models:
- Energy - 1a (LCOE)
- Products - 1b (LCOP)
- Electricity storage - 1c (LCOS)

Selecting an appropriate Reference scenario

Is there a comparative conventional production?
- No
  - Does the production involve electricity storage?
    - No
      - The reference scenario can be ignored
    - Yes
      - Select electricity storage methodology
  - Yes
    - Is it a product with a model reference plant?
      - Yes
        - Select reference plant methodology
      - No
        - Are the required data available?
          - Yes
            - Select levelised cost methodologies
          - No
            - Use guidance to complete financial template

1a  1b  1c
Key principles for relevant costs

Levelised Cost methodology (Option 1)

• “Default” methodology for applicants
• General principle is to establish an identifiable final product and existence of a product Reference price
• Levelised unit cost is cost of one unit of production over the full lifetime of a project. Note that financing costs are captured by the WACC.
• Suitable for most projects using different variants of the methodology:
   Energy/electricity generation (Option 1a)
   Product manufacture from energy intensive industries (Option 1b)
   Manufacture of innovative renewable or storage technology components from a new production facility (Option 1b)
   Electricity storage (Option 1c)
Key principles for relevant costs

Reference plant methodology (Option 2)

• “Fall back” methodology for applicants

• Existence of a Reference Plant (i.e. ETS benchmark installation in the case of industrial products or fossil fuel equivalent for renewable electricity/heat)

• Reliable Reference Plant cost data essential

• Project CAPEX, Revenues and Operational Benefits compared to the best estimate of the same parameters of a Reference Plant using conventional technology and with similar product and similar location to the project, where applicable
Key principles for relevant costs

No reference plant methodology (Option 3)

• “Last resort” methodology for applicants

• Situations where:

  ➢ No comparable conventional Reference plant exists – either in the EU (i.e. an EU ETS benchmark installation for industrial products) or globally; and,

  ➢ No reference product exists

• Relevant costs are derived from cost data, Revenues and any Operational Benefits from the planned project.
Key principles for relevant costs

Clarification on prices

• **Carbon price/allowance assumptions:** Average price of 2019 and 2020 to be used, which was 24.81 EUR/t.

• **Indexation/inflation assumptions:** Average of 2019 and 2020 to be used. Harmonised Indices of Consumer Prices (HICP) has been updated in Annex B.

Mandatory exclusions

• The following costs must be excluded from all relevant costs calculations:
  - **Terminal value** assumptions beyond the asset lifetime.
  - **Write down of existing (old) technologies** (i.e. stranded assets) that result from the project being supported.
Levelised Cost methodology: LCOE (Option 1a)

**Key principles**
- Applies Levelised Cost of Energy (LCOE) approach to determine the project’s ‘price’
- Generates the project/product unit costs, which is then compared to the Reference price
- Mimics long-term forward pricing forecasts used for project funding

**Reference**
- Reference price is the long-term market price for either power or heat

**Approach**
- \[ \text{LCOE} = \frac{\text{Investment cost} + \sum_{n} O&M \text{ cost} (1+r)^n + \sum_{n} \text{Fuel cost} (1+r)^n}{\sum_{n} \text{ElecProduced} (1+r)^n} \]

Where:
- \( r \) = discount rate (WACC)
- \( n \) = the year
- \( N \) = lifetime

Correction for 10-years OPEX to be applied in separate step (see next slide)

NB: no fuel cost in most renewables projects
To be in line with the IF Delegated Regulation, the share of OPEX after 10 years has to be excluded from the relevant costs calculation.

The approach is to estimate the share of the project’s discounted OPEX beyond 10 years out of the sum of CAPEX and discounted OPEX over the project lifetime (‘discounted costs’). To derive the relevant cost, use this percentage to adjust the discounted costs of the project and of the reference scenario (see steps 8 and 9 on p.21).

The applicant should verify the effect of the NPV of the difference between the OPEX of the project and of the pre-dominant conventional technology for the remaining lifetime after 10 years of operation.

In case of a significant impact on the relevant costs, given a reliable estimate of the OPEX for the pre-dominant conventional technology, a more detailed calculation should be applied for the OPEX adjustment.
Levelised Cost methodology – LCOP (Option 1b)

Key principles

- Use a similar approach to the LCOE approach
- Calculates fixed nominal unit price (over full project lifetime) that would need to be paid for the innovative product in order to justify the investment to build the project (Levelised Cost of Product), including its cost of funding.

Approach

\[
LCOP_{\text{Product}} = \frac{\text{Investment cost} + \sum_{n}^{N} \frac{O&M \text{ cost}}{(1+r)^n} + \sum_{n}^{N} \frac{\text{Fuel cost, Materials cost etc}}{(1+r)^n}}{\sum_{n}^{N} \frac{\text{Units produced}}{(1+r)^n}}
\]

Where:
- \( r \) = discount rate (WACC)
- \( n \) = the year
- \( N \) = lifetime

Correction for 10-years OPEX to be applied in separate step

Reference

- Reliant on market price benchmarks for reference products

Reference 15
Objective: Calculate discounted cost per unit of production using Levelised Cost of Product

- **Step 1:** Establish the total CAPEX and OPEX of the project
  - Key inputs which applicants need to consider include:
    - Upfront costs of construction (CAPEX);
    - Fixed OPEX & Variable OPEX for the full project lifetime
    - Production (number of units produced by project)
    - Indexation
    - Operational Benefits: Carbon allowances sold (based on 25% emissions reduction, with revenues reducing OPEX. Overall impact reduced relevant cost by 4%)
    - Public support (not applicable in this example)

- **Step 2:** Reduce the OPEX by any Operational Benefits
## LCOP hypothetical project - Key inputs (1)

<table>
<thead>
<tr>
<th>Key inputs</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>100,000 tpa</td>
</tr>
<tr>
<td>Reference product price</td>
<td>100.0 EUR/ton</td>
</tr>
<tr>
<td>Premium/(reduction) to reference</td>
<td>0.0 EUR/ton</td>
</tr>
<tr>
<td>Date of financial close</td>
<td>31-Dec-20</td>
</tr>
<tr>
<td>Construction cost</td>
<td>25,000 EURk</td>
</tr>
<tr>
<td>Construction duration</td>
<td>1 years</td>
</tr>
<tr>
<td>Project lifetime</td>
<td>20 years</td>
</tr>
<tr>
<td><strong>Construction Year</strong></td>
<td></td>
</tr>
<tr>
<td>Production ramp up</td>
<td>0.00% - 100.00%</td>
</tr>
<tr>
<td>Indexation</td>
<td>2.00%</td>
</tr>
</tbody>
</table>
## LCOP hypothetical project - Key inputs (2)

<table>
<thead>
<tr>
<th>Key inputs</th>
<th>Benefits</th>
<th>Operating costs - variable</th>
<th>Operating costs - fixed</th>
<th>Lifecycle</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>other state aid received towards construction costs</td>
<td>0 EURk</td>
<td>1,500 EURk/year</td>
<td>occasional lifecycle costs</td>
</tr>
<tr>
<td></td>
<td>state aid subsidies received annually</td>
<td>0.00 EUR/ton</td>
<td></td>
<td>lifecycle cost frequency - once every...</td>
</tr>
<tr>
<td></td>
<td>carbon allowances sold</td>
<td>2,660 Tons/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>carbon price</td>
<td>25 EUR/ton</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>O&amp;M and other variable costs</td>
<td>10 EUR/ton</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>feedstock</td>
<td>50 EUR/ton</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>total</td>
<td>60 EUR/ton</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operating costs - total</td>
<td>7,500 EUR/ton</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LCOP hypothetical project – use of WACC

• **Step 3**: Determine the number of units forecast to be produced by the project over the lifetime of the project

• **Step 4**: Discount the OPEX and units produced over the project lifetime using the WACC (see table)*

• **Step 5**: Divide the CAPEX plus Present Value of the OPEX (the “total Discounted costs”) by the total discounted Units produced over the full project lifetime (the “Levelised cost”)

<table>
<thead>
<tr>
<th>WACC calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of equity</td>
</tr>
<tr>
<td>Cost of debt</td>
</tr>
<tr>
<td>Equity percentage</td>
</tr>
<tr>
<td>Debt percentage</td>
</tr>
<tr>
<td>Corporation tax rate</td>
</tr>
<tr>
<td><strong>WACC</strong></td>
</tr>
</tbody>
</table>

*Done in order to reflect a flat nominal price of production for the term of the plant operation as per Levelised Cost calculation norms
LCOP hypothetical project – cost difference

- **Step 6:** Establish the difference between the:
  
  a) Reference product price (100 EUR/ton); and
  
  b) Levelised cost calculated for new product (115.88 EUR/ton) = 15.88 EUR/ton

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discount rate</strong></td>
<td>7.33%</td>
</tr>
<tr>
<td><strong>Discounted costs</strong></td>
<td>111,527</td>
</tr>
<tr>
<td><strong>Production discounted</strong></td>
<td>962,398</td>
</tr>
<tr>
<td><strong>Discounted cost per ton</strong></td>
<td>115.88 EUR/ton</td>
</tr>
<tr>
<td><strong>Comparable unit cost</strong></td>
<td>100 EUR/ton</td>
</tr>
<tr>
<td><strong>Difference</strong></td>
<td>15.88 EUR/ton</td>
</tr>
</tbody>
</table>
LCOP hypothetical project – relevant cost

- **Step 7:** Multiply the cost difference (EUR15.88/ton) by the discounted units produced over the full project lifetime.

- **Step 8:** Calculate percentage of Discounted costs that the discounted OPEX after 10 years of operation represents.

- **Step 9:** Multiply difference by 1-OPEX % past 10 years to derive the relevant cost = EUR 10.8m.

- **Step 10:** Apply IF’s 60% maximum intervention rate to relevant cost to derive project’s maximum grant award level = EUR 6.5m.

### Subtract OPEX percentage after 10 years

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>End date</td>
<td>31 Dec 31</td>
</tr>
<tr>
<td>Opex beyond 10 years NPV</td>
<td>32,510 EURk</td>
</tr>
<tr>
<td>Percentage of discounted costs</td>
<td>29.15%</td>
</tr>
<tr>
<td>Cost gap</td>
<td>11.25 EUR/ton</td>
</tr>
<tr>
<td>Lifetime discounted production</td>
<td>962,398 tons</td>
</tr>
<tr>
<td>Relevant Cost</td>
<td>10,831 EURk</td>
</tr>
<tr>
<td>Maximum IF grant</td>
<td>6,499 EURk</td>
</tr>
</tbody>
</table>
Levelised Cost methodology – LCOS (Option 1c)

Key principles

- Follows similar methodology to LCOE/LCOP but incorporates revenue streams from each specific storage ‘use case’ to determine the reference ‘market price’
- Quantifies the discounted cost per unit of discharged electricity for a specific storage technology and application over the project lifetime.
- Accounts for all capital and ongoing costs affecting the lifetime cost of discharging stored electricity in order to derive the relevant costs of the project

Reference

- ‘Market price’ derived by using current market prices and achievable volume for each service in the particular Member State market

Approach

\[
\text{LCOS} \left[ \frac{€}{MWh} \right] = \frac{\text{Investment cost} + \sum_{n=1}^{N} \frac{O&M \text{ cost}}{(1+r)^n} + \sum_{n=1}^{N} \frac{Charging \text{ cost}}{(1+r)^n}}{\sum_{n=1}^{N} \frac{Elec_{\text{Discharged}}}{(1+r)^n}}
\]

Where:
- \( r \) = discount rate (WACC)
- \( n \) = the year
- \( N \) = lifetime

Correction for 10-years OPEX to be applied in separate step
Financial Model Summary Sheet  * new *

Purpose & use

- As part of Application Form B, applicants must complete a Financial Model Summary Sheet (FMSS)
- This ensures that financial information is collected in a **standardised template**
- **FMSS is available to download from the Funding and Tenders Portal**
- Applicants must complete the FMSS using the assumptions and financial projections from their **own financial model**
## Financial Model Summary Sheet

### 5 elements to complete using data from your financial model

1. **Project timing**
2. **Funding sources**
3. **Profit & Loss**

<table>
<thead>
<tr>
<th>Project timing</th>
<th>Project timing</th>
<th>Project timing</th>
<th>Project timing</th>
<th>Project timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>2019</td>
<td>2020</td>
<td>2021</td>
<td>2022</td>
</tr>
<tr>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><strong>2</strong></td>
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<tr>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

### Funding sources

- **Construction funding sources**
  - Loans from local authorities
  - Loans from other financial institutions
  - Loans from private investors
  - Grants from government bodies
  - Other funding sources

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans from local authorities</td>
<td>$1,234</td>
</tr>
<tr>
<td>Loans from other financial institutions</td>
<td>$2,345</td>
</tr>
<tr>
<td>Grants from government bodies</td>
<td>$3,456</td>
</tr>
<tr>
<td>Other funding sources</td>
<td>$4,567</td>
</tr>
</tbody>
</table>

### Profit & Loss

- **Operating income**
  - Sales
  - Service charges
  - Other income

<table>
<thead>
<tr>
<th>Income</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>$12,345</td>
</tr>
<tr>
<td>Service charges</td>
<td>$3,456</td>
</tr>
<tr>
<td>Other income</td>
<td>$5,678</td>
</tr>
</tbody>
</table>

- **Operating expenses**
  - Operating costs
    - Direct costs
      - Materials
      - Labor
    - Indirect costs
      - Rent
      - Insurance
  - General and administrative expenses
  - Interest (if applicable)

<table>
<thead>
<tr>
<th>Expense</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating costs</td>
<td>$5,678</td>
</tr>
<tr>
<td>General and administrative expenses</td>
<td>$3,456</td>
</tr>
<tr>
<td>Interest (if applicable)</td>
<td>$1,234</td>
</tr>
</tbody>
</table>

- **Net operating income**

<table>
<thead>
<tr>
<th>Income</th>
<th>Amount</th>
</tr>
</thead>
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</tr>
<tr>
<td>Interest (if applicable)</td>
<td>$1,234</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Net operating income</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$5,456</td>
</tr>
</tbody>
</table>

- **Net income**

<table>
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<td>Interest (if applicable)</td>
<td>$1,234</td>
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<table>
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<tr>
<th>Net income</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$5,456</td>
</tr>
</tbody>
</table>
5 elements to complete using data from your financial model

4. Cash flow statement

5. Balance sheet
Financial Model Summary Sheet

Approach for applicants

• Fill **only yellow cells** in the FMSS with the projected data coming from **your own financial model**

• Ensure that the data inserted in the FMSS is **consistent with the data used for the relevant cost calculation sheet**
• **Fill the expected funding uses and sources** associated with project construction and operation

• Funding sources should correspond to the **total financing package expected to be secured at financial close**

• As per instructions on the input sheet, insert the amount of the Innovation Fund grant amount **expected to be disbursed during construction and the projected grant disbursement profile during operations**, in line with the project milestones

• Any grant disbursed **prior** to construction should be recorded as a reduction in development costs
Financial Model Summary Sheet

Key issues to consider around inputs

• Applicants needs to be aware of the following when developing their model:

  ➢ All data in the FMSS must be consistent with the relevant cost calculation

  ➢ Information provided in the FMSS is the **minimum required** and you are encouraged to provide additional details from sheets coming directly from your financial model or your full financial models should be appended

  ➢ Full financial models, where provided, should follow good practice and be easy to read and reference

  ➢ Links between relevant cost inputs/calculations and financial model inputs should be clearly marked

  ➢ Errors or an incomplete FMSS indicates a lack of financial maturity

• Applicants can download a **fully developed financial model example** from the Funding and Tenders Portal. It also contains **good practices** for you to follow to help you to develop your financial models and complete the IF Summary Sheet.
Financial Model Summary Sheet

Summary Sheet outputs

Your data generates:

1. Summary Chart
   - Profit & Loss
   - Balance Sheet
   - Cash Flow Statement
   - IRR Analysis

2. Model Report
   - Income statement, Balance sheet, Cash Flow Statement, Key Ratios
Cost Efficiency

Relevant costs less contribution by project applicant

Absolute GHG emission avoidance
During 10 years after entry into operation

Maximum grant is 60% of total relevant costs

Applicants that choose not to apply for the maximum grant may be more competitive in their sector when ranked against other applicants in ‘cost per unit performance’ metric
THANK YOU!