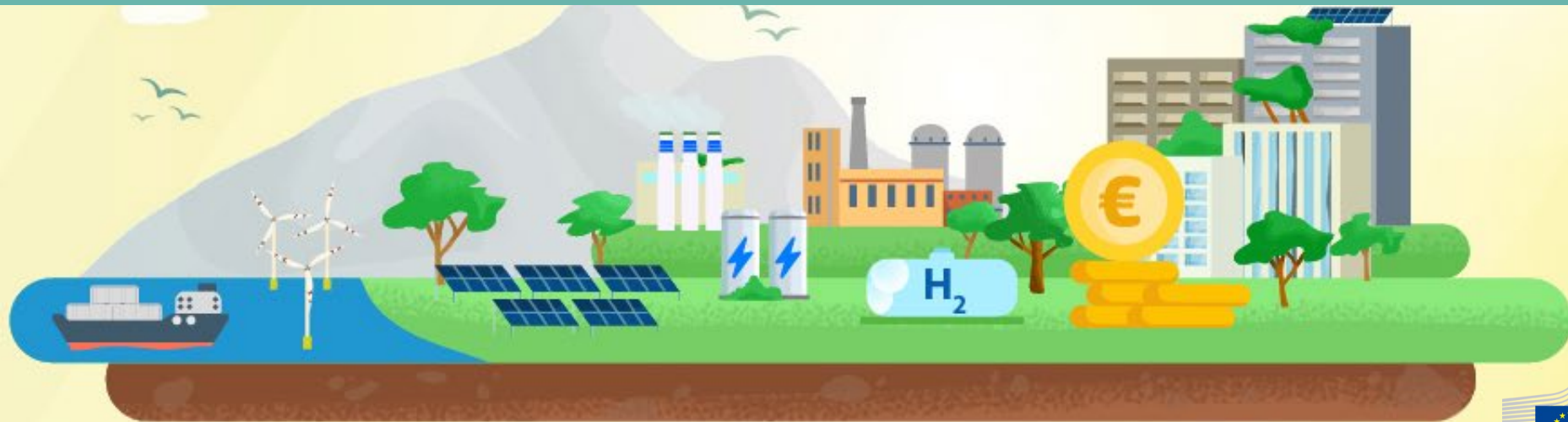


# Innovation Fund

Call for Large-scale projects 2021 - Relevant cost calculation

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# Relevant Cost

## What has changed since the last large scale call ?

- Relevant Cost methodologies have been streamlined (please see the guidance document on relevant cost methodology) and for example all Levelised cost methodologies are now described as one
- The Relevant Cost template has been integrated with the Financial Model Summary sheets in order to avoid incoherent input and mistakes between relevant cost assumptions and the financial Model
- This excel file also includes the grant drawdown and cost efficiency computation

# Key principles

## Definitions

**Relevant costs (“RC”)** = “difference between the best estimate of the CAPEX, the NPV of OPEX and operational benefits arising during 10 years after the entry into operation of the project compared to the result of the same calculation for a conventional production with the same capacity in terms of effective production of the respective final product.”

### CAPEX

Construction costs, site infrastructure costs, development costs and intangible assets of the project (please refer to glossary in guidance document)

### OPEX

Operation and Maintenance cost, decommissioning costs (if in the first 10 years), they do not include depreciation cost of CAPEX !

### Operational benefits

Any revenue received by the project from the sale of EU ETS allowances for reductions in CO<sub>2</sub> emissions, preferential tariffs or feed-in premia, or other market-wide regulatory support programs

### Discount rate

Discount rate used for NPV calculations is the Weighted Average Cost of Capital (WACC) of the project

# Key principles

## Which methodology should applicants use?

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

### Methodologies

#### Levelised cost

1

**Levelised cost:** for most projects, RC should be 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 expected market prices (“reference price”)

#### Reference plant

2

**Reference plant:** “fall-back” option in case the project includes processes generating intermediate or multiple products, or where market prices cannot be easily established and no substitute products exist and internal cost data deliver more reliable results

#### No reference

3

**No reference scenario:** “last-resort” option in exceptional cases if there is no reference product or conventional technology available as reference to compare the project with

# Key principles

## 1 Levelised cost methodology

- “**Default**” methodology
- General principles: if identifiable final product and existence of a product reference price
- Approach: based on levelised unit cost, which is cost of one unit of production over the **full project lifetime**. Note that financing costs are captured by the WACC
- **Suitable for most projects using different variants of the methodology**
- Projects could cover power or heat generation, services and product, manufacturing of components (for energy storage solutions, heat pumps, electrolysers, renewable energy installations,...)

# Key principles

## 2 Reference plant methodology

- **“Fall back” methodology**
- General principles: existence of a reference plant (ETS benchmark installation in the case of industrial products or fossil fuel equivalent for renewable electricity/heat) and reliable cost data for the reference plant
- Approach: based on project CAPEX, OPEX, Operational Benefits and Revenues 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. Revenues defined as all sources of revenues generated by the project, excluding operational benefits and external benefits outside the project boundary.
- **Suitable for projects where market prices cannot be easily established and no substitute products exist and where internal cost data deliver more reliable results**



# Key principles

## 3 No reference plant methodology

- **“Last resort” methodology**
- General principles: no comparable conventional reference plant exists – either in the EU (EU ETS benchmark installation for industrial products) or globally; and no reference product exists
- Approach: based on the best estimate of CAPEX and NPV of OPEX, Operational Benefits and Revenues arising over the first ten years of operation.
- **“Last resort” for projects where no reference product or conventional technology is available as reference**

# Key principles

## General assumptions applicable to all methodologies

### Carbon price and OPEX inflation

- **Carbon price:** applicants are instructed to justify the carbon prices that they consider appropriate over the entire project lifetime
- **OPEX inflation:** applicants are free to provide their best estimate of OPEX taking account of inflation with the justification for the assumptions taken

Updated



**The projections should be consistent across all application documents**



### Non-eligible costs

- **Terminal value:** no value beyond the asset useful lifetime
- **Stranded assets:** write down of assets related to existing technologies are excluded
- **Decommissioning costs:** acceptable if during first ten years (e.g. for demo projects)



# Methodologies

## Levelised Cost Methodology

### Approach

Generates unit cost over the project lifetime which is compared to the reference price

### Reference

Reference price is the projected sale price of the product or service. It corresponds to the projected market price of the comparable product/service plus any green premium

### Formula

LC = net present value of the costs over the full project lifetime/discounted sum of units produced over the full project lifetime

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

$$LC \left[ \frac{\text{€}}{\text{Units}} \right] = \frac{CAPEX + \sum_n^N \frac{Opex}{(1+r)^n} - \sum_n^N \frac{Operational\ Benefits}{(1+r)^n}}{\sum_n^N \frac{Volume_{Produced}}{(1+r)^n}}$$

Updated

# Methodologies

## OPEX adjustment to the Levelised Costs

- Rationale: 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.
- Approach: 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 costs, use this percentage to adjust the discounted costs of the project and of the reference scenario.

# Methodology

2

## Reference plant (\*)

### Approach

- Establish the reference plant based on the product produced, not sector
- Use benchmark plant under the EU ETS if such a plant exists
- In first instance from Member State where project is located, or else a EU installation or, if that does not exist, internationally

### Formula

RC = difference in CAPEX and NPV of OPEX net of Revenues and Operational Benefits over a 10-year period between the project and reference plant

*Relevant costs*

$$\begin{aligned} &= (IF \text{ project CAPEX} - \text{reference plant CAPEX}) + (PV \text{ IF project OPEX} - PV \text{ reference plant OPEX}) \\ &- (PV \text{ IF project Operational Benefits} - PV \text{ reference plant Operational Benefits}) \\ &- (PV \text{ IF project Revenues} - PV \text{ reference plant Revenues}) \end{aligned}$$

# Methodology

3

## No reference plant (\*)

### Approach

- Mimics the reference plant model approach, however applicants do not include reference plant data

### Formula

RC = best estimate of CAPEX and NPV of OPEX net of Revenues and Operational Benefits of the project over a 10-year period

*Relevant costs*

*= project CAPEX + PV project OPEX – PV project Operational Benefits – PV project Revenues*

(\*) Last resort methodology when conventional production does not exist. Applicants must justify in detail why it was not possible to apply another methodology

# Weighted Average Cost of Capital (WACC)

## Key principles

- WACC is applied to discount future revenue income and cost streams over the project lifetime to make them comparable
- Applicants should calculate a project WACC based on cost of equity and cost of debt

## Formula

$$WACC = E/V * Re + D/V * Rd * (1 - Td)$$

Re = cost of equity

Rd = cost of debt

E/V = equity portion of total capital (Equity over total Value)

D/V = debt portion of total capital (Debt over total Value)

Td = Tax rate

New

- For the WACC computation, shareholders loans should be counted as equity as they carry exactly the same risks.

# Weighted Average Cost of Capital (WACC)

## Approach

Equity return expectations typically are in the **8-16% range**

### ▪ Cost of equity:

$$Re = Rf + (\beta * ERP) + IP$$

- $Rf$  = risk free rate
- $\beta$  = beta of the project
- ERP = equity risk premium
- IP = innovation premium

### Estimation

- $Rf$ : applicants are required to use the Appendix 2 of guidance document
- ERP: idem
- Innovation premium: if innovation leads to risks that go beyond the conventional sector. As default, a value of 3% should be applied, with the potential to increase it to 4% or lower it to 2%



### ▪ Cost of debt:

$$Rd = \text{base rate} + \text{credit spread}$$

- Base rate: swap rates consistent with average debt maturity. Please note that even if swap rates can be negative, banks will not lend money at negative rates
- Credit spread: based on terms expected by debt providers, in line with market standards

# Financial Information File tutorial

Financial Information File tutorial is available in CINEA website

 Link: [https://cinea.ec.europa.eu/funding-opportunities/calls-proposals/innovation-fund-third-large-scale-call-projects\\_en](https://cinea.ec.europa.eu/funding-opportunities/calls-proposals/innovation-fund-third-large-scale-call-projects_en)



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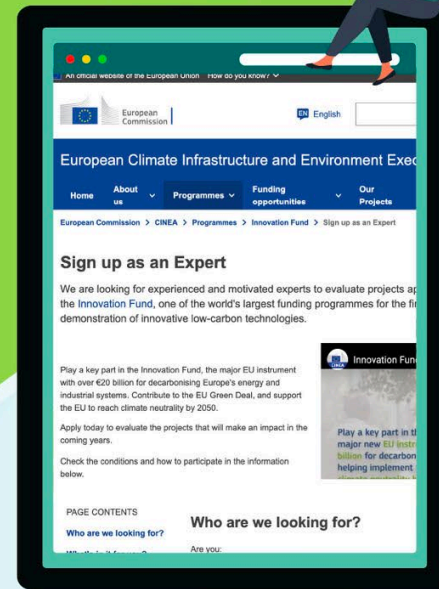
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