Introduction to developer Levelized cost of energy tool

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Objective of session

The objective of this session is to:

- Introduce the developer LCOE tool
- Present how it is used in FIMOI
- Provide examples of how it can be used
- Present exercises to get familiar with the tool

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Agenda – Introduction to developer LCOE tool

- Intro to the tool

- Link to FIMOI project

- Walk-through of the tool

    - Structure of tool

    - Data inputs

    - Calculations and results

- Summary of main features

- Exercise

Introduction to LCOE tool

- What is the purpose of the LCOE tool?
- How is it applied in the FIMOI project?

Purpose of the tool

The purpose of the LCOE developer tool is to estimate the expected LCoE seen from a developer point of view. Such an LCoE will provide a baseline for the expected bids on future RE projects.

The LCoE tool has previously been used for estimating the expected tariff from the First Offshore Wind Project of India as well as several other feasibility studies around the world.

The tool works for any renewable energy technology.

The tool is Excel based and provides the user with options for loan structuring, public funding and incentives, typical PPA design features and estimation of impact of uncertainty of variable generation

The tool is available from the DEA e-learning website

Application of the tool in the FIMOI project

In the FIMOI project the tool is used for assessing expected prices of first offshore wind farms in India

Standard LCoE estimations often overlook the fact that PPA design can have a big impact on the price of renewable energy. This tool provides the user with options for investigating the impact of various standard PPA contract terms such as:

- Late commissioning penalties
- Committed generation and associated penalties
- Curtailment
- Payment terms i.e. the delay/lag in payment from delivery of energy to payment from off-taker
- Indexing
- Exchange rate risk

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Walk-through of the tool

- What is the overall structure?
- Which data inputs are required?
- How are calculations performed?
- Which results (and interpretations) does the tool provide?
- How can more studies be carried out?

Summary of developer LCOE tool

The main features of the tool relevant for the FIMOI project and the Indian context are:

- Analysis of expected developer costs for concrete projects within the wind sector
- Analysis and evaluation of main cost parameters for LCOE costs
- Sensitivity analysis of the impact of PPA contract design

Q&A Session on Monday, June 15

Live online Q&A session discussing:

- Possible questions from presentations and the project
- The exercises
- Brief evaluation

If you have any questions or points that are worth discussing, please send the questions in advance to keha@ens.dk

They will be aggregated and answered by the DEA!

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Exercise

Question 1:

What happens if you increase CAPEX of DEMO1 by 10%?

- How much does the LCOE increase?
- Try updating the decosting chart

Question 2:

what happens if you increase the Gross AEP of DEMO1 by 10%?

- How much does the LCOW increase?
- Try updating the sensitivity plots using the update button

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Thank you for listening!

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