



Engineer's Workshop:



A Simpson

Feasibility Study



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Selection of Project for Feasibility Study

- A feasibility study contains a detailed technical and financial analysis to prove feasibility of the project and identifies optimum option for capacity, connectivity and engineering for the proposed project .
- For smaller projects the prefeasibility and feasibility study could be merged as one study. For much larger and complicated projects, the feasibility will be much more expensive and so doing a prefeasibility to prove concept before embarking on a more detailed feasibility is the better approach.

2

Exercise

- Review your project options and identify which can be progressed with a merged prefeasibility/ feasibility study.

3

Economic Evaluations to make decision to proceed.

- LCOE – Levelized cost of electricity (energy).
- The LCOE is a fundamental calculation used in the preliminary assessment of an energy-producing project.
- The LCOE can be used to determine whether to move forward with a project or **as a means** to compare different energy-producing projects.
- The LCOE of an energy-generating asset can be thought of as the average total cost of building and operating the asset per unit of total electricity generated over an assumed lifetime.
- The formula to calculate the LCOE is $(\text{Present Value of Total Cost Over the Lifetime}) / (\text{Present Value of All Electricity Generated Over the Lifetime})$.

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Simplified Exercise on LCOE

- [LCOE Example](#)
- You wish to increase a 1 MW solar PV farm by 1 MW using the same solar PV panels.
- The estimated lifespan of the installation is 25 years.
- The Capacity factor of the installed farm from historic data averages at 15%.
- The panels are expected to degrade at 0.5% annually.
- O&M is expected to increase annually at 2%.
- Inverters are expected to be replaced every 10 years
- Associated discount factor is 10%.

Solution