# Financial Feasibility Model

[A Solar Project Financial Feasibility Model outlines the project's costs and anticipated revenue streams throughout its lifespan. It aids in risk assessment and decision-making by taking into account the perspectives of both the project investor and developer. Financial feasibility model enables the simulation of various scenarios, considering factors such as electricity generation, solar panel degradation, capital costs, operations and maintenance costs, fluctuations in electricity prices, project cash flows, payback periods, and return on investment (RoI). Additionally, it assists in selecting the appropriate technology, system sizing, and contract negotiations.]

## A. Project overview

- Project name
- Location
- Capacity (MW)
- Project start and end date

## B. Expected Electricity Production

- Solar Irradiance
- Efficiency of solar panels
- Solar panel degradation rate
- Annual expected electricity generated throughout the project lifespan (kWh/year)

## C. Capital Expenditure (CAPEX)

- Land acquisition costs
- Project system costs which include solar panels, inverters, mounting structures and balance of system, etc.
- Project installation costs
- Grid connection costs
- Miscellaneous costs

## D. Operational Expenditure (OPEX)

- Project operations and maintenance (O&M) costs
- Insurance
- Land Lease
- Miscellaneous costs

**Note**: The content in the document is intended to only provide guidance to prepare the report

## E. Revenue Projections

- Electricity production
- Electricity feed-in tariff
- Annual Increase in Electricity Price (%)
- Any passive income/savings
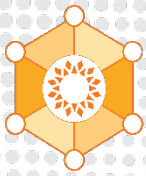- Annual revenue

## F. Project Financing

- Equity
- Debt
- Interest rate
- Loan tenure
- Tax incentives and grants

## G. Financial Metrix

- Net present value
- Internal rate of return
- Payback period
- Levelized cost of energy

## H. Sensitivity analysis

- Feed-in tariff
- Project costs
- Uncertainty in solar irradiation
- Variation in loan terms

# Sensitivity Analysis Model

[Sensitivity analysis for a solar project financial model entails the identification of key variables that influence the overall financial feasibility of the project. It also requires an examination of the ways in which alterations to these variables impact the eventual results of the project.]

| A. Key Variables |
|---|
| - CAPEX and OPEX |
| - Electricity feed-in tariff |
| - Uncertainty in solar radiation (e.g., P50, P75 and P90) |
| - Discount rate |
| - Inflation rate |
| - Debt and equity ratio |
| - Tax incentives and grants |
| **B. Sensitivity analysis table** |
| - Develop a base case assumptions/values for each variable |
| - Develop scenarios by varying each key variable by a certain percentage |
| **C. Financial Matrix** |
| - For each scenario, calculate the financial matrix involving parameters: |
| • Net present value |
| • Return on investment |
| • Payback period |
| • Levelized cost of energy |
| **D. Results** |
| - Compare results to analyze the sensitivity of the project for each variable or combination of variables |
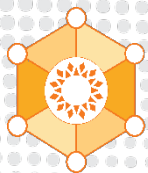
# Revenue Projection Model

[A revenue projection model for a solar project encompasses multiple elements to guarantee financial viability and to appeal to potential investors or stakeholders.]

## A. Key Input Parameters

- Project Capacity
- Capacity Factor
- Annual Degradation Rate
- Annual Increase in Electricity Price
- Operational Life
- Construction and operations timelines

## B. Cost Projections

- Capital Expenditure (CAPEX)
- Operating Expenditure (OPEX)
- Maintenance costs
- Insurance and administrative expenses

## C. Financing Model

- Debt and equity structure
- Weighted Average Cost of Capital (WACC)
- Incentives and subsidies

## D. Revenue Model

- Yearly electricity generation
- Sale of electricity via power purchase agreement or at market price
- Any passive income/savings
- Annual revenue calculations

## E. Sensitivity analysis

- Variation in solar generation
- Changes in electricity prices
- Fluctuations in CAPEX and OPEC

## F. Return Matrix

- Internal Rate of Return (IRR)
- Net Present Value (NPV)
- Payback period
- Cash-on-Cash return

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