

Site Assessment Report



[Viability of solar project investments necessitates an accurate assessment of a site's suitability, which is a crucial step in the solar project site assessment process for determining the potential of a location for solar energy system installation.]

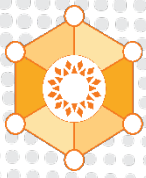
A. Introduction
<ul style="list-style-type: none">- Goal and scope of the site assessment- Project information, including stakeholders (such as developer/client, utility, regulatory body, etc.) and timelines
B. Project Site Description
<ul style="list-style-type: none">- Project site location, including address, geographical coordinates, and maps, etc.- Physical characteristics of the site such as land topography, area size, and soil type.
C. Solar Resource Assessment
<ul style="list-style-type: none">- Solar access, daily average availability and seasonal variation- Shadowing influence of potential surrounding obstructions
D. Infrastructure Assessment
<ul style="list-style-type: none">- Evaluate site accessibility for transport of materials and personnel via road, railways and airport- Site's proximity to the grid and potential interconnection points- Accessibility to water
E. Regulatory and Community Impact
<ul style="list-style-type: none">- Local laws (such as permits) and regulations applicable- Assessment of potential impact of project on the local community
F. Electricity Output
<ul style="list-style-type: none">- Expected electricity to be generated as per the proposed project capacity
G. Economic Analysis
<ul style="list-style-type: none">- Project cost estimates- Financial incentives available such as tax rebates, subsidies and grants- Estimated return on investment
H. Solar PV Array Layout Options
<ul style="list-style-type: none">- Available Solar PV Panels mounting options, such as on rooftops, on ground mounts or on elevated poles, etc.- In case of rooftops evaluate the roof structural strength and shadowing impact



STAR-CENTRE

I. Conclusion and Recommendations

- Summary of the assessment
- Recommendations for project implementation



System Design Specifications



[Designing a solar project involves several key specifications to ensure the system is efficient, safe, and meets the energy needs of the site.]

A. System Description

- Type of system i.e., ground mounted or rooftop grid-connected photovoltaic system
- System size
- Expected annual energy output
- Type of technology and technical specification of system components (such as solar modules, inverters, mounting structure, wiring, monitoring system etc.)

B. High Level System Design

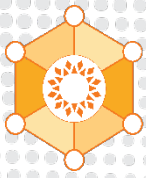
- System power flow block diagram with all major components
- Solar component design
 - Land requirement
 - Single array layout diagram
- Substation component design
 - One-line drawing for major components
 - Information about function of substation each component

C. In Detail System Design

- Detailed design of solar components
 - Single Array Parameter which includes solar panel parameters, string parameters, current output, combiner box capacity, inverter capacity, ILR, and irradiance correction factor, and continuous current correction, earthing, AC/DC cables and fuse protection, etc.
 - Solar tilt angle and azimuth
 - Solar array layout including single solar array drawing and solar plant layout
- Detailed design of substation components
 - Single line diagram of collector arrangement, which includes inverter and transformer, to step the voltage to bring to sub-transmission level
 - Design of key components of the substation, such as surge arrestor, feeders, capacitor bank, relays, current transformer, circuit breaker, etc.

D. Documentation and Reporting

- Detailed specifications of all system components
- Technical standards for each component
- Step-by-step installation guide
- Procedures for system monitoring and performance reporting



STAR-CENTRE

Grid Interconnection Study



[The energy generated by a solar project is required to be fed into the grid. This needs a comprehensive grid interconnection study which includes details about the project, grid requirements and regulations.]

A. Solar Project Description
<ul style="list-style-type: none">- Overview of the solar project, and necessity for grid interconnection- Detailed information on the solar project, including capacity, location, and technology- Specifications of solar panels, inverters, and other key components.
B. Grid Interconnection Requirements
<ul style="list-style-type: none">- Details on the substation considered for grid interconnection- Technical specification for grid connection- Compliance of utility regulations and standards
C. Impact Assessment
<ul style="list-style-type: none">- Analyzing solar project impact on the grid's stability and power quality- Mitigation strategies for potential issues
D. Interconnection System Design
<ul style="list-style-type: none">- Detailed design of the grid interconnection system- Sizing and selection of equipment like inverters and transformers, etc.- Safety and protection schemes
E. Grid Studies
<ul style="list-style-type: none">- Power flow and fault current analysis- Harmonic analysis to assess potential distortion
F. Cost Estimation
<ul style="list-style-type: none">- Interconnection facility cost estimation such as costs for distribution facility, production meter, and substation facility, etc.- Estimates for equipment, installation, and any necessary studies
G. Interconnection Agreement
<ul style="list-style-type: none">- Outline of the agreement terms with the utility- Permitting and approval processes