

DC PACE Solar PV Feasibility Study Guidelines

The DC PACE program requires a detailed solar feasibility study for potential projects. The feasibility study at the minimum should address the following components:

Site Suitability Assessment

- I. *Ambient Conditions*
 - a) Site location (address, latitude, longitude, azimuth [degrees])
 - b) Building Type (Commercial, Multifamily, Office, etc.)
 - c) Gross Square Feet
- II. *Building Conditions*
 - a) Location for solar energy system: Roof-top / Ground / Parking canopy
 - b) Solar energy system support/foundation description
 - i. Roof-top
 - Roof dimensions (identifying usable PV panel space)
 - Roof pitch
 - Roof materials of construction
 - PV mounting system / Roof penetrations
 - Obstruction/shading analysis in planned PV panel area (including methodology utilized in the shading determination)
 - Roof condition (remaining useful life) or replacement design, if required
 - Structural adequacy to support installed solar system (including recommendations if insufficient)
 - ii. Ground
 - Description and condition of area (paved surface vs. open ground)
 - Obstruction/shading analysis in planned PV panel area (including methodology utilized in the shading determination)
 - Description of necessary work to support solar array rack(s)
 - Deed or plot plan showing area is contiguous with facility to be served
 - iii. Parking Canopy
 - Description and condition of parking area
 - Obstruction/shading analysis in planned PV panel area (including methodology utilized in the shading determination)
 - Description of necessary work to support solar array rack(s)
 - Deed or plot plan showing area is contiguous with facility to be served

Building Energy Use and Cost

1. Brief description of major building energy-use systems
2. Description of electricity metering (number of meters, location, etc.)

3. At least one year of monthly electricity usage data (original bills preferred)

PV System

1. Solar module orientation and tilt
2. PV cell specifications, including cell efficiency
3. Module and array description, including module and array efficiency
4. System size (kW) and projected performance - specify model used including input parameters, assumptions (such as soiling, degradation, etc.) and limitations.
5. Software used for analysis (PVWatts; PowerClerk; SolarAnywhere; RETScreen; SAM, etc.)
6. Model de-rate factor used
7. Inverter information (capacity, manufacturer, warranty, etc.).
8. PV project site plan, including point of electrical connection
9. If battery storage is included, specify installation location, model, and capacity
10. Solar vendor guaranteed performance, including product warranty, decrease of power output warranty
11. Manufacturer's Statement of Guaranteed Useful Life
12. Maintenance requirements (for maintaining peak efficiency)

Financial Analysis (Please use DC PACE Solar PV Calculator template)

1. System total capital cost
2. REC credits/sale. Include anticipated REC pricing.
3. Potential excess electricity sale back to the grid (if applicable)
4. Potential annual revenues from RTO Demand Reduction and Frequency Regulation, if battery storage is included in system design.
5. Cost of inverter and battery replacement in appropriate year(s) over the guaranteed useful life of the system.
6. Annual cost of a maintenance contract with solar contractor to maintain system.
7. Cost for roof upgrade (if required)
8. Cost for building structural reinforcement to accommodate PV Solar (if required)
9. Building monthly energy savings analysis, any rate escalations, and savings degradation assumption

Commissioning, Measurement & Verification

1. Specify commissioning plan and metering equipment¹ and how the system performance will be monitored and verified:
 - a. Commissioning Schedule and Responsibilities

¹ DC SREC requirements: "Facilities less than 10 kW DC capacity are eligible to produce SRECs from estimated generation based on NREL's PV Watts solar resource calculator. All other facilities must report monthly readings. Systems larger than 10 kW require a revenue grade meter."

- b. M&V:
 - Method of Analysis
 - Accuracy
 - Responsibilities
 - Meter Specifications
 - Reporting Schedule
2. Annual Cost of full M&V activity for a minimum of 2 years post-installation
3. Cost of SREC monitoring, if applicable, beyond term of full monitoring period.