# Project Development Process

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<td>Identify Project Lead &amp; Convene Stakeholders</td>
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<td>Goal Setting</td>
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<td>Pre-Proposal Conference &amp; Site Visit</td>
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<td>Proposal Evaluation &amp; Comparison</td>
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<td>Contract Selection &amp; Negotiation</td>
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<td>Project Construction</td>
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<td>Project Commissioning &amp; Optimization</td>
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Solar Energy
Basic Solar Project Components

Illustrative Graphic of Simple Solar PV System
Municipal Solar Site Options

- Government Buildings (Administrative, public works etc.)
- Critical infrastructure (Police, Fire etc.)
- Municipal school buildings
- Parking lots/garages
- Brownfields/underutilized properties
- Municipal Airfields
How many sites do you estimate your municipality has for solar?
Why is identifying sites and collecting data important?

- Reduces total number of sites to only those that are technically feasible
- Avoids pursuing sites that will not ultimately result in an economic feasible project
- Some sites are better suited to achieve different goals
- Your RFP should only include sites that have passed an initial feasibility assessment
How does site data help a solar bidder?

• Site data helps identify:
  • a suitable location for the solar array
  • the site’s solar resource availability at the solar array location
  • the mounting method(s) for the array
  • where the balance of system components will be located
  • how the PV system will be interfaced with the site’s electrical infrastructure or interconnected to nearby transmission/distribution lines

• Site data informs bidders how to offer the best solution at the lowest cost
Site Data Collection

1. On the roof
2. Below the roof
3. In relation to the building

1. Inside fence line
2. Outside fence line
3. In relation to the site
Breakout Activity

- Divide yourselves into smaller groups
- Read your case study example
- Ideate a short list of site data/information for your site
- Report back to the group your ideas for site data collection
Site Data Element Examples

• Site Name
• Site Location
• Site Type
• Type of solar application (roof, ground etc.)
• Number of Building Stories
• Current Building Use
• Future Building Use – Site Use Changes
• Utility Provider
• Retail Rate name
• Retail Rate Schedule
• Site Usage/Consumption (kWh per month; per year)
• Electric Service Voltage to Site
• Electric Service Amperage to Site
• Electric Service Panel/Enclosure Amperage
• Estimated Distance of Electric Service Panel to Roof Area

• Site Building Plan / Architectural Drawing
• Site Plot Plan
• Site Electrical Line Drawing
• Type of Roof
• Year roof installed
• Roof Condition
• Roof Slop and Azimuth
• Roof Equipment
• Roof Access
• Roof Warranty
• Site Usable Acreage
• Soil & Sub Soil Type
• Shading
• Distance to Transmission/Distribution Lines
• Landfill Characteristics
## Tools and Resources

**EPA’s Solar Site Assessment and Utility Data Spreadsheet**


<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Contact Name</th>
<th>Phone No.</th>
<th>Email</th>
<th>Site Type</th>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>Zip</th>
<th>Current Use</th>
<th>Future/Expected Changes to Site</th>
<th>Solar PV</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td></td>
<td></td>
<td></td>
<td>Roof</td>
<td>1000 East Hillsdale Blvd</td>
<td>City</td>
<td>DC</td>
<td></td>
<td>Library / Community Center</td>
<td>None</td>
<td>X</td>
</tr>
<tr>
<td>Agency</td>
<td></td>
<td></td>
<td></td>
<td>Roof</td>
<td>540 Crespi Dr</td>
<td>City</td>
<td>MD</td>
<td></td>
<td>Community center - city recreation facility</td>
<td>None</td>
<td>X</td>
</tr>
<tr>
<td>Agency</td>
<td></td>
<td></td>
<td></td>
<td>Roof</td>
<td>2100 Mary Ave</td>
<td>City</td>
<td>MD</td>
<td></td>
<td>Fire Station</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>School District</td>
<td></td>
<td></td>
<td></td>
<td>Parking/Shade Structure</td>
<td>10555 Main St</td>
<td>City</td>
<td>VA</td>
<td></td>
<td>Fleet Parking Lot</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>School District</td>
<td></td>
<td></td>
<td></td>
<td>Roof</td>
<td>601 Chestnut St</td>
<td>City</td>
<td>DC</td>
<td></td>
<td>Office</td>
<td>N/A</td>
<td>X</td>
</tr>
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Electrical Service Enclosures

Work with your Facilities or Engineering departments to identify electrical service enclosures and their ratings

Your Home

Your Municipal Building
Roof Equipment

Feasible

Feasible?
Roof Access

Consider the number of stories of the building and the access points to the roof. Keep in mind the building’s intended use and whether access will need to be controlled to not interfere with the building’s operations. Consider safety issues for building occupants and solar developers alike.
Types of Roofing Materials

• Metal Panel
• Built Up Roofing/Tar & Gravel
• Asphalt
• Two-Ply Modified Bitumen
• Single-Ply Synthetic Membranes
• Others – seek input from facilities staff

• Roof age and condition are the most important attributes next to the structural integrity of the roof itself
Any additional architectural, electrical and structural drawings are helpful. Take photos of the proposed site.
Thanks!
Other Resources

• Utility Rate Schedule: https://openei.org/wiki/Utility_Rate_Database
• Net-Metering Size Limits: https://www.dsireusa.org/
• PVWatts: https://pvwatts.nrel.gov/