Learn what happens after a solar and energy storage contract is signed.
Meet Your Speakers

Nate Roberts  
Sr. Director, Development  
14+ years experience working in general construction and renewable energy development and construction. Oversees development and construction for all Distributed Generation assets in North America.

David Granlund  
Sr. Project Manager, Development  
4+ years experience developing solar for CA school districts, resulting in close to 50 MW of capacity across dozens of districts.

Casey Miller  
Director, Development  
14+ years experience working in renewable energy. Oversees development and construction for behind-the-meter projects in California.

Madeline Milani  
Marketing Manager  
Focus on expanding renewable energy beyond energy savings by impacting the classroom and indirect stakeholders.
Our goals for the webinar:

- Know the steps that a solar developer takes after contract signing.
- Understand information a solar developer might need to complete tasks.
- Learn how solar and storage integrate into your campus environment.
Webinar Outline

Introductions

*Case Study: Sample Project Schedule*

1. Post Contract: Finalizing Project Details and Engineering
2. Site Preparation: Title Reports, Real Estate Diligence, and CEQA Compliance
3. Utility: Interconnection Application and Approvals
4. Local Approvals: Permitting
Let’s look at a sample project schedule to orient ourselves to the development process.
Schedule: 2.8 MW Solar Parking Canopy

- (1) Post-Contract
- (2) Site Diligence
- (3) Interconnection
- (4) PV Design
- (5) Procurement

Construction

PTO and Commissioning
1. Post-Contract

“What? I thought all the details were done before the contract was signed!”
Congratulations! Now let’s begin the work.

- Kick-Off Meeting
- Introduce Project Team
- Gather Stakeholder Needs
- Review Project Schedule

SITE DILIGENCE
UTILITY INTERCONNECTION
PV + STORAGE DESIGN
EQUIPMENT PROCUREMENT
CONSTRUCTION
OPERATION
2. Site Diligence

“I didn’t realize that a solar project would need an environmental review.”
Schedule: 2.8 MW Solar Parking Canopy

| (1) Post-Contract | Oct-19 | Nov-19 | Dec-19 |
| (2) Site Diligence |       |        |        |
| (3) Interconnection |       |        |        |
| (4) PV Design |       |        |        |
| (5) Procurement |       |        |        |
| Construction |       |        |        |
| PTO and Commissioning |       |        |        |
Real Estate, Survey, Subsurface Conditions, and More

- Title Reports and Real Estate Diligence // Fatal Flaw analysis // easements, encroachments, title report exceptions
- Beware of SNDAs, Quit Claims, Encroachment Permits, Easements that impact system layout and necessitate the need to rearrange system siting, and assessments/liens.
- Verify property owner and vesting of title.
- Boundary Survey, easement plotting/title exception plotting, underground utility location and plotting
- Survey/Mapping
- ESA Phase I, (Environmental Site Assessment)
- Geotechnical Analysis
- Detailed POCC analysis on site, (remove dead fronts of switchgear)
- ADA site analysis
- FAA case submission
- School District creates DIR number
CEQA Compliance

- Identify the Lead Agency; identify the scope
- Other Conditional Permitting
3. Interconnection

“Wow, does it really take that long?”
Schedule: 2.8 MW Solar Parking Canopy

(1) Post-Contract
(2) Site Diligence
(3) Interconnection
(4) PV Design
(5) Procurement
Construction
PTO and Commissioning
## Interconnection Approval

<table>
<thead>
<tr>
<th>Interconnection Step</th>
<th>Duration in business days (Over 1 MW) - Assumes telemetry or other upgrades</th>
<th>Duration in business days (Under 1 MW) - Assumes no Upgrades</th>
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</thead>
<tbody>
<tr>
<td>Application Submitted</td>
<td>1 Day</td>
<td>1 Day</td>
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<td>Application Review Period</td>
<td>20 Days</td>
<td>15-20 Days</td>
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<td>Supplemental Review</td>
<td>20 Days</td>
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<td>Detailed Study</td>
<td>60 Days</td>
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<tr>
<td>Upgrades Scope and Cost Determined (if applicable)</td>
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<td>Utility Engineering of Required Upgrades</td>
<td>4-6 Months</td>
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<tr>
<td>Utility Procurement</td>
<td>3-6 Months</td>
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<tr>
<td>Utility Installation of Upgrades</td>
<td>1-2 Weeks</td>
<td>-</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>12 to 18 Months</strong></td>
<td><strong>15-20 days</strong></td>
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4. PV Design

It’s time to finalize the design for construction now that site details and interconnection requirements are completed.
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An Iterative Approach to PV Design

Each iterative step of the PV design process is used for various milestones of the solar development process.
Permitting

- School District employs the IOR/SOR
- School District provides facility record drawings, including site plan with all existing DSA A#’s.
- 50% Designs and allow for customer review and comment, (though design burden remains solely with system owner)
- 90% Designs and allow for customer comment.
- School District creates Office of Public School Construction (OPSC) Project Tracking Number (PTN).
- California Geological Survey (CGS) submission (if applicable).
- Local AHJ FLS review
- Permit submittal, (often times DSA Over The Counter Permits)
- DSA Forms
- DSA Box Site
- DSA A#
- Ground Mounts and DSA permit exemptions, (IR16-8/IR17-5/IR A-22)
5. Procurement

Timing equipment purchases to ensure Federal ITC compliance.
Schedule: 2.8 MW Solar Parking Canopy

- **(1) Post-Contract**
- **(2) Site Diligence**
- **(3) Interconnection**
- **(4) PV Design**
- **(5) Procurement**
  - Construction
  - PTO and Commissioning
What equipment is needed?

<table>
<thead>
<tr>
<th>Steel</th>
<th>Modules &amp; Inverters</th>
<th>Electrical Components</th>
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<tbody>
<tr>
<td>• Canopy steel procurement</td>
<td>• “Safe harbor” modules to ensure Federal 30% investment tax credit compliance.</td>
<td>• Transformers</td>
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<tr>
<td>• Fabrication of any custom equipment</td>
<td>• Inverters</td>
<td>• Switchgear</td>
</tr>
<tr>
<td></td>
<td>• “Balance of System” (BOS) equipment</td>
<td>• Energy Storage</td>
</tr>
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</table>

*ForeFront Power procures equipment and ships to our local warehouse. Our installation teams then bring to the site as needed.*
Let’s revisit our goals for the webinar.

• Know the steps that a solar developer takes after contract signing.
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Questions?

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Thank you