

Interconnection Panel

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Overview of Generation Interconnection Process (GIP)



- **Transmission Level Interconnections**

- Governed by CAISO Tariff.
 - Generally for 220 kV and higher.
 - All applications must be submitted to the CAISO.
 - CAISO administers its tariff, which is approved by FERC.

- **Distribution Level Interconnections**

- Governed by SCE's WDAT.
 - Generally below 220 kV.
 - All applications must be submitted to SCE.
 - SCE administers its tariff, which is approved by FERC.



Why Are Interconnection Agreements and Processes Required?

Interconnection agreements are critically important to continued safe and reliable operation of the electrical grid



Safety

- Uncontrolled energy can be harmful to both equipment and people.
- California Title 8 (Safety code) requires coordination with the utility.

Stability and reliability

- Generators impact grid operations and system planning.
 - Congestion and power flow management
 - Voltage regulation

Equality in access for all parties

- Small independent generators
- Large commercial and wholesale generators

Determination of cost responsibility

- Costs for network upgrades are shared where possible to minimize individual cost impacts.
- Cost of upgrades unique to a specific project only, must be borne by the individual requestor.

Compliance

- Multiple regulatory bodies involved.
 - Federal Energy Regulatory Commission (FERC), California Public Utilities Commission (CPUC), California Independent System Operator (CAISO), California Energy Commission (CEC), Southern California Edison (SCE)

Federal Agencies Involved

- United States Forest Service
 - 1 small photovoltaic project
 - 1 small renewable project exporting energy under contract to SCE
- National Park Service
 - 24 small photovoltaic projects
- Veterans Affairs
 - 6 renewable generation projects of varying sizes



Terms Contained Within Several Forms of Interconnection Agreements

- Term of the Agreement
 - Length of agreement not typically specified
- Indemnity and Liability
 - Since the generating facilities are most commonly connected to the utility grid, IOUs generally require protection of some form to protect employees, equipment and other ratepayers
- Governing Law Provisions
 - Investor Owned Utilities regulated by the State in which they operate



How were these issues resolved?

- Negotiated a new form (Exhibit D) to the GSA Areawide Agreement specifically for IOU tariffs
- Filed deviations to SCE tariffs for the Federal Government Only
 - Included references to the GSA Areawide Agreement include a reference to a new Exhibit D
 - Identified 10-year term of the Agreement
 - Retained Liability provisions, however, deleted Indemnification provisions in recognition of the agencies' claim that federal law prohibits federal agencies from agreeing to indemnification contrary to requirements in the federal Anti-Deficiency Act, 31 U.S.C. § 1341.
 - Revised Governing Law language that reflects that tariffed electric services are subject to the jurisdiction and regulation by the California Public Utilities Commission



Questions?

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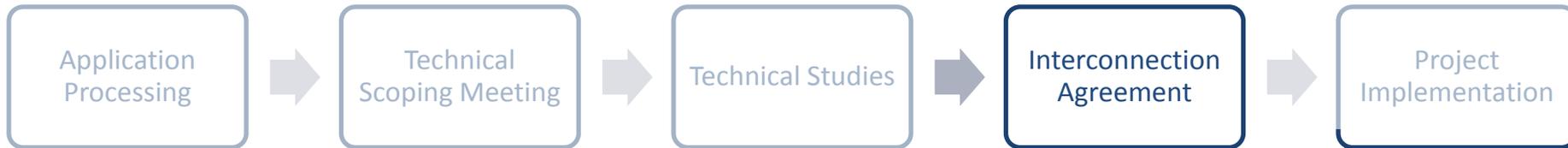
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BACKGROUND



Interconnection Agreement



- Interconnection agreement negotiations commence following completion of studies or successful eligibility for Fast Track status.
- An Interconnection agreement is a contract that sets forth the requirements for interconnection, including:
 - Estimated cost and schedule
 - Defines the network upgrades, distribution upgrades, and interconnection facilities to be constructed
 - Identifies major milestones
 - Defines the point of interconnection
 - Specifies the required financial obligations
- Interconnection agreements **do not contain**:
 - Provisions for power procurement
 - Generation tie-lines
 - Access to SCE rights-of-way
- Interconnection agreements are executed by all parties and filed for acceptance by FERC.
- Can be filed unexecuted.



Critical Customer Decisions Before Submission of Application

Interconnection projects vary greatly. Customers must be clear on their Power Sales Strategy before proceeding. This information will affect whether the customer pursues the interconnection process under CPUC Rule 21, FERC WDAT, or FERC TOT.

- Will the project export energy, or be 100% self-consuming?
 - If export:
 - Wholesale or utility program?
 - Energy only, full deliverability, capacity market, ancillary services market?
 - If self-consume:
 - Parallel or non-parallel/back-up?
- What size and generation technology is each project?
 - Size
 - Program limitations may apply, depending on plans to sell power (CREST, NEM)
 - Monitoring and control requirements may apply (telemetry).
 - Location matters (siting and environmental impact requirements)
 - Generator technology type
 - Program restrictions may apply
 - Monitoring and control requirements may apply
- Location of Interconnection
 - Transmission versus distribution connection
 - Congestion management (automatic or operational conditions)
 - Cost responsibilities can vary greatly, due to location of interconnection
 - Fault duty, protection schemes
 - Stability considerations

