Generator Interconnection 101 Presentation

SDG&E's Generator Interconnection Process Overview

As of October 2026 – includes WDAT revisions approved by FERC in September 2026

I have an idea for a project….



- Welcome to Generation Interconnection 101
- This presentation is a general overview geared to assist customers (you) to prepare interconnection requests to SDG&E's electrical system
- We seek to inform you, the end customer, on items such as
  - What kind of system can I install?
  - How does it interface with SDG&E's system (i.e., export, non-export)
  - How do I apply for interconnection?
  - How will I get paid for my system's output?
  - Where can I get information on SDG&E's electrical system before I apply?
  - What can I expect as far as application fees, interconnection facilities and upgrades charges, interconnection agreements, off-take agreements, etc.?
  - What are the rules/procedures and where can I get more information?
  - How long will this all take?

Purpose, Contents, and Objectives



- SDG&E seeks to provide a high-level overview of SDG&E's various interconnection processes, with references and links to rules and interconnection procedures for the various ways you can interconnect generation to SDG&E's distribution and transmission systems.
- This information is categorized into four sections
  1. Types of Interconnection Projects
  2. Interconnection Rules and Procedures (aka Tariffs)
  3. The Interconnection Study and other Processes (what it costs and how long it will all take)
  4. Frequently Asked Questions (FAQs)
- The objective of this presentation is to provide helpful information to customers and developers of generation and energy storage projects that seek to interconnect their resources to the SDG&E electrical system.
- In this presentation, the term "project" can refer to any generation or energy storage facility (and the associated assets) that is proposed to interconnect to SDG&E's electrical system.

Key Terms, Definitions, Acronyms

- Inevitably, a complex process like generator interconnection has lots of jargon associated with it, here are some key terms that we will refer to in this document
  - Interconnection Customer – you, the project developer
  - Export – the generating facility feeds SDG&E's electrical grid beyond the point of interconnection
  - Non-export – the generating facility feeds local load (typically behind the customer meter) and is prohibited from exporting to feed SDG&E's grid
  - Point of Interconnection – the point at which the generating facility connects to SDG&E's grid (also called the point of common coupling)
  - Point of Change of Ownership – the point which demarcates the customer owned facilities from SDG&E owned facilities
  - WDAT – Wholesale Distribution Access Tariff – the set of rules and procedures for interconnecting wholesale generating facilities to SDG&E's distribution system
  - CAISO – California Independent System Operator – the system operator of the transmission system in most of California and parts of Nevada
  - NEM and NBT – Net Energy Metering (now called Net Billing Tariff) where an eligible generating facility offsets energy use of the end customer via billing credits
  - Permission to Operate (PTO) – when all facilities are installed, tested, and declared ready for service, SDG&E will issue the customer a PTO
  - Distribution system – SDG&E's "last mile" network serving neighborhoods and businesses, controlled by SDG&E
  - Transmission system – SDG&E's "bulk power" network, controlled by the CAISO

1. Types of Interconnection Requests/Projects

Types of Interconnection Projects – Exporting and Non-exporting

Self-Generation Systems

For Export (to SDG&E grid) and Non-export (serving local energy needs only)

- Export projects sometimes referred to as “In Front of the Meter” (IFOM)
- Non-export projects sometimes referred to as “Behind the Meter” (BTM)

Example: Residential rooftop solar/PV sometimes paired with energy storage under the Net Billing Tariff (NBT) program is a typical BTM project

Backup/Emergency Power Systems

Non-export and inadvertent (seconds/minutes) export

Example: Emergency backup generator (2 types, parallel systems or isolated from grid)

Systems for Power Sales

Export only

Example: Utility-scale wind or solar farm with energy storage

Self-Generation Programs: Exporting

Self-generation allows SDG&E customers to produce electricity using equipment they (or a third party) own and operate to meet some or all of their local energy needs. If such systems are exporting energy to SDG&E's grid, they operate in parallel with the grid and are allowed to export energy to SDG&E under specific procurement program requirements.

- Common self-generation programs include the following:
  - **Net Billing Tariff** (NBT)

    Also referred to as the Solar Billing Plan (SBP)
    - NBT is based on the time-of-use (TOU) pricing structure where the price of electricity used (imported) and sent back (exported) to the grid varies depending on the time of the day.
    - Credits are applied for any surplus energy put back to the power grid. The Energy Export Credit (EEC) received is based on the value of kilowatt-hours sent to the electric grid at each hour of the day.
    - More information on NBT can be found at the following link: Solar Billing Plan | San Diego Gas & Electric
    - Online application for NBT systems can be found at the following link: Net Energy Metering | San Diego Gas & Electric
  - **Renewable Energy Self-Generation Bill Credit Transfer** (RES-BCT)
    - RES-BCT allows eligible local governments and campuses to receive credits to one or more "benefitting accounts" for surplus electricity delivered to SDG&E's grid from owned Renewable Electrical Generation Facilities and is optionally available on a first-come-first-served basis.
    - The generating facilities do not need to be co-located with the benefitting accounts.
    - RES-BCT participants are ineligible for service under NEM/NBT.
    - More information on RES-BCT can be found at the following link: https://www.sdge.com/more-information/customer-generation/electric-rule-21

Note: Please consult with your local Authority Having Jurisdiction (AHJ) regarding any permitting requirements for such systems. SDG&E does not provide permitting services.

Self-Generation Systems: Non-Exporting



Non-exporting systems are designed to only offset local energy needs, and as a result the non-exporting system will have controls (typically built into the inverter) to prevent the export of energy onto SDG&E's system.

A common form of these type of systems would be a behind-the-meter energy storage system.

These systems can also include the following:

- Co-Generation
- Emergency/Backup
  - Emergency/Backup systems typically qualify for inadvertent export (a few seconds/minutes per year) and such exports are non-compensated by SDG&E.
- Standby generation systems.

Online application for non-exporting systems can be found at the following link: SDGE Rule 21 - Online Application

Additional information on self-generation programs can be found at the following link: SDGE Electric Rule 21

Note: Please consult with your local Authority Having Jurisdiction (AHJ) regarding any permits required for such systems. SDG&E does not provide permitting services.

Emergency and Backup Systems



Emergency and backup power systems are used by customers to serve part or all of their electrical needs during a power outage. These systems are not designed to operate in parallel with SD&GE's system. They may operate in one of two modes:

1) Momentary Parallel Mode (also referred to as Inadvertent Export):
   - A backup generator that interconnects and operates in parallel with SDG&E's electrical system for a very short duration of time (typically one second or less) via a transfer switch or other control systems designed for momentary parallel mode
2) Isolated Mode (also called Back Up Generator [BUG] Mode):
   - A backup generator that will be isolated from SG&E's electrical system and is prevented from ever operating in parallel via a transfer switch or other control systems designed to prevent parallel operation
   - For either mode, application is made via submitting an online non-export interconnection request at the following link: SDGE Rule 21 - Online Application

More information on non-exporting systems can be found at the following link: SDGE Electric Rule 21

Additional information on backup generating systems can be found at the following link: SDGE Resiliency Project Engagement Guide

Note: please consult with your local Authority Having Jurisdiction (AHJ) regarding any permits required for such systems. SDG&E does not provide permitting services.

Systems for Power Sales

Generation and energy storage facilities that are intending to sell energy and/or capacity to SDG&E, or 3rd parties, or to the CAISO market are required to request interconnection under one of the three interconnection procedures. The Interconnection Customer choses one of the three procedures depending on how the facility is being proposed to interconnect (point of interconnection) and to whom will the output be sold (off-taker).

- **CAISO:** Interconnection to the transmission system and participating in the CAISO market require application to the CAISO interconnection process and separately an application to the CAISO New Resource Interconnection (NRI) process.
  - A link to the CAISO interconnection process can be found here: California ISO - Generator interconnection (caiso.com)
- **Wholesale Distribution Access Tariff (WDAT)**: interconnection to SDG&E's distribution system and participating in the CAISO market require application to SDG&E under the WDAT, and separately an application to the CAISO New Resource Interconnection (NRI) process.
  - A link to the WDAT interconnection process can be found here: Customer Generation | San Diego Gas & Electric (sdge.com) and email box for application is WDATApplications@sdge.com
  - An online application portal for WDAT has recently been added here Net Energy Metering | San Diego Gas & Electric
- **Rule 21**: interconnection to SDG&E's distribution system and selling output to SDG&E or other California Load-Serving Entity (LSE) under a CPUC-approved procurement program.
  - A link to the Rule 21 interconnection process can be found here: Electric Rule 21 | San Diego Gas & Electric (sdge.com) and online application can be made here: SDGE Rule 21 - Online Application

Note: please consult with your local Authority Having Jurisdiction (AHJ) regarding any permits required for such systems. SDG&E does not provide permitting services.

Systems for Power Sales – basic information on off taker arrangements

Off-taker arrangements, also referred to as Power Purchase Agreements (PPAs), are handled by a separate procurement organization within SDG&E, as required by FERC rules. As such, only basic information regarding the types of off-taker arrangements is included herein. Types of off-taker arrangements can be further broken down as follows:

- **Selling at wholesale to any off-taker (including SDG&E) in the CAISO market:**
  - From an interconnection standpoint, either a CAISO interconnection or WDAT interconnection process can be followed.
  - Information on SDG&E's procurement for wholesale energy and capacity products can be found here: Procurement | San Diego Gas & Electric (sdge.com)
- **Selling to a 3rd party off-taker on a bi-lateral basis:**
  - Off-taker arrangements can be negotiated on a bi-lateral basis with non-utility bulk power purchasers or other parties (example: Amazon Web Services)
  - From an interconnection standpoint, either a CAISO interconnection or WDAT interconnection process can be followed
- **Selling to SDG&E under a CPUC-approved procurement program or feed-in tariff**:
  - From an interconnection standpoint, Rule 21 must be followed for CPUC-approved procurement programs.
  - Various procurement programs and feed-in tariffs can exist at any point in time, please see the following link for more information about CPUC-approved procurement programs: Procurement | San Diego Gas & Electric (sdge.com)

2. Rules and Interconnection Procedures = TARIFFS

Which set of rules/procedures, which tariff do I follow?

Interconnecting to Transmission = CAISO

High-voltage, bulk power system controlled by the CAISO, 69 kV and higher voltage

Interconnecting to Distribution and Selling Wholesale = WDAT

Low-voltage, local distribution facilities: 4kV, 12kV
Export (only)

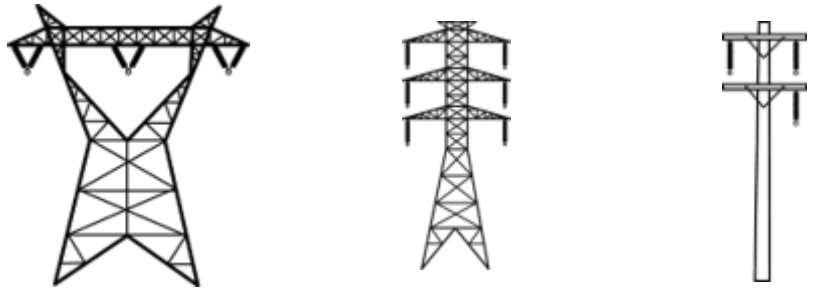
Interconnecting to Distribution and Selling to SDG&E (or other California LSE) = Rule 21

Low-voltage, local distribution facilities: 4kV, 12kV
Export and non-export

Typical Size of Projects (MW) depends on the voltage of the requested Point of Interconnection

Transmission

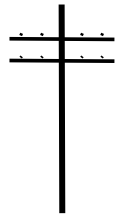
69 kV typical max capacity = 100 MW
230 kV and 500 kV typical max capacity = 1150 MW (n-1)



Representative 500 kV, 230 kV, and 69 kV structures

Distribution:

4 kV: 2-3 MW typical max capacity per feeder (if no other generation present)
12 kV: 10 MW typical max capacity per feeder (if no other generation present)



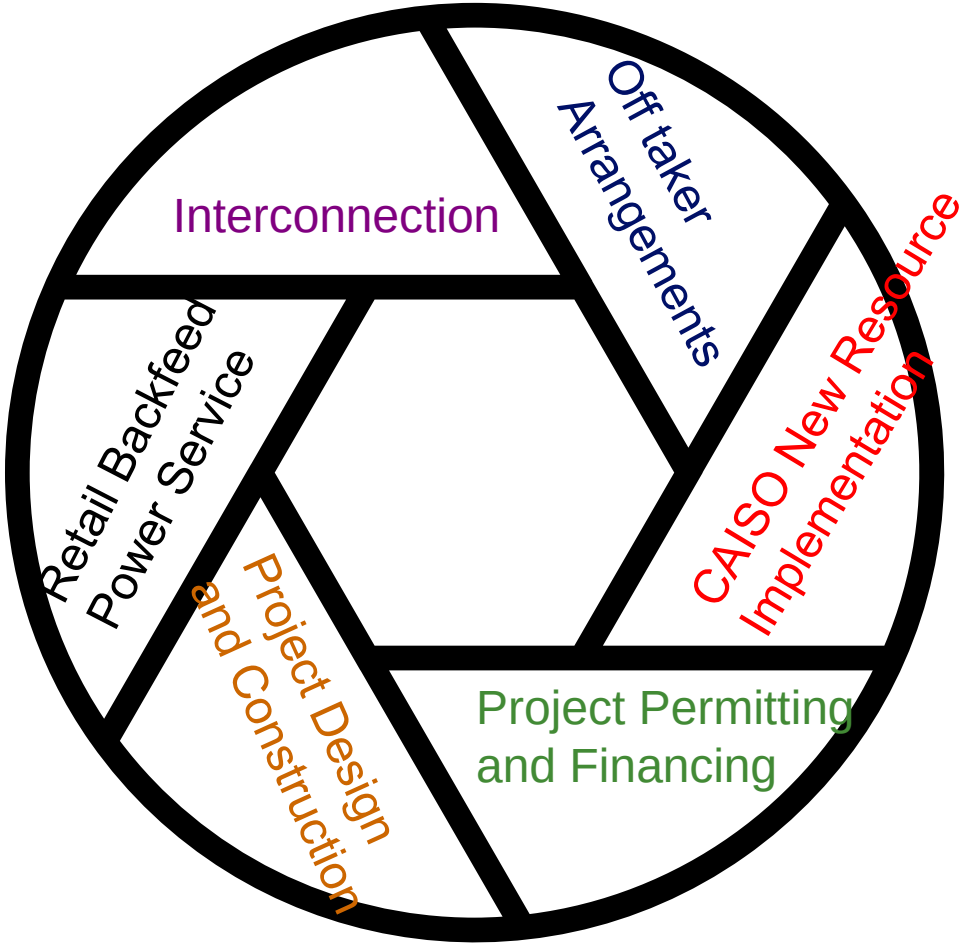
Representative 4kv or 12 kV structure

Specific Interconnection Forms



- **CAISO Resource Interconnection Standards (RIS)**:
  - Online interconnection request system (called GRIP) Grid Resource Interconnection Portal (GRIP) | California ISO
  - Interconnection Procedures are Appendix KK to the CAISO Tariff appendix-kk-resource-interconnection-standards-as-of-aug-05-2026.pdf)
- **WDAT Generator Interconnection Procedures (GIP):**
  - Email the interconnection request form to WDATAPPLICATIONS@sdge.com
  - Interconnection Procedures are Attachment I to the WDAT Tariff Wholesale Generator Transmission Interconnections | San Diego Gas & Electric (sdge.com)
    - ▶ Online interconnection request portal: https://diisq.sdge.com/DIIS
- **Rule 21:** https://www.sdge.com/more-information/customer-generation/electric-rule-21
  - Online interconnection request forms: SDGE Rule 21 - Online Application
    - ▶ NBT Forms
      - 30 kW or Less: Form 142-02777
      - Greater than 30 kW: Form 142-02778
    - ▶ Export and Non-Export
      - Form 142-05203

Interconnection is only one of many processes required to achieve a successful project



3. Interconnection Study Processes (includes the revised WDAT procedures approved in September 2026)

Screens vs. Studies (as of October 2026)

- The information in this section is provided with the intent to assist understanding of the interconnection procedures. Each tariff has slight variations and different qualifications for each study process track. Please consult the specific tariff for specific details.
- Fast Track Process (Screens):
  - Each of the 3 tariffs (CAISO, WDAT, and Rule 21) has a Fast Track process, which as the name suggests, allows eligible projects that pass the Fast Track screens to move more quickly towards an interconnection agreement than projects which require a detailed study.
- Detailed Study Process (Studies):
  - Detailed Study for both WDAT and CAISO is the Cluster Study Process.
    - Both the WDAT and CAISO employ the cluster study process, whereby a cluster application window is opened each year, and projects are placed into study groups of electrically-related areas for purposes of studying the aggregate impact of the projects and allocating any required facilities or upgrades to the group, along with any specific facilities required for each individual project.
  - Rule 21 has a Distribution Group Study which is similar in many ways to the Cluster Study Process.

Fast Track Process Steps

- Application Intake and Processing
  - SDG&E receives and reviews the interconnection request and all required technical data
  - Key components of the request include the site plan and single-line diagram which is required to be stamped by a Professional Engineer (PE)
  - Review of site control documentation
  - Distribution Service is separately applied for
- Required Study Fee/Deposit
  - Rule 21: $800 fee
  - WDAT: application fee of $500 and Initial Review fee of $1,000
  - CAISO: $500 fee
- SDG&E sends the Interconnection Customer a Deficiency Notice if there are deficiencies in the IR that need to be cured before the Initial Review can commence
- Once an IR is deemed “complete and valid”, the interconnection request is assigned a queue position and date, and SDG&E will move to the Initial Review step (next slide)

Fast Track Process Steps (cont'd)

- Initial Review
  - SDG&E evaluates the project through the Initial Review screens (Rule 21 refers to these by letters – Screen A thru Screen M)
  - SDG&E issues the results of the Initial Review to the customer within 15 Business Days of a complete and valid interconnection request
- Initial Review Pass
  - SDG&E will issue results to the customer within 15 Business Days of the Initial Review
- Initial Review Fails
  - SDG&E will hold a Customer Options Meeting with the customer to determine next steps, which can include
    - Any proposed modifications to the project or to SDG&E's system that might lead to passing of Initial Review
    - Continue to Supplemental Review (next slide)
    - Cluster Study Process (which will require the withdrawal of the Fast Track interconnection request and re-application to the Cluster Study Process)
    - Withdraw of the interconnection request
- Supplemental Review
  - Additional fee of $2,500 for Rule 21, a fee of $2,500 WDAT or an estimated deposit (amount to be determined) for CAISO

Fast Track Process Steps (cont'd)

- Supplemental Review
  - SDG&E performs additional Supplemental Review screens
  - SDG&E issues results to customer and holds optional Supplemental Review Results Meeting to discuss results with the customer and next steps
- Supplemental Review Pass
  - SDG&E will issue the results to the customer within15 Business Days of the Supplemental Review results
- Supplemental Review Fails
  - SDG&E will hold a Supplemental Review Results Meeting with the customer to determine which next steps, which can include
    - Any proposed modifications to the project or to SDG&E's system that might lead to passing of Supplemental Review
    - Withdrawal and re-application to the Cluster Study Process
    - Withdraw of the interconnection request

Fast Track Process Steps (cont'd)

- Interconnection Agreement negotiation and finalization
  - The Generation Interconnection Agreement (GIA) sets forth the following in contractual form
    - The scope of required facilities and upgrades, which might include
      - Interconnection Facilities
      - Distribution Upgrades (if any)
      - Network Upgrades (if any)
    - Operational Requirements
    - Financial responsibility/cost of such facilities and upgrades
    - Ball-park duration of construction of such facilities and upgrades (subject to change in detailed design and engineering that only commences once an Interconnection Agreement is signed)
    - Taxes, financial security, insurance, milestones, and other important contractual information
  - After completing negotiations, the Interconnection Agreements are signed by each party
  - If parties cannot agree on all points, and are at an impasse, under the WDAT or CAISO procedures, the customer can request the GIA be filed unexecuted at FERC
- Project Implementation
  - All milestones for construction and project commissioning are clearly identified in the Interconnection Agreement
  - Among the milestones are the in-service date, permission to operate date, and commercial operations dates

Detailed Study Process (WDAT Cluster Process) Steps

- Cluster Application Window: September 11 – September 25 each year (with notice of any different window on SDG&E interconnection website)
- Application Intake and Processing
  - SDG&E receives and reviews the interconnection request and all required technical data, including the following:
    - site plan and single-line diagram which is required to be stamped by a Professional Engineer (PE)
    - Site control documentation, or receipt of site control deposit
    - Generating facility capacity
    - Operating Assumptions for storage facilities (if any)
  - Distribution Service is separately applied for
- Required Fee/Study Deposit
  - WDAT: Interconnection Request fee of $5,000, Study Deposit of $35,000 plus $1,000/MW
- SDG&E sends the IC a Deficiency Notice if there are deficiencies in the IR that need to be cured before the an Interconnection Study can commence
- Once an IR is deemed “complete and valid”, the interconnection request is assigned a queue position and date, and SDG&E will hold a Scoping Meeting (next slide) with the customer

Detailed Study Process Steps (cont'd)

- WDAT projects seeking any amount of deliverability from CAISO are required to submit separate application for deliverability to CAISO during its October 1 – October 15 cluster application window
  - WDAT projects will be screened by CAISO along with all other CAISO interconnection requests to determine which projects are eligible to be studied
  - WDAT projects declared eligible by CAISO for study are required to post a Commercial Readiness Deposit and execute the cluster study agreement prior to the close of the Customer Engagement Window (90 days after cluster application window)
- Group Scoping Meeting
  - Requires an NDA/Confidentiality agreement
  - All interconnection requests hold a group scoping meeting simultaneously
  - Outline the study steps and timeline to get study results
- Cluster Study Process:
  - SDG&E, in consultation with CAISO, performs the Cluster Study, followed by a Facilities Study the following year
  - Projects are grouped for aggregate impact as well as allocation of costs of upgrades (still assigned individual Interconnection Facilities)
- Study Results Meetings
  - Opportunity to discuss each project's individual and/or group study results, which include the scope, cost, and durations and feasible commercial operations dates of any required facilities or upgrades

Detailed Study Process Steps (cont'd)

- Interconnection Agreement negotiation and finalization
  - The Interconnection Agreement (often referred to as a GIA) sets forth the following in contractual form
    - The scope of required facilities and upgrades, which might include
      - Interconnection Facilities
      - Distribution Upgrades
      - Network Upgrades
      - Operational Requirements
    - Financial responsibility/cost of such facilities and upgrades
    - Ball-park duration of construction of such facilities and upgrades (subject to detailed design and engineering that only commences once an Interconnection Agreement is signed)
    - Taxes, financial security, insurance, milestones, and other important contractual information
  - After completing negotiations, the Interconnection Agreements are signed by each party
  - If parties cannot agree on all points, and are at an impasse, under the WDAT or CAISO procedures, the customer can request the GIA be filed unexecuted at FERC
- Project Implementation
  - Once an Interconnection Agreement is signed, SDG&E holds a project "kickoff" meeting with customer and regular project meetings as construction commences
  - All milestones for construction and project commissioning are clearly identified in the Interconnection Agreement
  - Among the milestones are the in-service date, permission to operate date, and commercial operations dates

How Long does this all Take?



- High-level timelines from application to Commercial Operation Date (COD):
  - Fast Track – time required from application to COD: several months to one-two years, depending on the type of interconnection facilities and/or upgrades are required and the construction duration of the facilities
  - Cluster Study Process – time required from application to COD: several years depending on construction duration of any facilities and/or upgrades

Frequently Asked Questions (FAQs)

What Generation Equipment Should I Use?



- The project owner/developer determines the equipment to be used and design of the facility
- There are a few lists of approved equipment, such as inverters and control systems, that developers can use to expedite the technical review of the project (for Rule 21 and WDAT, the pre-approved equipment list is imbedded into the interconnection portal)
- Developers should include as much technical detail about the equipment and site plans, single-line diagrams, operating assumptions, control systems, etc. and site control documentation as possible in the interconnection request

Where Should I Locate My Project?



- Location is an important consideration in the interconnection process, often the most important consideration
- System constraints, such as areas of existing (or earlier-queued) generation may impact the cost and timing of your interconnection
- Sizing to Fast Track limits (such as 3 MW on 12 kV) can lead to better success at passing the Fast Track screens
- SDG&E's Integrated Capacity Analysis (ICA) maps provide key information as to available capacity on distribution feeders but do not obviate the need for Fast Track screens or a detailed study. A customer can access the ICA maps using the following link Integration Capacity Analysis (ICA) | San Diego Gas & Electric
- WDAT Interconnection Customers can request SDG&E provide them with a pre-application report (PAR) for a minimal fee ($300) which can provide important pre-application information to the customer
- The PAR provides:
  - Total capacity (in MW) at the substation bus
  - Approximate circuit distance between the proposed project site and the substation
  - Relevant line section(s) peak line load estimates
  - Number of protective devices and voltage-regulating devices between the proposed site and the substation
  - Whether or not three-phase power is available at the site
  - The limiting conductor rating from the proposed POI to the nearest substation

How Do I Participate in the CAISO Market?

- CAISO New Resource Implementation (NRI) process is outlined at the following link: California ISO - New Resource Implementation (caiso.com)
- SDG&E encourages developers to become familiar with the NRI process since CAISO requires notice at least 210 days (or longer) prior to achieving commercial operations and selling to the market

Where is SDG&E's Generation Interconnection website?

- Customer Generation | San Diego Gas & Electric (sdge.com)

How Do I Contact the Interconnection Team?

- Customer Generation Group voice mail box: 858-636-5585
- Customer Generation Q&A email box: Netmetering@sdge.com

- Rule 21 Interconnection Requests and Q&A email box:
- DGInquiries@semprautilities.com
- DGapplications@semprautilities.com

- WDAT Interconnection Requests and Q&A email box: WDATAPPLICATIONS@sdge.com