

**-BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking on the  
Commission’s Own Motion to  
improve distribution level  
interconnection rules and regulations  
for certain classes of electric  
generators and electric storage resources.

Rulemaking 11-09-011  
(Filed April 7, 2021)

**COMMENTS OF  
THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION  
ON PETITION FOR MODIFICATION**

**I. Introduction**

The California Independent System Operator Corporation (“CAISO”) hereby provides responses to the Administrative Law Judge’s questions issued on November 23, 2021. The CAISO fully supports the Commission’s efforts to examine the impact of large and transmission-connected resources interconnecting under Rule 21 and participating under net energy metering (“NEM”) tariffs.<sup>1</sup> These resources can have a significant impact on reliability and the wholesale markets. As such resources proliferate, their use of Rule 21 to interconnect and their participation under NEM tariffs warrant the Commission’s review.

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<sup>1</sup> The CAISO uses the term “resource” or “generator” for simplicity to refer to all supply resources, including conventional generation, variable energy resources, energy storage resources, etc., and excluding demand response resource or energy efficiency programs that do not export energy to the grid.

## II. Responses

*1. Does transmission interconnection of net energy metering systems via Rule 21 threaten the California Independent System Operator's (CAISO's) ability to maintain transmission grid safety and reliability? If it does, provide the details of any issues these systems raise.*

As currently written, Rule 21 does not subject NEM resources to requirements sufficient for the CAISO to ensure safety and reliability without significant, unnecessary challenges. As the CAISO described in its April 23, 2021 comments, large resources participating under NEM tariffs create their own set of unique operational challenges. To participate under a NEM tariff a resource must be a net consumer over the relevant billing period, which in many cases is a full calendar year. But the CAISO has observed that many of these resources are very large solar PV arrays co-located with smaller loads. Although the customer's demand may barely exceed its generation over the year, this is true because the demand runs all day and all night. But during the day the generation can significantly exceed onsite demand, causing the generator to export large amounts of energy every day from sunrise to sunset. Because the generator participates under a NEM tariff, the CAISO has no forecasting, telemetry, or metering regarding its operation. This means the generator itself is invisible to the CAISO even though it is using transmission capacity, affecting system frequency, changing line flows, and impacting the deliverability of other generators. Moreover, a NEM resource does not have a scheduling coordinator the CAISO can contact in the event of a potential reliability issue caused by its production. Where the CAISO could ask a wholesale resource to operate at a precise dispatch target to maintain reliability, the CAISO has almost no recourse with NEM resources. In the event of a reliability issue, the CAISO would be forced to issue dispatch instructions to nearby wholesale generation and load, or open the breaker where

the NEM resource interconnects, thereby islanding both the NEM generator and all load at that point of interconnection.

*2. Does transmission interconnection of non-exporting systems via Rule 21 threaten CAISO's ability to maintain transmission grid safety and reliability? If it does, provide the details of any issues these systems raise.*

Although non-exporting resources generally would not present threats as significant as exporting resources, they can still challenge the CAISO's ability to maintain transmission safety and reliability. The issue, however, is not whether resources interconnect via Rule 21 or via the CAISO tariff; the issue is that Rule 21 currently does not require NEM resources directly interconnected to the transmission grid to provide the CAISO any information or data *once online* to help maintain reliability, or any means to control the generation even in the case of reliability issues. For example, the vast majority of NEM resources are solar PV resources. Unlike CAISO participating generators, the CAISO does not receive telemetry or meteorological data from solar NEM resources. In fact, the CAISO does not know the NEM resources are there. The CAISO merely sees them as less demand in one area. But that demand reduction is entirely dependent on solar radiation. In the event of sudden cloud cover, the solar NEM resources cease to produce energy, and the demand will instantly return, affecting line flows and frequency. The CAISO mitigates this risk for CAISO participating generators by modeling their location and requiring them to provide instantaneous meteorological data and telemetry. Large CAISO resources also have specific equipment requirements to help maintain frequency in the event of a contingency.<sup>2</sup> But the CAISO has no recourse with NEM resources even when they are large and directly connected to the

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<sup>2</sup> See Section 9.6.4 of Appendix EE to the CAISO tariff.

CAISO controlled grid. The CAISO can only call on nearby participating generators or load to maintain frequency or otherwise mitigate a reliability event caused or exacerbated by the presence of NEM resources.

*3. For what specific operational purpose does CAISO use four-second telemetry data? Why is a less temporally granular telemetry data stream (e.g., 15-minute granularity) not sufficient for maintaining transmission grid safety and reliability?*

To maintain reliability, the CAISO must balance electric demand and supply at all times.<sup>3</sup> Hence the term “balancing authority.” If unbalanced, the frequency of the grid will deviate from the 60 Hz all electric equipment is designed to work on.<sup>4</sup> If the frequency deviates too far from 60 Hz, generators, substation equipment, and load resources will protect themselves by islanding from the grid, generally by opening circuit breakers. This is how large, lasting blackouts occur: too many resources physically trip in response to frequency disturbances, and it takes significant time and effort to resynchronize them to the grid safely and reliably.

The CAISO measures system frequency from multiple locations across the balancing authority area. When frequency deviates from 60 Hz, the CAISO relies on instantaneous telemetry to determine which resources have diverged from their dispatch schedules, thereby causing the deviation. In the event of a contingency, the CAISO also relies on instantaneous telemetry to determine which resources are still electrically connected or disconnected, and which resources can provide ancillary services to mitigate the contingency. Without instantaneous telemetry, the CAISO does not have situational

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<sup>3</sup> Hence the term “balancing authority.” The CAISO also must ensure all thermal line ratings are observed and adhere to a large host of other reliability standards.

<sup>4</sup> In North America, at least.

awareness of the resources causing, mitigating, or exacerbating reliability events. This situation could be exacerbated by a rapid growth of transmission-connected NEM resources.

*4. Provide examples of how interconnection costs and timelines differ for a given system (or set of systems) interconnecting to transmission via the CAISO Open Access tariff versus net energy metering systems interconnecting via Rule 21. Provide illustrative examples of as many systems as possible and be as descriptive (system size, generation type, location in California, sector (e.g., agricultural, industrial, fuel production, etc.) and as specific as possible (a spreadsheet containing these descriptions, cost comparisons, and timelines may be an appropriate way to convey this information).*

The CAISO has three options for new resources to interconnect to the CAISO controlled grid (1) the cluster study, (2) the independent study,<sup>5</sup> and (3) the fast track process.<sup>6</sup> The basic requirements for these options are set forth here:

	Cluster Study	Independent Study	Fast Track
Length	~ 2 years	~ 6 months	~ 6 weeks
Study Cost	\$150,000 deposit	\$150,000 deposit	\$500 fee
Other Initial Requirements	N/A	Must demonstrate need and ability to interconnect more quickly than the cluster study process. Must interconnect in an area the CAISO can study independently from other interconnection customers.	Generator must be 5 MW or less.

The CAISO has a detailed overview of these studies available on its website.<sup>7</sup> It has attached this overview as Exhibit A to these responses.

<sup>5</sup> Independent study interconnection customers must demonstrate a need and ability to interconnect more quickly than the cluster study process, and they must interconnect in an area the CAISO can study independently from other interconnection customers.

<sup>6</sup> Fast track interconnection customers cannot exceed 5 MW.

<sup>7</sup> CAISO Interconnection Options, <http://www.caiso.com/Documents/Presentation-1-InterconnectionApplicationOptions-Process.pdf>.

Respectfully submitted,

**By: /s/ William H. Weaver**

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Dated: December 21, 2021

# **EXHIBIT A**



# Interconnection Application Options and Process

Jason Foster, Sr. Interconnection Specialist

Phelim Tavares, Sr. Interconnection Specialist

Matt Chambers, Sr. Interconnection Specialist

Linda Wright, Sr. Interconnection Specialist

Julie Balch, Sr. Interconnection Specialist

March 11, 2020



# Topics

- Interconnection Resource Team
- ISO Tariff and Business Practice Manuals (BPM)
- Application Options, Requirements, and Timelines
- Generator Downsizing Process
- Project Withdrawals
- Electronic Submission of Interconnection Requests (RIMS)





# Interconnection Overview

Jason Foster, Sr. Interconnection Specialist

# Interconnection Resources – We're here to support you!

- Interconnection Customer's point of contact throughout application and study process
- Facilitates communications between all parties
- Conducts project scoping and study results meetings
- Ensures documentation and project information is up to date in the Resource Interconnection Management System
- General questions, [IRInfo@caiso.com](mailto:IRInfo@caiso.com)



# California ISO Tariff

The California ISO operates under the terms and conditions of its FERC-approved tariff:

- Section 25 addresses interconnection of generating units

In addition, appendices of the tariff address generator interconnection processes:

- **Appendix DD**
  - Generator Interconnection Deliverability Allocation Procedures (commonly known as the GIDAP).
- **Appendix EE**
  - Large Generator Interconnection Agreement for interconnection requests processed under Tariff Appendix DD.
- **Appendix FF**
  - Small Generator Interconnection Agreement for interconnection requests processed under Tariff Appendix DD.

## California ISO Tariff-cont.

- The CAISO tariff may be modified, amended, or supplemented as needed, subject to the approval of FERC
- Each section or appendix of the CAISO tariff is maintained and updated separately in accordance with FERC orders
- The CAISO tariff governs in case of any inconsistency or ambiguity with, business practice manuals, operating procedures, or interconnection agreements

# Business Practice Manuals

ISO Business Practice Manuals (BPMs) provide detailed guidelines, procedures, and examples.

## Interconnection Resources Team References Three BPMs

- BPM for Generator Interconnection Deliverability Allocation Procedures (GIDAP)
  - Current, effective with Cluster 5 and forward
- BPM for Generator Interconnection Procedures (GIP)
  - Applicable only to existing Cluster 4 and earlier projects
- BPM for Distributed Generation for Deliverability (DGD)

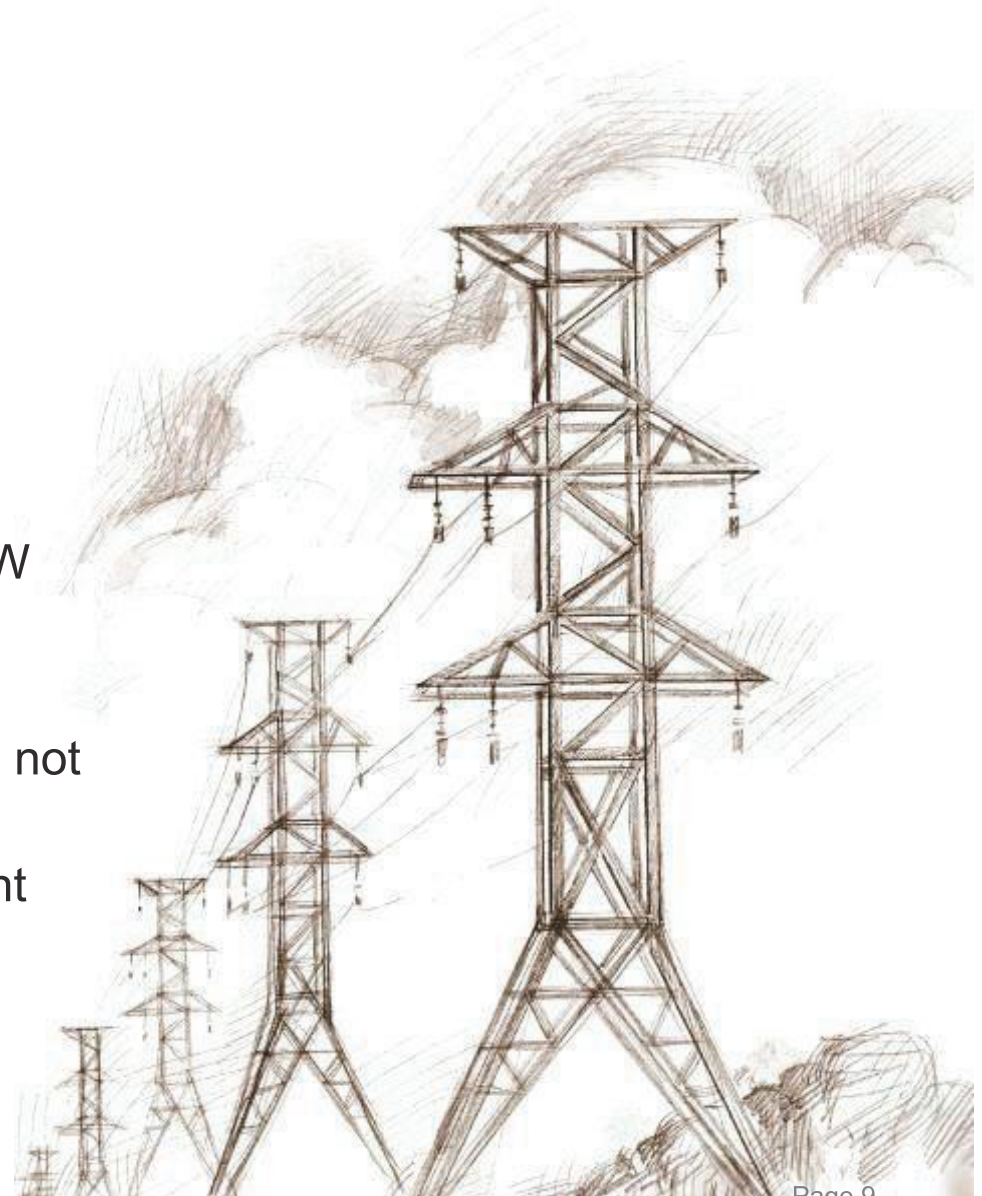
# Interconnection Process Map

You are here



# Application Options

- **Pre-Application**
  - Small project; 20 MW or less
- **Cluster study**
  - Small project; 20 MW or less
  - Large project; more than 20 MW
- **Independent Study Process**
  - When the cluster process does not accommodate desired COD
  - Must be electrically independent
- **Fast Track Process**
  - 5 MW or less





# Pre-Applications

- Opportunity for Interconnection Customers with a proposed Small Generating Facility to receive a report of readily available data
- Requirements
  - \$300 Non-Refundable Fee
  - Pre-Application Request Form
- Report includes (as applicable):
  - Electrical configuration of the substation
  - Existing aggregate generation capacity for substation or circuit
  - Existing or known constraints for a proposed Point of Interconnection (POI)
  - Available capacity on substation or circuit likely to serve the proposed POI

# Application Options Summary



Study Process	Application Window	Site Exclusivity (SE)	Study Deposits
<b>Cluster</b>	April 1-15	Deposit or Documents $\leq 20$ MW = \$100K $> 20$ MW = \$250K	\$150k
<b>Independent Study Process (ISP)</b>	Anytime	SE Must be demonstrated	\$150k
<b>Fast Track (FT)</b>	Anytime	SE Must be demonstrated	\$500 processing fee

# Interconnection Timeline Summary

## Cluster 13 – Two+ years

Cluster 13 Application	Scoping Meeting	Phase I Study	Phase I Meeting	1 <sup>st</sup> Posting	Phase II Study	Phase II Meeting	Transmission Plan Deliverability	2nd Posting	Reassessment Result
Apr 2020	~June 2020	Jul - Dec 2020	Jan 2021	Mar 2021	May – Nov 2021	Dec 2021	Mar 2022	May 2022	Aug 2022

## Independent Study Process (ISP) – Eight months without deliverability

ISP Application	Electrical Independence	Scoping Meeting	Systems Impact and Facilities Study	Results Meeting	1 <sup>st</sup> Posting	Reassessment Result
Anytime	30 CD from ISP eligibility	Set date within 5 BD of Electrical Independence	<= 120 CD of Study Agreement	<= 20 BD of Study Results	<= 120 CD of Study Results	Aug Annually

## Fast Track (FT) – 10 weeks or more

FT Application	Initial Review (Screens)	Customer Options Meeting	Supplemental Review
Anytime	15 BD from FT Eligibility	10 BD from Determination of Upgrades / Additional Studies Needed	10 BD from Receipt of Review Deposit

## Site Exclusivity

- Requirement for interconnection service
  - Initially, interconnection customers may provide a deposit
    - \$100k/small and \$250k/large
- For private land, Site Exclusivity is:
  - (a) Ownership of, a leasehold interest in, or a right to develop property upon which the Generating Facility will be located consisting of a minimum of 50% of the acreage reasonably necessary to accommodate the Generating Facility; or
  - (b) an option to purchase or acquire a leasehold interest in property upon which the Generating Facility will be located consisting of a minimum of 50% of the acreage reasonably necessary to accommodate the Generating Facility.
- For public land, please consult Appendix A of the CAISO tariff (“Site Exclusivity”) and 5.1.3 of the BPM for GIDAP

## Site Exclusivity-cont.

- Common problems with documentation:
  - The demonstration of Site Exclusivity, at a minimum, must be through the Commercial Operation Date
    - Most commonly an issue for leases or options to lease
  - The name of the interconnection customer and the name of the lease/option/grant holder do not match
    - Must provide an assignment agreement, certified organizational chart, or other documentation to evince that the interconnection customer (as listed on the interconnection request) holds the property interest
  - The rights to the land must include the right to develop the proposed project.
    - Not just the right to occupy for the purposes of environmental or other assessments.

# Project Naming Requirement

## **NERC COM-002 Requirement**

Stricter requirements for project name selection

- Duplicated or Unacceptable Project Names will:
  - Cause issues on the Operations Floor
  - Not be accepted into RIMS
  - Require changes after the IR submission
- Valid and acceptable project names will:
  - Provide clear and concise communications
  - Provide smoother transition for each stage of the study/project
  - Result in less required project name changes

### Tools

- Section 5.2 of GIDAP BPM, Selecting a Project Name
- [Prohibited Project Name List](#) (link)

## Cluster Study, Application Process

- **Application Window open April 1<sup>st</sup> – April 15<sup>th</sup>**
  - FERC Approval in March 2018
- **Complete Interconnection Request Package**
  - **Submit IR more than 5 BDs early** for opportunity to cure incomplete package
  - ISO has 5 BDs to deem IR Package Complete
    - Day-for-day extension for ISO delays
  - All IR Package elements must be received by April 15.  
**Packages not deemed complete WILL NOT be studied in Cluster 13.**
  - **Funds preferred via Fed Wire**; checks are accepted

## Cluster Study, Application Process

### **Complete Interconnection Request Package must include:**

- (i) An Interconnection Study Deposit of \$150,000
- (ii) A completed application in the form of Appendix 1, Word doc
  - a. Including Attachment A, Excel doc
  - b. Study agreement, authorized signatory, & state of incorporation for IC
- (iii) Demonstration of Site Exclusivity or posting of a SE Deposit
- (iv) A load flow model
- (v) A dynamic data file
- (vi) A reactive power capability document
- (vii) A site drawing
- (viii) A single-line diagram
- (ix) A flat run plot and a bump test plot from the positive sequence transient stability simulation application
- (x) A plot showing the requested MW at the Point of Interconnection from the positive sequence load flow application



## Cluster Study, Application Process

- Validation & Deficiencies Cure of Interconnection Request (IR)
  - ISO has 10 business days to determine IR validity (initial review)
  - ISO has 5 BDs to respond IR validity (subsequent Reviews)
    - Day-for-day extension for ISO delays until May 31
  - ICs do not have response timeline requirements
- June 30<sup>th</sup> cut-off to cure all deficiencies
  - Plus any extensions due to ISO delay
  - Cure deficiencies in required timeframe to be included in cluster study
- Once all applications are validated:
  - Queue numbers assigned
  - Queue report is available in RIMS

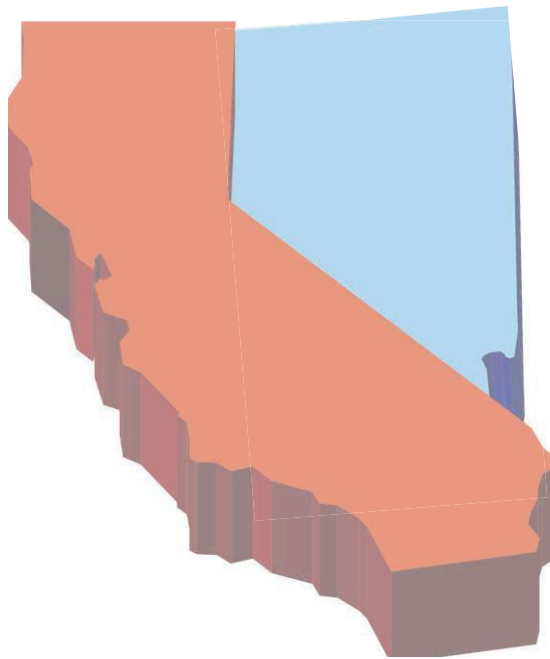
# Questions?



# Cluster, Independent Study, and Fast Track Process Overview

Phelim Tavares, Sr. Interconnection Specialist

# Cluster Study Process



- Interconnection Requests (IR) submitted April 1st – April 15th each year are studied together
- Study costs shared between projects assigned to same study group
- Two cost components:
  - Network Upgrade costs assigned to projects on pro rata basis, if shared
  - Interconnection Facilities costs are project specific, not shared

# Cluster - Customer Meetings & Studies

Cluster 13 Application	Scoping Meeting	Phase I Study	Phase I Meeting	1 <sup>st</sup> Posting	Phase II Study	Phase II Meeting	Transmission Plan Deliverability	2nd Posting	Reassessment Result
Apr 2020	~June 2020	Jul - Dec 2020	Jan 2021	Mar 2021	May - Nov 2021	Dec 2021	Mar 2022	May 2022	Aug 2022

- Approximately 2 years for above timeline with deliverability

	Scoping Meeting	Phase I Study *	Phase I Results Meeting *	Phase II Study *	Phase II Results Meeting *
Purpose	In-Service / COD P.O.I. Transmission system	NU & IF Costs & Timeline Study Report	Study Results Cost Responsibility for Upgrades	Updated NU & IF Costs & Timeline Study Report	Updated Study Results Cost Responsibility for upgrades
Timing	No later than June 30	Begins July 1 170 CD to Complete	Within 30 CD of Phase I Study Report	Begins May 1 205 CD to Complete	Within 30 CD of Phase II Study Report

\*Planned dates shown. Also applicable to ISP projects with deliverability studied with the cluster.

## Cluster – IC Cost Responsibility

- Generally, IC's maximum set by lower of Phase I and Phase II Network Upgrades (NU) costs
- No maximum for Interconnection Facilities (IF) costs
- May be impacted by:
  - Appendix B allowed changes
    - Reduced MWs
    - Deliverability decisions
  - Reassessment study impacts
- Updated cost responsibility definitions will be covered in the second presentation that covers the study results

## Cluster - Modifications Between Phase I and II

Cluster 13 Application	Scoping Meeting	Phase I Study	Phase I Meeting	1 <sup>st</sup> Posting	Phase II Study	Phase II Meeting	Transmission Plan Deliverability	2nd Posting	Reassessment Result
Apr 2020	~June 2020	Jul - Dec 2020	Jan 2021	Mar 2021	May - Nov 2021	Dec 2021	Mar 2022	May 2022	Aug 2022

- Appendix B (to GISPA study agreement) due 10 business days after Phase I results meeting:
  - Confirms deliverability status & option A/B, project milestone dates, and other data provided in the IR
  - Identifies allowable modifications:
    - Decrease in MW output
    - Modify technical parameters of technology
    - Modify the interconnection configuration
    - Point of Interconnection (POI) Change



## Cluster - Interconnection Financial Security

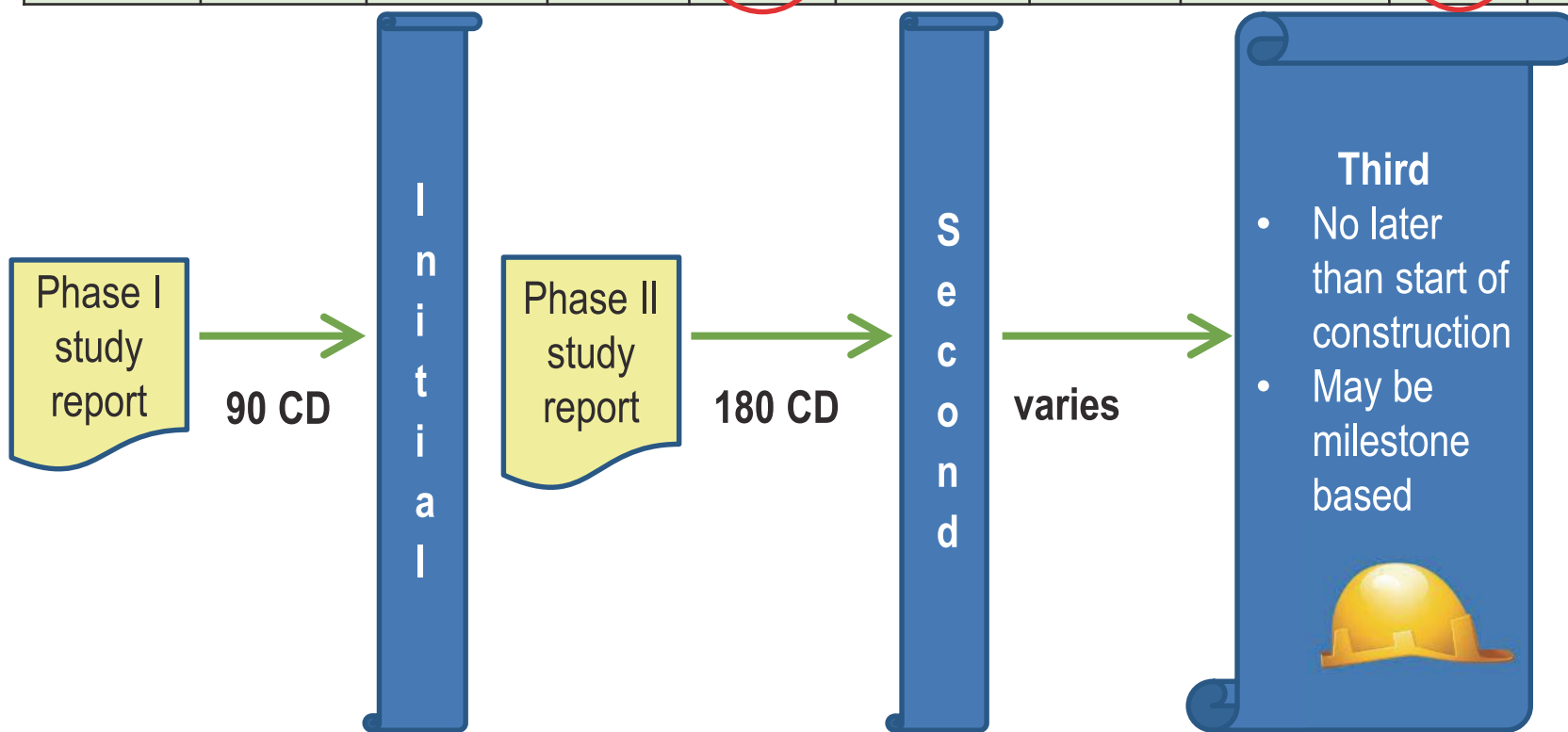
- Posted to PTO as security for project costs
  - Network Upgrades
  - Interconnection Facilities
- Posting formulas
  - Initial – 15% of upgrades with qualifiers
  - Second – 30% of upgrades with qualifiers
  - Qualifiers include:
    - project size (initial posting only)
    - Minimums
    - Maximums





# Cluster - Interconnection Financial Security

Cluster 13 Application	Scoping Meeting	Phase I Study	Phase I Meeting	1 <sup>st</sup> Posting	Phase II Study	Phase II Meeting	Transmission Plan Deliverability	2 <sup>nd</sup> Posting	Reassessment Result
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# Independent Study Process Application

- Can submit an Interconnection Request anytime, however it is advantageous to submit the applications anytime between November and March
- Eligibility:
  - Demonstrate cluster process cannot accommodate desired Commercial Operation Date, and provide evidence of the following:
    - Financial resources
    - Permitting and regulatory approval
    - Purchase order for gen equipment
    - Point of Interconnection
    - Reliability Network Upgrades
  - Site Exclusivity via documentation only
  - Electrical Independence
  - Deliverability Assessment included as part of next Cluster study



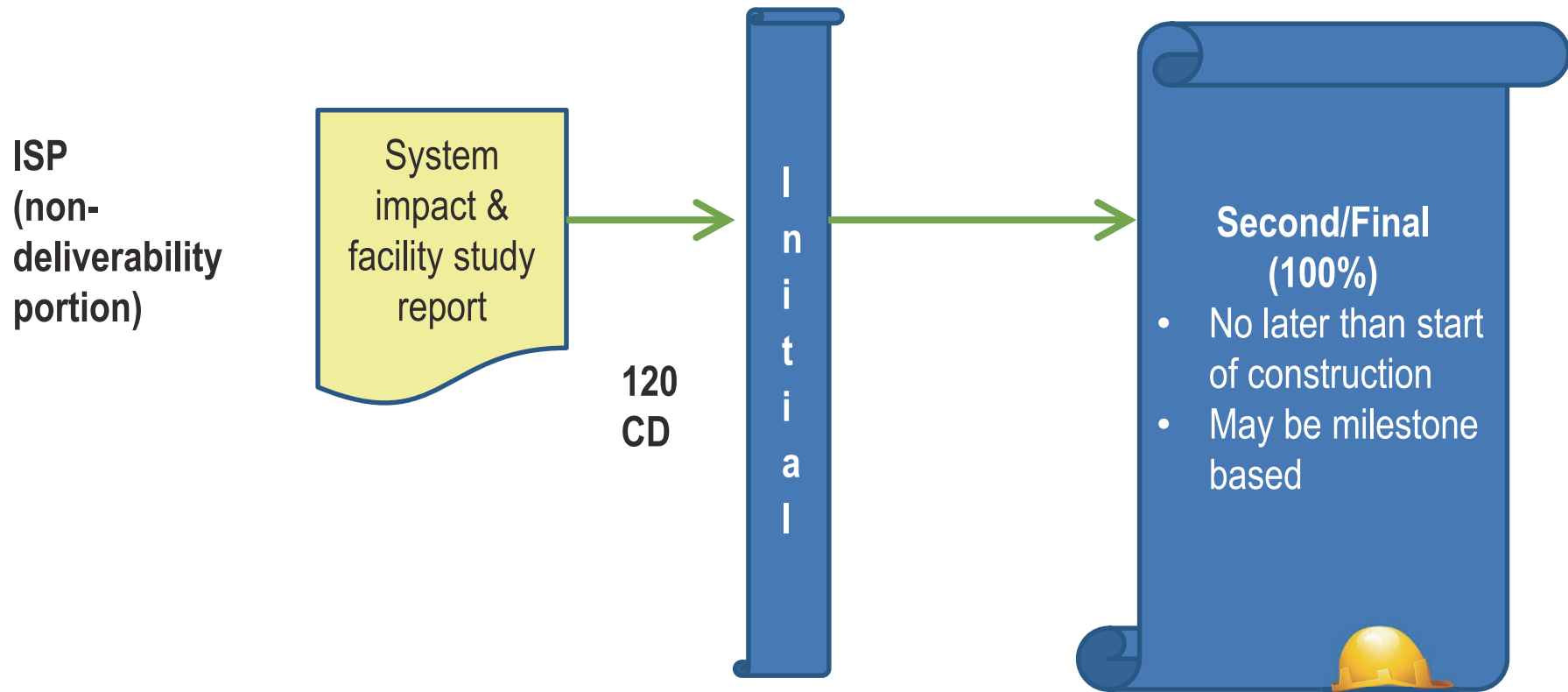
# Independent Study Process - Customer Meetings & Studies

ISP Application	Electrical Independence	Scoping Meeting	Systems Impact and Facilities Study	Results Meeting	1 <sup>st</sup> Posting	Reassessment Result
Anytime	30 CD from ISP eligibility	30 CD of Electrical Independence	<= 120 CD of Study Agreement	<= 20 BD of Study Results	<= 120 CD of Study Results	Aug Annually

- Approximately 8 months for above timeline through Results Meeting

	Scoping Meeting	System Impact and Facilities Study	Results Meeting
Purpose	Facility Loadings  Instability, Short Circuit, Voltage, & Reliability Issues  Prior System Studies	Short Circuit, Stability, & Power Flow Analysis  IF & RNU Costs and Timeline  Study Report  Needed Studies	Study Results  Cost Responsibility for Upgrades
Timing (Deliverability not included)	Scheduled within 5 BD of Notification of Electrical Independence	Completed within 120 CD after Execution of Study Agreement.	20 BD after System Impact and Facilities Study Report Provided to IC

# Independent Study Process-Interconnection Financial Security



- Deliverability Studies follow the Cluster Timeline

## Independent Study Process- Interconnection Financial Security

- Posted to PTO as security for assigned project costs
- Network Upgrades and Interconnection Facilities costs
  - No ADNUs
  - Large ( $>20$  MW) vs. small ( $\leq 20$  MW) formulas
- Cost Responsibility is established in the System Impact and Facilities study for Energy Only
- Deliverability portion is set forth in Phase I and Phase II study

# Fast Track Study Process Application

- No larger than 5 MW with Energy Only status
- Submit Interconnection Request at any time
  - \$500 non-refundable processing fee
- Eligibility
  - Site Exclusivity via documentation only
  - Must pass all screens
- Customer Meetings, if required
  - Customer Options
  - Supplemental Review

**PASS**   
**FAIL**



# Fast Track Timelines and Meetings

FT Application	Initial Review (Screens)	Customer Options Meeting	Supplemental Review
Anytime	15 BD from FT Eligibility	10 BD from Determination of Upgrades/Additional Studies Needed	10 BD from Receipt of Review Deposit

- Approximately 10 weeks or more for above timeline

	Customer Options Meeting (if needed)	Supplemental Review (if needed)
Purpose	If IR cannot be approved with minimal costs, or a supplemental study, or other additional studies	Determines whether the facility can continue to qualify for interconnection under the FT process
Timing	Scheduled within 10 BD of determination that IR cannot be approved without modifications at minimal cost.	IC will agree to a review within 15 BD of the offer.

## Fast Track-Cost Responsibility

- Financial Security is usually not required unless costs are identified in the supplemental review.
- Costs identified in the Customer Options Meeting or Supplemental Review.
  - Facility modifications
  - Modifications to the Participating TO's electric system



# Questions?



# Transmission Plan Deliverability Allocation and Other Study Processes

Matt Chambers, Sr. Interconnection Specialist

## Resource Adequacy & Deliverability

- Resource Adequacy (RA) is a CPUC program designed to:
  - Provide sufficient resources to the ISO to ensure safe and reliable operation of the grid in real time
  - Incentivize appropriate siting and construction of new resources to meet future reliability needs
- Deliverability is a resource attribute designated by ISO
  - Required for participation in the RA Program
  - Not to be confused with firm transmission service
  - Deliverability status does not guarantee that a project will avoid curtailment due to transmission congestion

## Deliverability Statuses

- Full Capacity Deliverability Status (FCDS)
  - Allows a resource to provide RA Capacity to meet a Load Serving Entity's RA requirement
  - Net Qualifying Capacity payments settled bilaterally
- Energy Only Deliverability Status
  - Not eligible to provide RA Capacity
- Partial Capacity Deliverability Status
  - Only a fraction of generating facility capacity is Deliverable

### Note:

- Operationally, no difference between Deliverability statuses
- The dispatch of energy is based on economics; not Deliverability Status

## TP Deliverability Allocation Process: Affidavits

Cluster 13 Application	Scoping Meeting	Phase I Study	Phase I Meeting	1 <sup>st</sup> Posting	Phase II Study	Phase II Meeting	Transmission Plan Deliverability	2nd Posting	Reassessment Result
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- Projects requesting FCDS must submit affidavit to be eligible for Deliverability allocation. Applies to:
  - Cluster, ISP, and PTO WDAT studied by ISO for Deliverability in current cluster
  - Parked projects
  - Energy Only projects seeking Deliverability from existing and approved transmission facilities
- Market Notice will specify due date (typically due early December)
- Projects must, at a minimum, select an allocation group and attest to current financing, permitting and land acquisition statuses
- Allocation groups will establish priority if insufficient Deliverability

# TP Deliverability Allocation Group Descriptions

Allocation Group	Deliverability Status	Commercial Status (PPA or shortlisting must require Deliverability)	Can Build DNU's for Allocation?	Allocation Rank
1	Current Cluster Phase 2 Study / Parked	(i) Executed or reg-approved PPA; OR (ii) LSE serving its own load	Yes	Allocated 1 <sup>st</sup>
2	Current Cluster Phase 2 Study / Parked	(i) Shortlisted in a RFO/RFP; OR (ii) Negotiating a PPA	Yes	Allocated 2 <sup>nd</sup>
3	Current Cluster Phase 2 Study	Proceeding without a PPA	Yes	Allocated 3 <sup>rd</sup>

- Group 1: Must provide copy of executed PPA
- Group 2: Confirmation of shortlisting and terms on RFO/RFP required; or Terms of PPA and counterparty confirmation required
- Group 3: Projects proceeding to construction even if unable to secure PPA
  - Must accept allocation or WITHDRAW
  - Project will be converted Energy-Only if unable to comply with strict rules designed to limit time in Queue

# TP Deliverability Allocation Group Descriptions

Allocation Group	Deliverability Status	Commercial Status	Can Build DNUs for Allocation?	Allocation Rank
4	(i) Converted to Energy-Only; OR (ii) Energy-Only projects that achieved Commercial Operation Date	Executed or regulator-approved PPA requiring FCDS	No	Allocated 4 <sup>th</sup>
5	(i) Converted to Energy-Only; OR (ii) Energy-Only projects that achieved Commercial Operation Date	Shortlisted in a RFO/RFP or Negotiating a PPA	No	Allocated 5 <sup>th</sup>
6	Converted to Energy-Only	Commercial Operation Date achieved	No	Allocated 6 <sup>th</sup>
7	Energy-Only	Commercial Operation Date achieved	No	Allocated 7 <sup>th</sup>

- Must submit a seeking TP Deliverability affidavit and \$60,000 study deposit as described in Market Notice

# TP Deliverability Allocation Results

Cluster 13 Application	Scoping Meeting	Phase I Study	Phase I Meeting	1 <sup>st</sup> Posting	Phase II Study	Phase II Meeting	Transmission Plan Deliverability	2nd Posting	Reassessment Result
Apr 2020	~June 2020	Jul - Dec 2020	Jan 2021	Mar 2021	May - Nov 2021	Dec 2021	Mar 2022	May 2022	Aug 2022

- Transmission Plan (TP) Deliverability allocation:
  - Determined from most recent Transmission Plan and eligible projects seeking Deliverability
  - Projects may be allocated 0% - 100% of requested amount
  - Deliverability allocation results released to all eligible projects requesting FCDS in mid-March
  - Within seven calendar days of results notice, IC must confirm how to proceed via customer options form (accept allocation, decline, park, etc.)



# Distributed Generation (DG) Seeking Deliverability

- Annual Process
  - February - July
- Must apply to Utility Distribution Company (UDC)
- Eligibility
  - Wholesale Distribution Access Tariff or CPUC Rule 21
- Business Practice Manual on Distributed Generation for Deliverability



# Annual Downsizing Opportunity

- Reduce existing project MW size for projects in the CAISO queue
  - Apply annually, Oct 15 – Nov 15
  - Separate downsizing request application
  - \$60K study deposit
  - Meet the eligibility requirements:
    - Project must be in good standing
  - Included in the annual reassessment and downsizing results study



# Reassessments

- Annual downsizing and reassessment study report:
  - Shows the impacts of downsized projects, results of TP Deliverability, and withdrawals in the CAISO queue
  - Any active project that has complete the Phase II study and is impacted and/or submitted a request through the Annual Downsizing will receive this report
  - Issued around late July each year

# Questions?

# Withdrawals, Refunds, and Recovery

Julie Balch, Interconnection Specialist

# Withdrawals, Refunds, and Recovery

IC may withdraw at any time.



Email



or

Written Notice



ISO may withdraw an IR if the IC fails to adhere to certain requirements of the Tariff

# Withdrawals, Refunds, and Recovery (Cont.)

## Effects on study deposit

**Scoping Meeting for Cluster and ISP projects**



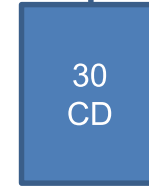
100% of Unused Portion



**Phase I for Cluster System Impact and Facilities Study for ISP Results Meeting**



Difference between study deposit and greater of costs incurred or one-half of study deposit to a max of \$75K



No Refund

## Withdrawals, Refunds and Recovery (Cont.)

### Financial Security for **Interconnection Facilities**

- Release of entire posted amount, except any amounts necessary to pay for costs incurred or irrevocably committed.





## Withdrawals Refunds and Recovery (Cont.)

### Financial Security for **Network Upgrades** for Cluster and ISP projects

- On 2/19/19 FERC approved CAISO's proposed removal of all conditions for partial IFS recovery
- All projects qualify for recovery of 50% of IFS postings for NUs upon withdrawal
  - Less any irrevocably committed funds by PTO towards any NUs

# Withdrawals Refunds and Recovery (Cont.)

## Initial Posting



## Second Posting



## Construction



Formula for non-refundable portion: Lesser of IFS (plus any other provided security plus any separately provided capital):

less all costs and expenses incurred or irrevocably committed,

**OR**

minus the lesser of 50% of posted value **or** \$10K/MW (\$20K/MW after second posting)

## Withdrawals Refunds and Recovery (Cont.)

Withdrawal between the initial posting and the deadline for the second posting for a cluster project

**Example 1:**

Project size: 100 MW

Interconnection Financial Security (IFS) posted for Network Upgrades (NUs): \$20M

50% of posted amount or \$10K/MW, whichever is less is calculated:

50% of \$20M = \$10M

\$10K x 100 MW = \$1M

The lesser amount, \$1,000,000 is deducted from the posted security.

\$20M (deposit)

- 1M (\$10K/MW)

\$19M Recovered by IC

## Withdrawals Refunds and Recovery (Cont.)

Withdrawal between the initial posting and the deadline for the second posting for a cluster project

**Example 2:**

1,250 MW project

IFS posted for NUs: \$20M

50% of posted amount or \$10K/MW, whichever is less is calculated:

50% of \$20M = \$10M

\$10K x 1,250 MW = \$12.5M

The lesser amount, \$10M is deducted from the posted security.

\$20M (deposit)

- 10M (50%)

\$10M Recovered by IC

## Withdrawals Refunds and Recovery (Cont.)

Withdrawal between the second posting and the commencement of construction activities for a cluster project

**Example 1:**

Project size: 100 MW

IFS posted for NUs: \$20M

50% of posted amount or \$20K/MW, whichever is less is calculated:

50% of \$20M = \$10M

\$20K x 100 MW = \$2M

The lesser amount, \$2M is deducted from the posted security.

\$20M (deposit)

- 2M (\$20K/MW)

\$18M Recovered by IC

## Withdrawals Refunds and Recovery (Cont.)

Withdrawal between the second posting and the commencement of construction activities for a cluster project

**Example 2:**

Project size: 1,000 MW

IFS posted for NUs: \$20M

50% of posted amount or \$20K/MW, whichever is less is calculated:

50% of \$20M = \$10M

\$20K x 1K MW = \$20M

The lesser amount, \$10M is deducted from the posted security.

\$20M (deposit)

- 10M (50%)

\$10M Recovered by IC

# Questions?



# RIMS App & Study Module

Linda Wright, Sr. Interconnection Specialist



# Electronic Interconnection Request Submission

- Resource Interconnection Management System (RIMS) is a secure web-based database application
- Electronic submission of Interconnection Requests accomplished via a user interface from the CAISO website
- RIMS5 User Guide is available on-line
- Access to RIMS is established by the CAISO's Access and Identity Management (AIM) system

<https://rimspub.caiso.com>

← → ×  California Independent System Operator Corporation [US] <https://rimspub.caiso.com/rims5/logon.do>



Resource Interconnection Management System



New Request

Reporting

#### New Request

First Name:

Last Name:

Email:

Confirm Email:

Requested Project Name:

Request Type:

#### Retrieve Request

Registration Code:

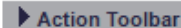
1. Fill in the "New Request" section above to receive a registration code via email that will allow you to upload an Interconnection Request or Project Details Form and associated documents. This only needs to be done once for each project to be submitted.

2. Once a registration code is received, paste it into "Registration Code" field to upload required project files.

Resource Interconnection Management System (RIMS) is the CAISO's system for tracking several different interconnection processes at the CAISO. A training presentation for RIMS is available [here](#).

### Queue Viewing Instructions

1. Click on "Reporting" tab in top left corner of this screen
2. Once you are on the report dashboard, use scroll bar on bottom to view information on the right side of the report screen
3. Use Action Toolbar icons at top left of report dashboard to customize the view. Expand the following section to view the details.



4. Export the report to Excel to further evaluate data
5. Link to more information: [RIMS5 User Guide for App & Study Module](#)

### App & Study Module (Interconnection Request)

CAISO Queue Interconnection Requests are tracked in the App & Study Module. Click [here](#) for process guidance and forms. Please select the "Interconnection Request" request type at the left to submit this type of project.

# Electronic Interconnection Request Submission (cont'd)

**New Request**

First Name:

Last Name:

Email:

Confirm Email:

Requested Project Name:

Request Type:

**Retrieve Request**

Registration Code:



# Electronic Interconnection Request Submission (cont'd)



Wed 2/17/2016 5:37 PM

rimms-noreply@caiso.com

CAISO Project Registration - New Project Name

o  Wright, Linda

## Action Items

Here are the details of your project registration

Project Name :New Project Name

Registration Code :16AS207\_3CN58S\_PEDWAW\_1OKFI6

Please click on the link below to upload supporting documents

[http://caiso.com/rimms\\_public](http://caiso.com/rimms_public)

# Electronic Interconnection Request Submission (cont'd)

**New Request**

First Name:


Last Name:

Email:

Confirm Email:

Requested Project Name:

Request Type:



**Retrieve Request**

Registration Code:

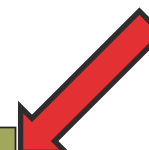
# Electronic Interconnection Request Submission (cont'd)

## INTERCONNECTION REQUEST

Project Name: New Project Name

Uploaded Files				
Document Type	File Name	Uploaded Status	Uploaded Date	Comment

Upload Project Files



### Inventory of Documents to Upload

Document Type	Project Types
Appendix DD Appendix 1 - Interconnection Request Attachment A to Appendix 1 - Generating Facility Data	All
Evidence of Site Exclusivity, including names, addresses, and contact information of site owner(s)	All
Site drawing to scale	All
Single-line diagram	All
Plot of generator terminal voltage vs field current	Synchronous
Block diagram of excitation system	Synchronous
Load Flow Model (*.epc)	All
Dynamic Model (*.dyd)	All
Google Map (*.kmz) showing project site	SCE project only
Manufacturers Specifications (optional)	Optional
Reactive Power Curve (optional)	Optional
Storage Supplemental Data Sheet (sheet supplied to IC after initial IR submission)	Storage
Other	As needed

**NOTE:** The Interconnection Request form found on the Generation Interconnection webpage is the **ONLY** version that is compatible with the electronic submission process

Save As Draft

- By checking this box, you understand that electronic submission is not considered a complete and/or valid Interconnection Request until the CAISO provides acknowledgement within ten (10) Business Days of receipt that the Interconnection Request, which includes the timely receipt of study deposit funds, is deemed complete and/or valid pursuant to CAISO Tariff Appendix DD Section 3.5.2. In the event that the CAISO identifies any deficiencies in the interconnection request, you will have an opportunity to cure pursuant to Appendix DD Section 3.5.2.2.

Submit Registration for Validation

# Electronic Interconnection Request Submission (cont'd)

The image shows two overlapping windows titled "Upload Project Files". The background window is partially obscured by a foreground window. Both windows have a header with the title and a close button. Below the header, there is a text prompt "Please add comments after upload" and a label "Select a Document Type:". In the background window, a dropdown menu is open, showing "Attachment A to Appendix 1" as the selected option. A red arrow points from this dropdown to the foreground window. The foreground window shows the same dropdown menu, but it is expanded to show a list of document types: "Attachment A to Appendix 1", "Attachment A to Appendix 1", "Evidence of Site Exclusivity", "Single-line diagram", "Dynamic Model", "Google Map", "Site drawing to scale", "Gen Terminal Voltage vs Field Current", "Block Diagram of Excitation System", "Load Flow Model", "Manufacturers Specifications", "Reactive Power Curve", "Storage Supplemental Data Sheet", and "Other Documents". At the bottom of the foreground window, there are two buttons: "Upload" and "Cancel".

# Electronic Interconnection Request Submission (cont'd)

## INTERCONNECTION REQUEST

Project Name: New Project Name

Uploaded Files					
Document Type	File Name	Uploaded Status	Uploaded Date		Comment
Attachment A to Appendix 1	New Project Name IR.docx	SUCCESS	02/17/2016 18:05	Delete	0 Comments
Evidence of Site Exclusivity	New Project Name Site Exclusivity.docx	SUCCESS	02/17/2016 18:03	Delete	0 Comments

Upload Project Files

Save As Draft

By checking this box, you understand that the electronic submission is not considered a complete and/or valid Interconnection Request until the CAISO provides acknowledgement within the [redacted] Business Days of receipt that the Interconnection Request, which includes the timely receipt of study deposit funds, is deemed complete and/or valid pursuant to CAISO Tariff Appendix DD Section 3.5.2. In the event that the CAISO identifies any deficiencies in the interconnection request, you will have an opportunity to cure pursuant to Appendix DD Section 3.5.2.2.

Submit Registration for Validation

02/18/2016 11:46:43 Your registration request has been submitted successfully.  
RTESTER01



## Accessing RIMS

Once RIMS access is established via AIM, those provisioned access to a project will be able to:

- See screens that detail the project and its progress
- Access uploaded documents
- Upload documents
- View IC, CAISO and PTO contact information

▼ Resource Summary

Project Name: Cluster Project - TEST

Queue Position: 1A

Queue Date:  31

Project Cost Code:

Study Type: Queue Cluster Process

Cluster Number: C9

PTO: OTHER ▼

Affected PTO: OTHER ▼

POI: Otay Mesa Switchyard 230 kV

Cf

Voltage Level(kV): 145

Project Status: WITHDRAWN ▼

Che

Reason For Withdraw: None ▼

Project Status Date: 10/20/2016 31

QM Project Standing:

Requested Deliverability: Full Capacity

Current Approved Net MW: 100

Cf

Comments: my comments

**Interconnection Request Info**

Contact First Name: RIMS

Contact Last Name: Tester05

Contact Title: Director

Signature Date: 03/21/2016 31

**Current Interconnection Customer**

Interconnection Customer(Legal Name):

Company Type: Limited Liability Company

State Incorporated: California ▼

Parent Company: Parent Company

**Project Location**

Address: Address

City: City County: County

State: California ▼ Zip Code: 11111

Latitude: 1234.22 Longitude: 1234.33

# Available RIMS Screens

- ▶ Equipment Configuration
- ▶ Deliverability
- ▶ Project Details
- ▶ Documents
- ▶ Project Contacts
- ▶ Project Specific Audit Log

Equipment Configuration

General Description

equipment configuration comments with updates

NEW/EXISTING Generation

- New Generation Facility
- Existing Generation Facility

Fuel Type and Generation Type



Generator Type	Fuel Type	Net MW
Hydro	Water	55
Wind Turbine	Wind	222

Other Generation and Fuel Type



Other Generator Type	Other Fuel Type	Net MW	Comments
other gen type	other fuel type	444	other comments

Project Milestones



Type	In Service Date	Trial Operation Date	COD Date	Term of Service	Send COD date change Notification
IR	01/01/2016	02/01/2016	03/01/2016	10	
CURRENT	01/01/2016	02/01/2016	03/01/2016	10	
FINAL	11/01/2016	11/01/2016	11/01/2017	12	

Downsizing Requests



Date Received	Original MW Size	Post Downsizing MW	Deposit Date	Withdrawn Date

▼ Deliverability and Transmission Implementation Details

Requested Deliverability

Annual Full Capacity Deliverability				
Received Date	Study Cluster	Assigned MW	Allocation Date	Percentage (%)

TPD Affidavit									
Affidavit Type	Date Received	Valid	Score	Comments	Allocation Detail (MW)	Accepted (MW)	Parked (MW)	Energy Only (MW)	Withdrawn (MW)

Affected Systems Mitigations will appear on Weekly Digest Emails to responsible project contacts as listed in Notification Contacts table when the Current Approved Initial Synchronization Date (from the Project Milestone table) is less than 180 days away, and Affected Status Mitigation Status is not set as complete. Also, a Bulk Loader is available for this table.

Affected Systems						
Affected System	Potential or Identified?	Mitigation Type	Mitigation Status	Mitigation Date Completed	Send task reminder?	Notes

Transmission as Modeled and Implemented							
Phase Description	Phase ID	Primary Purpose	Utility Project Status	Phase has SPS/RAS	Approved In-Service Date	Full Network Model DB#	Complete?

### Transmission as Identified by Transmission Planning

NUID	Study	Queue Position	PTO	Type	Upgrade Description	Voltage	Needed for	Allocation (%)	Allocated Constant Cost (\$k)	Allocated Escalated Cost (\$k)	Estimated Time to Construct (Months)	History

Maximum Cost Exposure (MCE) (\$k)	Maximum Cost Responsibility (MCR) (\$k)	Current Cost Responsibility (CCR) (\$k)	Current Cost Allocation (\$k)	PTO Name	Sum of Allocated Constant Cost (\$k)	Sum of Allocated Escalated Cost (\$k)

RNU Reimbursement (\$/MW):

PTO	RNU Cap (\$/MW)

### Transmission as Modeled and Implemented

Phase Description	Phase ID	Primary Purpose	Utility Project Status	Phase has SPS/RAS	Approved In-Service Date	Full Network Model DB#	Complete?

▼ Project Details

▼ IR Checklist

Interconnection Request				
Checklist Item	Status	Status Date	History	Comments
Interconnection Request Form	Received	03/24/2016		0 Comments
Attachment A to Appendix 1	Received	03/24/2016		0 Comments
Study Deposit	Received	10/24/2016		0 Comments
Site Exclusivity	Documents	10/24/2016		0 Comments
PTO IR Review	Valid Received from PTO	03/30/2016		2 Comments
IR Package				0 Comments
PTO Engagement Letter				0 Comments
Scoping Meeting				0 Comments
Scoping Meeting Minutes				0 Comments
Point of Interconnection				0 Comments
Study Agreement				0 Comments
IR Tab Status				0 Comments

▼ Phase I Checklist

Phase I Study				
Checklist Item	Status	Status Date	History	Comments
Phase I Study Report				0 Comments
Phase I Study Results Meeting				0 Comments
Phase I Study Meeting Minutes				0 Comments
Appendix B				0 Comments
Phase I Tab Status				0 Comments

▶ Phase II Checklist

▶ GIA Checklist

▶ Financial Security

▶ Study Costs

▼ **Study Costs**

Project Status : WITHDRAWN

Amounts Invoiced as of 02/21/2017

**Project Billing**


Project Cost Code:  
 Project Name: Cluster Project - TEST  
 Study deposit:

**To Date Cost**

Invoiced by PTO:  
 Accrued by ISO:  
 Total:

Study Refund to IC:  
 Invoice to IC:  
 Payment from IC:

Cluster Study Charges								
Scoping Meeting			Phase I Study			Phase II Study		
PTO Charges	ISO Charges	Total Charges	PTO Charges	ISO Charges	Total Charges	PTO Charges	ISO Charges	Total Charges











Uploaded Invoice						
Document Group	Document Type	File Name	Sharepoint Link	Uploaded Status	User	Uploaded Date
INVOICE	Invoice	invoice.pdf		SUCCESS	HXU	03/31/2016



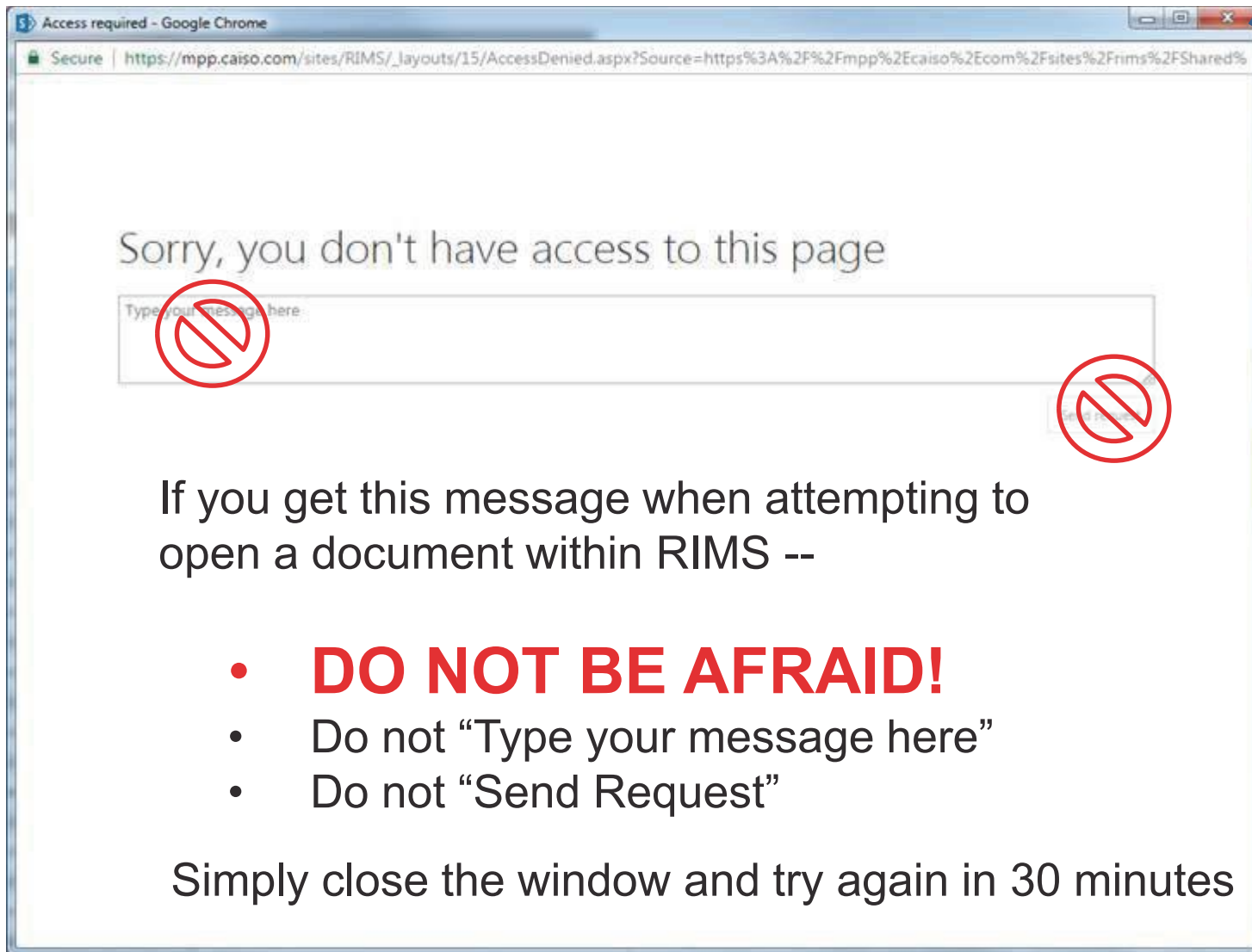


Documents

### Uploaded Files

Document Group	Document Type	File Name	Sharepoint Link	Uploaded Status	User	Uploaded Date	Comment	
IR	Dynamic Data	dynamic_model.dyd		SUCCESS	HXU	03/31/2016	0 Comments	<a href="#">Delete</a>
IR	Attachment A to Appendix 1	AS_IR_FORM_Cluster_v4(1).docx		SUCCESS	RTester05	03/23/2016	0 Comments	<a href="#">Delete</a>
IR	Load Flow Model	load_flow_model.epc		SUCCESS	RTester05	03/24/2016	0 Comments	<a href="#">Delete</a>
IR	Map	google_map.kmz		SUCCESS	RTester05	03/24/2016	0 Comments	<a href="#">Delete</a>
IR	Other Documents	misc.txt		SUCCESS	HXU	03/31/2016	0 Comments	<a href="#">Delete</a>
IR	Other Documents	other_project_file.zip		SUCCESS	HXU	10/31/2016	0 Comments	<a href="#">Delete</a>
IR	Site Exclusivity	site_exclusive.txt		SUCCESS	HXU	03/31/2016	0 Comments	<a href="#">Delete</a>
IR	Single Line Diagram	single_line_diagram.jpg		SUCCESS	RTester05	03/24/2016	0 Comments	<a href="#">Delete</a>
IR	Storage Supplemental Data Sheet	storage_supplemental.txt		SUCCESS	HXU	03/31/2016	0 Comments	<a href="#">Delete</a>
PHASE2	Reassessment Downsizing Report	reassessment.txt		SUCCESS	HXU	10/31/2016	0 Comments	<a href="#">Delete</a>

[Upload Project Files](#)



Access required - Google Chrome

Secure | [https://mpp.caiso.com/sites/RIMS/\\_layouts/15/AccessDenied.aspx?Source=https%3A%2F%2Fmpp%2Ecaiso%2Ecom%2Fsites%2Ffrms%2Fshared%](https://mpp.caiso.com/sites/RIMS/_layouts/15/AccessDenied.aspx?Source=https%3A%2F%2Fmpp%2Ecaiso%2Ecom%2Fsites%2Ffrms%2Fshared%2F...)

Sorry, you don't have access to this page

Type your message here




If you get this message when attempting to open a document within RIMS --

- **DO NOT BE AFRAID!**
- Do not “Type your message here”
- Do not “Send Request”





Simply close the window and try again in 30 minutes

▼ Project Contacts





The Project Manager for your project is:

CAISO Project Manager				
				
Name	Contact Type	Role	Email	Phone
Haitao Xu	ISO Project Manager	ISO Admin	hxu@caiso.com	(916) 802-0875

Please contact the Project Manager first for project inquiries and activities.

CAISO Contacts				
				
Name	Contact Type	Role	Email	Phone
Haitao Xu	ISO Engineer	ISO Admin	hxu@caiso.com	(916) 802-0875
Judy Brown	ISO Interconnection Specialist	ISO Admin	jbrown@caiso.com	916-608-7062
Raeann Quadro	ISO Queue Management	ISO Admin	rquadro@caiso.com	(916) 749-8392

External Contacts (from AIM)									
									
Name	Contact Type	Role	Email	Phone	Address 1	Address 2	City	State	Zip Code

Notification Contacts										
										
First Name	Last Name	Contact Type	Role	Email	Phone	Address 1	Address 2	City	State	Zip Code
John	Smith	IC Primary	notification	jsmith@abc.test	123-4567				Arizona	
Susie	Queue	PTO Engineer	notification	susie@email.test					None	

# Planning to submit an Interconnection Request in Cluster 13?

- Submit IR early
  - Establish your RIMS IR registration and access for your team
  - RIMS could reject your IR form for incomplete or invalid information  
**PRO TIP: DO NOT CUT AND PASTE INFORMATION!**
  - Apply early -- allows time to resolve IR data deficiencies
  - Cluster 13 application window is April 1-15, 2020

# Resources

Affidavit for Cluster 5 and Later Queue Clusters seeking Transmission Planning Deliverability

<http://www.caiso.com/Documents/AffidavitTemplate-Cluster5-LaterQueueClustersSeekingTPDeliverability.doc>

Appendix B to Generator Interconnection Study Process Agreement

<http://www.caiso.com/Documents/AppendixB-GeneratorInterconnectionStudyProcessAgreement.doc>

Business Practice Manuals (BPM)

- **Generator Interconnection and Deliverability Allocation Procedures (GIDAP)**

<http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Generator%20Interconnection%20and%20Deliverability%20Allocation%20Procedures>

- **Generator Management**

[http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Generator Management](http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Generator%20Management)

Deliverability Allocation Customer Options Form

<http://www.caiso.com/Documents/DeliverabilityAllocationCustomerOptionsForm.doc>

Energy Storage Roadmap

<http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorageInterconnection.aspx>

# Resources

Generator Interconnection and Deliverability Allocation Procedures Cluster Process Summary

<http://www.caiso.com/Documents/GeneratorInterconnection-DeliverabilityAllocationProceduresClusterProcessSummary.pdf>

GIDAP Customer Guidelines

<http://www.caiso.com/Documents/GIDAPCustomerGuidelines.xls>

Generator Interconnection Webpage

<http://www.caiso.com/planning/Pages/GeneratorInterconnection/Default.aspx>

Interconnection Request and Generating Facility Data

(Tariff Appendix DD Appendix 1 – IR, and Attachment A to Appendix 1 – Technical Data)

<http://www.caiso.com/Documents/GIDAPAppendix1-AttachmentA-Appendix1-InterconnectionRequest-GeneratingFacilityData.doc>

ISO Generator Interconnection Queue

<http://www.caiso.com/Documents/ISOGeneratorInterconnectionQueueExcel.xls>

Participating Transmission Owner financial security instruments

<http://www.caiso.com/planning/Pages/GeneratorInterconnection/GeneratorInterconnectionApplicationProcess/Default.aspx>

# Resources

## Participating Transmission Owner per unit costs

<http://www.caiso.com/planning/Pages/GeneratorInterconnection/GeneratorInterconnectionApplicationProcess/Default.aspx>

## Resource Interconnection Fair Webpage

<http://www.caiso.com/informed/Pages/MeetingsEvents/PublicForums/Default.aspx>

## Sample IR/Tech Data

<http://www.caiso.com/Documents/SampleInterconnectionRequest-TechnicalData-Solar-Wind.pdf>

<http://www.caiso.com/Documents/SampleInterconnectionRequest-TechnicalData-Thermal.pdf>

## Tariff Section 25

[http://www.caiso.com/Documents/Section25\\_Interconnection-GeneratingUnits-Facilities\\_Dec3\\_2013.pdf](http://www.caiso.com/Documents/Section25_Interconnection-GeneratingUnits-Facilities_Dec3_2013.pdf)

## Tariff Appendix DD (GIDAP)

[http://www.caiso.com/Documents/AppendixDD\\_GeneratorInterconnection-DeliverabilityAllocationProcess\\_Dec3\\_2013.pdf](http://www.caiso.com/Documents/AppendixDD_GeneratorInterconnection-DeliverabilityAllocationProcess_Dec3_2013.pdf)

## Technical Bulletin: Reassessment Process Reallocation of Cost Shares for Network Upgrades and Posting

[http://www.caiso.com/Documents/TechnicalBulletin\\_GIDAP-ReassessmentProcessReallocation-CostShares-NetworkUpgrades-Posting.pdf](http://www.caiso.com/Documents/TechnicalBulletin_GIDAP-ReassessmentProcessReallocation-CostShares-NetworkUpgrades-Posting.pdf)

# Questions?