



California ISO


# 2023 Interconnection Process Enhancements Track 2 Working Group

July 24, 2023

# Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- These collaborative working groups are intended to stimulate open dialogue and engage different perspectives.
- Please keep comments professional and respectful.
- Please try and be brief and refrain from repeating what has already been said so that we can manage the time efficiently.

## Instructions for raising your hand to ask a question

- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  located on the top right above the chat window. **Note:** #2 only works if you dialed into the meeting.
  - Please remember to state your name and affiliation before making your comment.
- If you need technical assistance during the meeting, please send a chat to the event producer.
- You may also send your question via chat to all panelists.

# Agenda

Time	Topic
1:00pm – 1:10pm	Introduction and Meeting Objectives
1:10pm – 2:30pm	Stakeholder Proposals
2:30pm – 2:45pm	Break
2:45pm – 3:55pm	Stakeholder Proposals
3:55pm – 4:00pm	Discuss Next Steps and Initiative Schedule

# CAISO Policy Initiative Stakeholder Process



We are here

- Working groups will inform the development of a straw proposal.
- The ISO will not request formal written comments between working group meetings, but will accept written comments after the final working group meeting to inform development of the Straw Proposal.
- The ISO will take notes and produce reports of each of our working group meetings.

# Working Group Structure - Roles

- **Facilitator** – the group will be managed by a designated ISO facilitator.
  - Responsible for guiding discussion, driving toward resolution of issues and toward deliverables.
- **Scribe** – the group has a designated scribe.
  - Responsible for capturing discussion and evolution or proposal(s), publishing meeting summaries, and working jointly with the facilitator.
- **Working Group Coordinator** – oversees overall working groups progression.
  - Responsible for overseeing working group engagement and ensuring consistency in organization or working groups.
- **Working Group Participants** – provide ideas, proposals, input and vetting.
  - Working groups are open to all stakeholders.
  - ISO staff will also be participants in working group.

# July 24 Work Group Objectives

- Hear final stakeholder proposals for Problem Statement 1
- Hear stakeholder proposals for Problem Statement 2
- Discuss next steps for working groups and initiative
- Please note that we have limited time today to hear all proposals, so please refrain from repeating previous proposals. Thank you!

# Stakeholder Proposal Presentation Schedule

Time	Organization	Presenter
1:10pm – 1:35pm	Savion	Gizelle Wray, Matthew Picardi, Ian White
1:35pm – 2:00pm	LSA	Susan Schneider
2:00pm – 2:25pm	Vistra	Cathleen Colbert
2:25pm – 2:50pm	SDG&E	Keith Ban, Alan Soe
2:50pm – 3:15pm	Clearway	Sushant Barave
3:15pm – 3:40pm	Gridwell	Reanne Quadro
3:40pm – 3:50pm	Rev Renewables	Renae Steichen





# Efficiently allocating Interconnection Queue ("IX") scarcity

## Auctions & Bilateral Exchange Frameworks

Gizelle Wray  
Director, Regulatory Affairs – Savion, LLC

Matthew Picardi  
VP, Regulatory Affairs – SENA

Ian White  
Director, Regulatory Affairs – SENA

# Agenda

1. Challenges
2. Hosting IX Reservations
3. Future IX Auctions
4. Transition Mechanism
5. Bilateral Exchanges
6. Recap & Next Steps

**Note:** Concepts presented here are outlined in reply comments of Shell Energy North America (US), L.P., Shell New Energies US, LLC, and Savion, LLC (jointly “The Shell Companies”) in FERC Docket No. RM22-14-000, filed 14 December 2022.

# 1. Challenges: Lack of sufficient rationing mechanism

- Increased number of IX requests due to CA policy goals and economic forces
- Non-viable projects remain in queue indefinitely
- First-come, first-served (“FCFS”) model is not best suited for 2023 – 2045 energy system transformation

*Patience is the rationing mechanism under the status quo*

**Solution:** The Shell Companies propose the following to prospectively reform IX process in CAISO:

- Transition mechanism for FCFS to auction(s) frameworks
- Hosting capacity reservation aka “queue gating”
- Auctioning known IX capacity
- Extend auction concept for future expected IX capacity
- Bilateral interconnection queue position exchange

## 2. Queue Gating: Hosting Capacity Reservations (“HCR”)

### I. Auction to secure IX queue position

- Does not involve hosting capacity
  - Aimed at securing positions in the queue/study process
  - Would reduce number of “fishing” queue entries
  - We refer to this concept as HCR-QP for ‘Queue Position’

←and/or→

### II. Auction known amount of hosting capacity for IX

- Mirrors ‘FTR / CRR’ auction
- Determine capacity available for auction
  - E.g., yearly cycle, or open seasons
  - Winning bids receive a specific level of hosting capacity reservation
  - HCR – host capacity reservation

### 3. Forward HCR Auctions: future known capacity

#### Auction for known quantity of future capacity (FHCR)

- FHCR is a forward-looking concept, e.g., 5-10 years ahead
- IX customers would bid to include their application in future IX queues for specific study cycles
- Current and forward-looking auctions could coexist
- Paired with our Exchange proposal, developers will have the ability to sell previously-awarded queues positions

#### Benefits & Thoughts

- Auctions favor ready-to-proceed projects
  - May reduce speculative entry
- Increased certainty for Tx planning and future Tx construction
- Benefits IX customers by reducing time needed for (re)studies
- Improve coordination with and bridge gap between long term Tx planning and today's IX process, allowing for more efficient and equitable cost allocation
  - IX customers receive greater cost certainty for required Tx upgrades
- Auction proceeds could increase available funding for new Tx that otherwise may not reach cost/benefit threshold required

## 4. Transition Mechanism

### FCFS glidepath to HCR Auctions

- Without a transition mechanism, high risk of litigation, protests
- The Shell Companies agree CAISO cannot change IX process and apply retroactively to queue
- Accordingly, there is a need for a hard deadline a cutover to the replacement IX queue concepts

### Hard Deadline – Cutover upon FERC acceptance of replacement concept

- IX requests submitted before cutover would be processed under tariff requirements in place when originally queued
- Requests after the cutover date would become subject to auction constructs (or alternatives)

## 5. Bilateral Exchanges

### Queue positions are valuable, scarce resource

- Limited information about queue entry available; begets more IX requests
  - Lack of transparency
    - E.g., company, location, technology etc.
- Currently, only through an acquisition of an entire project company can queue positions change hands

### Proposed solution

- CAISO creates 'Interconnection Queue Exchange' page to existing bulletin board
  - Bilateral in nature – CAISO provides venue, provides open—access, transparency
  - Sellers could offer queue position on a per \$/MW basis
  - Bidders could post willingness to pay, project specifications, permits etc. and bid on queue positions
  - Provides liquidity – IX customers may sell queue position and not entire project company

## 5. Bilateral Exchanges – no regrets market-based solutions

### Enables the purchase/sale of queue positions

- Mechanism for developers with viable shovel ready projects to move forward rather than waiting for the ‘trickle down queue’
- Would require standardized due diligence timeline and review by Tx provider for redesignation
  - Window to exchange information on required technical characteristics
  - Upon completion and payment, Tx provider transfers the queue position to the new owner
- Existing queue positions cannot be forced into reordering; such that entity complies with tariff terms to maintain existing position
  - Forced reordering of existing could lead to litigation, delays
- Increases transparency, creates an efficient method for matching viable/ready projects with higher queue positions while respecting those in queue



## 6. Recap & Next Steps

### Recap

- Create HCR auctions as gating mechanism to align incentives and efficiently allocate the scarce resource
- Respect existing queue requests and pivot to new auction framework upon FERC acceptance
- Implement an exchange page on the CAISO bulletin board which seeks to increase transparency
  - Allows for IX queue transfers w/o sale of project company

### Next Steps

- Many details need fleshed out, requiring additional stakeholder work
  - Mechanics of auctions, auction proceeds, layering auctions with Tx planning
- Monitor direction in FERC Tx NOPR docket RM.22—14--0000
  - Potentially allow RTO/ISOs to create auctions individually



# 2023 IPE, Track 2 LSA Recommendations

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*WORKING GROUP MEETING #4*

*JULY 24<sup>TH</sup>, 2023*

# LSA Recommendations - general

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## Nature of LSA recommendations:

- LSA is not recommending an end-to-end solution here.
- LSA is recommending several enhancements that should be considered, regardless of the solutions chosen for the rest of the framework.
- These recommendations address both Problem Statement #1 and Problem Statement #2.

# LSA Recommendations - specific

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## LSA recommends the following enhancements:

- **Several process improvements** for interconnection procedures & TPD Allocation (**two** in this workshop, **two** in last workshop)
- **Supplementation of initial project study list**, to account for factors not considered in the screening methodology (last workshop)
- **Option B reform**, since that option may be used more often under a reformed framework (last workshop)
- **Retain 2021 IPE reforms to limit EO project time in queue** (this workshop)
- **Implement a one-time “tax holiday”** while addressing PTO concerns (this workshop)

# Recommended process improvements - overview

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- **Incorporate advanced technology into the interconnection process** (last workshop)
- **Address impossible Group B & D TPD retention conditions** (last workshop)
- **Expand the list of changes that do not require Material Modification Assessment (MMA) requests** (this workshop)
- **Increase MMA request timing certainty**

# Expand list of changes not requiring MMA requests

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- **Discussion Paper proposed limiting MMA request timing**, in an effort to limit the number of MMA requests. However, limiting the timing:
  - Will not necessarily limit the number.
  - Will likely slow down projects even more. Projects would have to delay implementation of needed changes (to equipment, project configurations, EPC contracting, PPA contracting, etc.).
- **Instead, the CAISO should:**
  - Reduce the number of MMA request by increasing changes not requiring MMA requests, i.e., adding to the list of such changes under the BPM Section 6.2.1 (Modifications Approved W/O Material Modification Assessment), Likely candidates include those granted nearly 100% of the time (inverter changes, gen-tie combinations, etc.).
  - Reduce CAISO/PTO processing by having developers enter into RIMS requests not requiring MMAs.
  - Refrain from imposing restrictions on project changes that can help move projects ahead in development, e.g., TPD transfers (where inter-project transfers were just approved recently).

# Increase MMA request timing certainty

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- The CAISO tariff sets 45/90CDs as a target for processing MMA requests, starting when the MMA request passes validation
- Submittal of valid requests is the developer's responsibility, but requests can languish awaiting initial validation, or review of submittals to remedy validation violations
- It is sometimes not clear whether MMA request approvals (and any conditions) could impact project milestones
- LSA recommends that the CAISO address these issues by providing:
  - A timeline for initial/subsequent validation reviews and responses from thje CAISO (e.g., 10BDs, like NRIP submittals)
  - Timely notice to developers if MMA requests delay project Initial Sync date or COD



# EO project removal from the queue

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- **In 2021 IPE Phase 2**, CAISO adopted a policy of closer enforcement of BPM for Generator Management, Section 6.5.2.1 (Time in Queue), in response to the question “Should Energy Only Projects Be Allowed to Stay in the Queue Forever?”
- **This provision applies to all projects regardless of deliverability status**, stating that a cluster-study project seeking an extended COD beyond 7 years in queue must:
  - “Clearly demonstrate” that engineering, permitting, and construction will take longer than the applicable maximum period;
  - Demonstrate that the circumstances that caused the delay were beyond the IC’s control; and
  - Demonstrate how the requested COD is achievable in light of any engineering, permitting and/or construction impediments.
- **More information is needed about the CAISO’s more recent enforcement efforts** for this and other existing rules (e.g., enforcement of GIA milestones) before implementing an EODS project viability demonstration.

# “Tax Holiday”

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- One-time withdrawal opportunity, with full Interconnection Financial Security release.
- Conditions could be imposed, e.g., no adverse downstream effects).
- The loss of security deposit forfeits should be outweighed by less ratepayer expense for unnecessary upgrades, and reduced timing and costs for remaining projects, enhancing their financial viability.

# Interconnection Process Enhancements 2023 Working Group Meeting #4

July 24, 2023

Cathleen Colbert  
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**Requirement for milestone updates for all project to maintain valid milestones within reasonable timeframe**

# Pattern of delayed projects not being updated



- There is a pattern of a set of projects that are not meeting their schedule dates and are not updating their online dates
- This can be observed from looking at the public queue's current online date
- As of June 21, 2023, 52 projects (~7k MW) in the queue have current on-line dates prior to July 6, 2023
- Vistra is concerned with this pattern and believe it needs addressed
- Some adverse outcomes are:
  - There could be larger impacts in specific areas
  - With magnitude of C14 and C15 that this will become unmanageable and result in less meaningful studies if the pattern continues
- Benefits of adding milestone update requirements:
  - Corrects for inaccuracies in interconnection studies<sup>1</sup>
  - Ensures more meaningful study results
  - Mitigates NRI team to correct infeasible NRI conversions (more manageable)

**Capacity Past Current On-Line Date**

Study Type	Energy Only	Full Capacity	Partial Capacity	Off-Peak	Grand Total
AMEND 39				111	111
C04				320	320
C06	1			150	151
C07		192			192
C08		835			835
C09	50	1,495			1,545
C10		700		100	800
C11	79	135		563	777
C12	105	350			455
C13	326	80		601	1,007
C14		425			425
FT	5				5
ISP	20	20			40
SGIP	20				20
SGIP-TC	12				12
TC		78			78
Source: CAISO Public Queue Report, July 6, 2023					
<b>Grand Total</b>	<b>618</b>	<b>4,310</b>		<b>1,734</b>	<b>6,773</b>

# New process to require valid milestones or else penalized or withdrawn/terminated



- Require milestone updates for every project past its schedule dates (milestones), otherwise CAISO will assess penalties and potentially terminate executed IA
  - Achievable schedule updates for all projects and all study processes, including alternative study options if adopted
  - Affects all interconnection projects because all projects have some ripple effect on the accuracy of the cluster studies and vice versa
    - Includes FT, ISP, SGIP, Serial LGIP, SGIP-TC, TC, AMEND 39, and Clusters
- Set deadlines for re-assessing and either confirming or updating achievable schedule dates for every project (e.g., rolling or scheduled?)
  - Limits Current Online updates to no longer than ten years from the queue date
- If IC fails to either confirm or update their achievable schedule dates by due date, then subject to a daily penalty for every day past the due date
  - Propose \$1,500/day as starting point for discussion
- Failure to pay penalties would result in forced withdrawal, ceasing any IA negotiations, or serve as basis for a FERC filing to terminate an executed IA
- With this process, all projects will be required to have schedule dates that are either achieved, limited in amount of delay (e.g., 30 days for rolling or six months for a bi-annual process), or on track to future date

1 Outdated milestones impact the meaningfulness of all interconnection studies whether cluster, independent, fast track, or limited operation studies

# Rolling or scheduled process?

- Should explore whether MMA is needed for updates to projects' achievable schedule dates, or if CAISO could support a more automated approach allowing IC to update schedule dates in RIMS
- There are at least two options for how the new process could work

Options	Pros	Cons
Rolling updates as milestones are missed	<ul style="list-style-type: none"> <li>• Most stringent process to maximize incentives to maintain accurate milestones</li> <li>• Best ensures accuracy of project details in any studies that may occur (e.g., LOS)</li> </ul>	<ul style="list-style-type: none"> <li>• Likely more difficult for CAISO to process rolling updates</li> <li>• Unclear if this makes it more difficult to try to automate</li> </ul>
Set deadlines in the GIDAP guideline and IA	<ul style="list-style-type: none"> <li>• Consolidates work accepting milestone updates to set period within the year</li> <li>• Provides guidance to IC on when it must perform a re-assessment of achievable schedule dates</li> <li>• Could streamline process steps such as sending out market notice</li> </ul>	<ul style="list-style-type: none"> <li>• Less accurate information in interconnection studies due to the scheduled rather than rolling updates</li> <li>• Softer incentive for projects to meet milestones</li> </ul>

- Discussion questions:
  - Are there other pros or cons with either option?
  - What type of review is needed for projects that move their achievable schedule dates, and would it be possible or prudent to accept automatically uploaded updates instead of requiring MMA?
  - Are there other options that you envision as more workable?

- To support all clusters and project types, require achievable schedule updates through a new submission process
  - Ideally uploads to RIMS directly, without MMA approval needed
- Appendix B achievable schedule dates proposed at minimum:
  - Environmental survey start
  - Environmental impact report submittal
  - Procurement of project equipment
  - Begin Construction Date
  - In-Service Date
  - Trial Operation Date
  - Commercial Operation Date
- Discussion questions:
  - We'd like to see some site exclusivity and site control dates, what do others think?
  - Any other schedule dates that would help inform progress?





## CAISO IPE Problem Statement #2

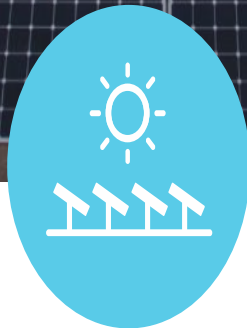
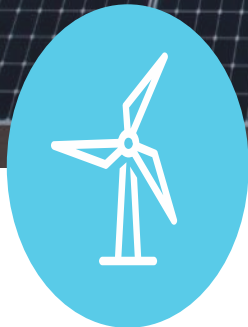
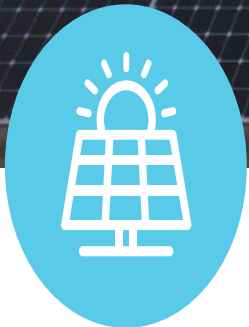


**SDGE Proposal**

# Problem Statement #2 (Managing the Queue)

- 1. Higher Commercial Viability Criteria Requirements – Post final study phase**
  - Continued demonstration of Site Exclusivity
  - Demonstration of any activities related to obtaining necessary permits from governmental agencies
  - Third IFS Postings required prior to negotiating GIA...due within 1.0 to 1.5 years from the final interconnection study or the project will be Withdrawn
  - Power Procurement Shortlist/Interest
- 2. Limit the number of MMA requests to no more than once every 12 months and make it “Fee-based” (not deposit) with a higher amount**
- 3. One-Time opportunity to Withdraw with no/minimal penalty for pre-QC12 projects without executed LGIAs**
- 4. Increase project Withdrawal penalty amount for QC15 and later projects**
- 5. Reduce the IR "Park" timelines**

# Clearway Energy Group Proposals: Interconnection Process Enhancements 2023



July 11 and 24, 2023

# Simplify MMA Process and LOS Framework

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The MMA process drains engineering resources from interconnection studies, taking an average of 86 days on MMA evaluation (plus we suspect 30+ days on data validation) for each request. There is an urgent need to increase the efficiency and accuracy of the MMA and LOS processes.

## Proposed Solutions/Ideas:

- Simplify modeling requirements for certain types of MMA requests: Several types of MMA or post-COD requests do not result in any change in modeling (e.g., requests to add grid-charging, COD extension, etc.). These requests should not have to go through model validation if the developer confirms that no modeling changes have occurred since the prior model submission.
- Facilitate timely validation of data: Within 15 days of MMA submittal, provide for a required data validation call amongst PTO engineers, CAISO engineers and developers to walk through deficiencies and cures. Currently, data validation adds weeks to the MMA process due to the administrative burden of multiple rounds of comments via Excel workbooks.
- Maintain MMA and LOS as independent processes: Given that CAISO has approved 99% of MMAs, it is important not to create more dependencies during critical phases of financing and construction. Developers should take the risk of failure of an MMA: if the MMA fails, then the LOS is rendered meaningless. There is no adverse impact to any other project if an LOS can proceed at the same time as an MMA. Developers can work with operations engineers to provide the latest modeling information.

# IPE 2023 Working Group 4 Proposals

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July 24, 2023

Raeann Quadro – Gridwell Consulting  
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# About Gridwell Consulting

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Analysis and advocacy consulting firm located in Sacramento, California – [www.gridwell.com](http://www.gridwell.com)

- Educate, model, advise, and advocate
- Seminars on CAISO market, resource adequacy, and battery storage resources
- Storage optimization and modeling for RFOs, due diligence, and bid strategy
- Interconnection evaluation and contract negotiation services

*“All Things CAISO”*



# Topic 1

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## INTERCONNECTION QUEUE MANAGEMENT

# What is the magnitude of the existing interconnection queue?

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- Excluded from this analysis:
  - Cluster 12 and beyond
  - Independent Study Process (ISP), Fast Track
  - Any COD date in the past was rounded to 7/19/2023

Years in Queue	Sum of MW Total	Count of Queue Position
24 to 19	852	4
18 to 14	2,778	14
13 to 9	5,474	38
<b>Subtotal</b>	<b>9,104</b>	<b>56</b>
8 to 4	18,577	87
<b>Grand Total</b>	<b>27,681</b>	<b>143</b>





# Interconnection queue analysis, cont'd

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- 56 projects representing ~9,000 MW are the projects we refer to as “lingering” in queue
  - 41 of them have executed GIAs
  - 27 are Energy Only (~3,000 MW)
- Currently, FCDS and PCDS projects are holding ~6,000 of valuable deliverability and should be subject to viability checks
- Energy Only projects can harm future projects by triggering unneeded upgrades in study reports, and should not be allowed to linger



# Proposal

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To manage the queue the CAISO must:

- Incentivize these projects to withdraw
  - Allow projects with executed GIAs a one-time opportunity to withdraw and receive all security funds back less costs spent or irrevocably committed
- Address projects that remain in the queue without indication of intent to proceed to COD
  - Reviewing projects for viability
- Control for future projects lingering in queue
  - 2021 IPE measures soon-to-be in place
  - Results of this 2023 IPE initiative
  - Ensure expeditious GIA negotiation processes and MMA processes



# Viability Criteria

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- Indications of viability:
  - Negotiation and execution of GIA (CAISO has existing authority to withdraw for failure to negotiate)
  - 3<sup>rd</sup> financial security posting (bringing security total to 100%)
  - Has provided written notice to proceed on network upgrades
  - Is paying all PTO invoices for work
  - Submit evidence of RFO participation
  - Submit real evidence of site exclusivity (some legacy projects are still using deposit in lieu)
  - Facility has achieved commercial operation for a portion of the total MW
  - More?



# Topic 2

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## MATERIAL MODIFICATION ASSESSMENTS

# MMA process drivers

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- CAISO MMA process exists to ensure all parties needs are met:
  - Interconnection Customer can modify project to improve marketability and meet state directives
  - CAISO and PTO ensure modifications are within tariff bounds and have current information on proposed projects for study base cases and compliance needs
- Current process harms queue management efforts:
  - Extended review timelines allow projects to linger with unexecuted GIAs due to outstanding modification requests
  - Long review timelines and perceived risk creates unnecessary financing and contracting uncertainty for developers, harming and prolonging these activities

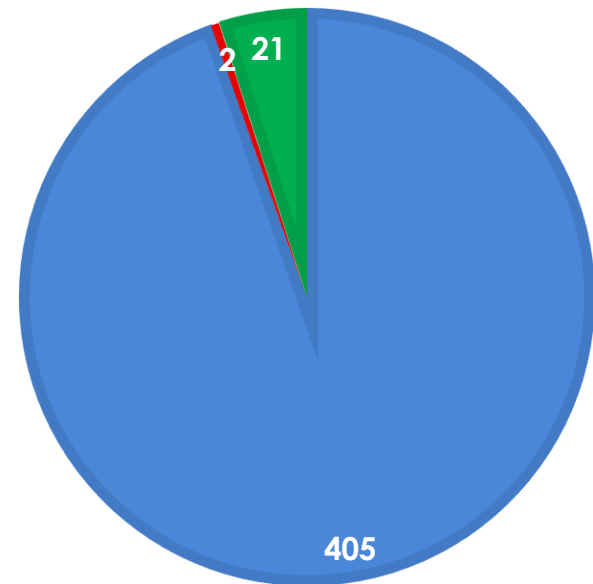


# MMA process efficiency

- There is almost no risk an MMA will be denied
- Staff labor is limited on all sides, none of the parties can afford this process from a value of labor standpoint
  - New inverter validation and proposed reduced technical data requirements will not improve this process enough

## CAISO MMA OUTCOMES 2017 - 2022

■ Approved ■ Denied ■ Conditionally Approved



Annual [MMA outcome reports](#), under “Modification Assessments” heading



# Reduce the MMA process

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- Shift to a paradigm where modifications are presumed approved
- Eliminate years-in-queue requirements
  - 7- or 10-year time caps do not drive a high-quality outcomes
  - CAISO queue shows many projects beyond these thresholds
- Projects are eligible for 1 post-GIA COD change and any number of PTO extensions and PPA alignment modifications
  - GIA milestones must be enforced



# Reduce the MMA process, cont'd

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- Projects with stale dates must provide new dates before close of each year to ensure study assumptions for the next year's work are accurate
- All inverter changes are approved, collection of detailed technical data is a milestone projects must meet, occurring when needed via new GIDAP rules or in the GIA
  - After CAISO and PTO review the data any identified issues can be resolved





# Reduce the MMA process, cont'd

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- Fuel Type changes require the IC to engage with queue management to “do the math” and ensure everyone is on the same page re: interconnection rights and deliverability allocation amounts
  - This is not a technical review and should only take a week to perform
- Complex interconnection facilities changes etc. still require an MMA and facilities study, and raise deposit to (\$30k)
  - 2022 MMA cost and timing data supports this increase



# Unexecuted GIAs

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- Enforcement of failure to negotiate tariff authority
- Ensure Site exclusivity is still valid (date check)
- Projects may not linger with unexecuted GIAs due to outstanding modification requests:
  - Projects with unexecuted GIAs get a one-time “quick math” PTO extension to minimum timelines, and then must execute GIAs
  - The quick math update allows may not delay posting for network upgrades needed by others (easy to identify in study results)
  - All other MMA types are approved 98% of the time and the GIA will be amended with the paperwork is done



# Topic 3

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REFLECTIONS ON WORKGROUP 2

# Reflections on work group 2

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- SDG&E framework could elegantly incorporate all approved 2023 IPE proposals
- Efficient IR thresholds and scoping phase could eliminate need for Phase II study, reducing timelines

## 1. Scoping Phase

- Simplified data package allows for faster studies

## 2. Cluster study phase

- Time-intensive studies are no longer performed in the Cluster Study Phase (moved to Operational Study)

## 3. Operational Study

- Only projects that have made it this far will be included in time-intensive studies

## 4. Post study phase – GIA and Construction

- Third posting due



# Reflections on work group 2

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- IR points system options suggested by stakeholders could prioritize:
  - IRs that can meet LCR needs (potentially with more points going to areas with more need)
  - Real site exclusivity
  - Expansions to existing facilities and sites
  - Commercial readiness (PPA status or other LSE endorsement)
  - Permit readiness
  - IRs that achieve specific resource diversity goals of the state or meet other criteria from AIOR's rubric
- **Cap on interconnection capacity MW amount in one IR (800 MW), larger proposals require additional Q#s, and thus increasing deposits and risk**



# Reflections on work group 2

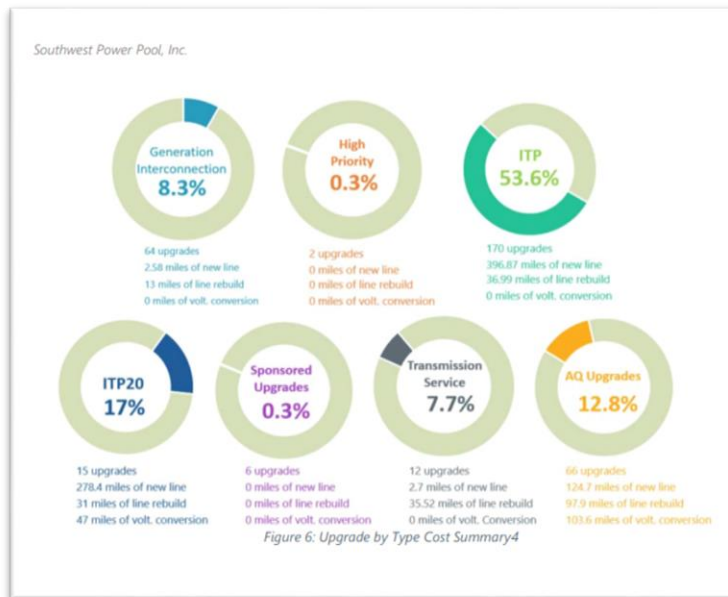
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- The PTO Subscription model, approved by the board with enthusiasm, is very similar to IPE proposal to create a network upgrade subscription model in the transmission planning process that informs interconnection process TPD prioritization



# Reflections on work group 2

- Transmission data accessibility example in [SPP report](#)
  - CAISO already collects this data in Transmission Development Forum



### RESPONSIVENESS REPORT

The table and figures below provide insight into the responsiveness of DTOs constructing Network Upgrades within SPP in the Quarterly Project Tracking Report. Note: Network Upgrade with status of "Identified", "Suspended", "Re-evaluation", "Within NTC Commitment Window", "Within NTC-C Project Estimate Window", and "RFP Issued" are excluded from this analysis.

Project Owner	Number of Upgrades	Number of Upgrades Reviewed	Reviewed %	In-Service Date Changes	ISD Change %	Cost Changes	Cost Change %
AEP	24	13	54%	9	38%	11	46%
BEPC	22	22	100%	18	82%	19	86%
EDE	4	4	100%	4	100%	4	100%
EKC	15	15	100%	4	27%	10	67%
EM	7	7	100%	5	71%	6	86%
EREC	2	0	0%	2	100%	1	50%
GRDA	1	0	0%	1	100%	1	100%
MRES	2	2	100%	2	100%	2	100%
MWE	10	4	40%	9	90%	9	90%
NETT	3	3	100%	2	67%	3	100%
NIPCO	2	0	0%	2	100%	2	100%
NPPD	27	23	85%	15	56%	14	52%
NWE	1	0	0%	1	100%	0	0%
OGG	42	4	10%	23	55%	22	52%
OPPD	8	0	0%	4	50%	5	63%
SEPC	3	3	100%	2	67%	3	100%
SPS	51	49	96%	12	24%	32	63%
TSGT	3	0	0%	1	33%	1	33%
TSOK	1	0	0%	1	100%	0	0%
WAPA	10	0	0%	7	70%	5	50%
WFEC	52	28	54%	40	77%	18	35%
<b>Total</b>	<b>290</b>	<b>177</b>	<b>61.0%</b>	<b>164</b>	<b>57%</b>	<b>168</b>	<b>58%</b>

Table 4: Responsiveness Summary







# CAISO Interconnection Process Enhancements

July 24, 2023





# Managing the queue – Notice to Proceed (NTP) process

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- Issue: A resource receives FCDS in TPD, executes LGIA, issues NTP to the PTO. The upgrade required to make this project deliverable was also triggered by a few other projects. PTO decides to delay construction of this upgrade until enough projects execute LGIA or issue NTP. This delay causes material commercial risk to the project who issued NTP, but now can't sell Resource Adequacy because it is waiting on the upgrade to be built. This project could be subject to financial penalties under its RA contract / PPA due to its inability to sell RA in time.

- Proposal:

1. When a developer executes LGIA and issues NTP to the PTO, the PTO should start planning for all upgrades that are required for a project to attain FCDS, including the upgrades that get triggered by a group of projects.

- REV believes it is just and reasonable for the PTO to provide a plan for the upgrades and not defer the project until some date unknown by the IC.
- If needed, the PTO could require the first project that issues NTP to post security for the entire network upgrade and not just the cost allocated to this project, so PTO has coverage for the financial obligations to build these upgrades. As more projects start executing GIAs and issuing NTPs, these projects could reimburse their portion of cost obligation to the first project.

2. NTP timelines are driven by Appendix B LGIA milestone, and we request that CAISO not set any additional deadlines beyond that. CAISO can track if these NTP follow LGIA schedule, and if PTOs are on track to build the upgrades in a timely manner for project to achieve commercial operation and its requested deliverability status

# Transmission Plan Deliverability (TPD) Allocation – Option B Reform

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- Current Status: Interconnection Customers (ICs) currently do not pursue Option B to self-fund area deliverability network upgrades.
- Proposal: If the IC does not receive Option A TPD allocation in the first year, then allow the IC a one-time chance to choose to self build (Option B) and participate in the next TPD cycle with higher priority. At a high level we see the following updates to CAISO's current processes:
  - Creation of a new sub-category under current TPD Allocation equivalent to current group A in TPD next cycle's affidavits to put the IC at a high priority for TPD.
  - Creation of a process to let the pool of generators behind ADNU agree to self fund and share cost.
- Applicability of this proposal: ADNUs that limit deliverability for a smaller number of generators. There could be additional criteria for identification of these ADNUs.
  - Criteria could include cost or timeline thresholds (e.g. IC only needs one or two ADNU with costs < \$30-\$50M and construction timelines satisfy CPUC procurement timelines, etc.) or be kept open.
- Upgrade cost allocation and reimbursement:
  - Cost of the upgrade will be shared by generators that decide to self fund the upgrade.
  - Could add option for partially funding upgrades and allow a window for developers to pool together to fund an ADNU (similar to Vistra subscriber model)
  - Open questions - Any CRR or reimbursement for the self-funded network upgrade? (LSA & Vistra)

# Thank you

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# NEXT STEPS

# IPE 2023 Track 2 Work Group Schedule

Date	Track 2 Milestone
07/24/2023	Working group session 4 (Virtual): Presentations and discussion on problem statement 2
08/01/2023	Working group session 5 (Hybrid): Agenda TBD
08/07/2023	Comments due
September 2023	Straw proposal posting

To implement process changes ahead of Cluster 15 phase I studies, the ISO seeks to present Track 2 to the Board of Governors in February 2024.

## Additional information

- Visit initiative webpage for more information:  
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Interconnection-process-enhancements-2023>
- If you have any questions, please contact  
[isostakeholderaffairs@caiso.com](mailto:isostakeholderaffairs@caiso.com)



- *Energy Matters* blog provides timely insights into ISO grid and market operations as well as other industry-related news <http://www.caiso.com/about/Pages/Blog/default.aspx>.

Read a recent article featured in the blog:

The image shows a preview of a blog article. On the left is a photograph of high-voltage power lines stretching across a green field with mountains in the background. The text "TRANSMISSION INTERCONNECTION" is overlaid on the bottom of the photo. To the right of the photo, the article details are listed: the date "June 28, 2023", the category "Transmission", the title "Working with stakeholders to find the right improvements on interconnections", a short summary paragraph, and a "READ MORE" link.

June 28, 2023  
*Transmission*

**Working with stakeholders to find the right improvements on interconnections**

Last December, when the California ISO signed a Memorandum of Understanding with the state's two principal energy entities, we renewed our commitment to make significant and transformative improvements to our role in resource planning coordination, transmission planning, interconnection queuing and management, and power procurement.

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