

Stakeholder Comments

Submitted by	Company	Date Submitted
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CESA appreciates this opportunity to submit comments on the 2018 Interconnection Process Enhancements (IPE) Issues Paper and supports the efforts by the California Independent System Operator (CAISO) to continue to work with stakeholders to clarify, improve, and streamline the resource interconnection study process.

CESA was an active participant in the Energy Storage Interconnection Initiative in 2014 that addressed how existing interconnection rules and processes could accommodate energy storage resources and appropriately study their capabilities and operating characteristics. Continued improvements are needed to enhance interconnection processes for energy storage resources that are being added to and potentially replacing existing generating facilities. The issue of hybrid energy storage generating facilities was importantly addressed in part in a technical bulletin issued on October 18, 2016 in response to questions and concerns from interconnection customers, but CESA believes that the 2018 IPE Initiative represents a good venue to address additional clarifications and potential supplemental interconnection processes to create a pathway for repowering projects with added energy storage. In these comments, CESA reiterates its support for including the issue of replacing entire existing generator facilities with energy storage in its scope, albeit with some modifications.

While not included in the proposed topics submission in August 2017, CESA respectfully requests that the CAISO also consider an additional interconnection study and process issue around flexible capacity deliverability status. Currently, it is unclear to interconnection customers on how the CAISO allocates deliverability for a resource that provides system versus flexible deliverability. In these comments, CESA provides further details on the clarifications sought and makes the case for why this may be an issue to be considered in the scope of the 2018 IPE Initiative. A separate deliverability study for the provision of flexible capacity (versus peaking energy) is being proposed in the CAISO's Flexible Resource Adequacy Criteria and Must-Offer Obligations (FRACMOO) Phase 2 Initiative.

CESA’s Comments by Section of the IPE Issue Paper

4. Deliverability

4.1 Transmission Plan Deliverability Allocation

CESA has no comment at this time.

4.2 Balance Sheet Financing

CESA has no comment at this time.

4.3 Participating in the Annual Full Capacity Deliverability Option

CESA has no comment at this time.

4.4 Change in Deliverability Status to Energy Only

CESA has no comment at this time.

4.5 Energy Only Projects’ Ability to Re-enter the CAISO Queue for Full Capacity

CESA has no comment at this time.

4.6 Options to Transfer Deliverability

CESA has no comment at this time.

4.7 Transparency on Availability of Deliverability

CESA has no comment at this time.

4.8 Commercial Viability Criteria – Continuous Compliance Obligation

CESA has no comment at this time.

4.9 Interim Deliverability Status

CESA has no comment at this time.

4.10 Effective Load Carrying Capacity

CESA has no comment at this time.

4.11 Cancellation or Delay of CAISO Approved Transmission Projects

CESA has no comment at this time.

5. Energy Storage

5.1 Distributed Energy Resources

CESA agrees with the CAISO that clarifications around the interconnection, jurisdictional, and market participation requirements of distributed energy resources (DERs) are already being addressed in the Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Initiative, in close coordination with

the California Public Utilities Commission’s (CPUC) Energy Storage proceeding (R.15-03-011). Issues around cross-jurisdictional multiple-use applications and market participation pathways are appropriately being addressed in those proceedings and initiatives. A lingering issue, however, is to further develop the capabilities for Distributed Energy Resource Aggregations (DERA) to have RA value. For this matter, CESA is concerned that the existing “RA Deliverability for DG” rules are not timely enough to work for developers looking ahead to develop DERAs with deliverability.

5.2 Replacing Entire Existing Generator Facilities with Storage

As CESA noted in previous comments on potential 2018 IPE Initiative topics,¹ CESA believes that there is a major opportunity to consider expedited interconnection processes for the complete replacement of an existing generating unit with interconnection service in place, especially in light of policy and market forces driving underutilized interconnection capacity. While a “bright-line test” is not established to determine how much energy storage can replace a “de minimus” amount of capacity of the existing generating facility, the issue paper discusses how a complete replacement of the existing generating facility could constitute a substantial change to the “electrical characteristics” of the generating facility. According to Section 12.2 of the Generator Management Business Practice Manual (BPM), a substantial change is defined by either a change in fuel source or “adverse impacts on the transmission system” – the latter which can only be determined through power flow analyses that are not conducted under the material modification assessment (MMA) process.² While we understand this definition, CESA believes the concept and triggers for needing additional study for energy should link to: (i) whether the generation from the resource could be materially different; and (ii) whether the charging of the resource requires study. For (i), CESA expects the full deliverability and nature of studies for dispatchable fossil plants are such that additional study for dispatchable energy storage discharges may be unnecessary. This would not, however, apply to cases of replacing or adding storage to solar, where dispatchability at any given time of day was presumably neither assumed nor studied in the past interconnection work.

Additionally, there are unclear processes and pathways for repowered projects where the paired existing generating facility is retired and is no longer operational. The Generator Management BPM outlines a process by which a repowered project would be approved and interconnected under a shorter Interconnection Facility Study so long as the request adheres to the requirements under BPM Section 12.1-12.4, but it assumes that the repowered portion of the project will always have the paired existing generating facility online. Due to the requirement that the repowered portion of the project having to utilize the same fuel source as the paired generating unit, it is unclear what would happen to the repowered portion of the project if the paired generating unit retires, thus eliminating the “same” fuel source required for repowering projects. For example, if a 100-MW generating facility is repowered with 10 MW of energy storage and the remaining 90 MW generating facility is retired at a later time, can the 10 MW of energy storage remain online? Does this energy storage resource need to retire as well given that its required fuel source is now retired? Finally, if the building of the old generation source is retained but never turned on (*i.e.*, the old resource is functionally retired), CESA understands that no

¹ CESA Comments on CAISO Interconnection Process Enhancement Topics, submitted on August 30, 2017, pp. 2-4.

² These “adverse impacts” include adverse flow impacts, short circuit duty impacts, or angular/voltage stability impact.

further study is needed. But if the old resource is physically removed and retired, then a study is needed. This simple issue highlights how the rules can be imperfect at times.

CESA recommends that the CAISO provide further clarity and transparency on the repowering process around these retirement scenarios, as the current rules and processes may unreasonably cause the repowered energy storage resource to retire along with its paired existing generating facility. The CAISO acknowledged at the January 24, 2018 stakeholder meeting that it has allowed for partial repowering of a *de minimis* portion of the existing interconnection capacity.³ Whether such a *de minimis* capacity of energy storage to remain online despite a change in fuel source with the retirement of its paired existing generating facility would be a worthwhile technical discussion in the 2018 IPE Initiative. In the example above, if 10 MW of energy storage was found to not have adverse impacts on the transmission system (or only have *de minimis* impacts) when repowered with a 90-MW generating facility, a facility study may also reveal that the standalone 10-MW energy storage facility following the retirement of the paired 90-MW existing generating facility has *de minimis* adverse impacts on the transmission system, despite charging from the grid. Understandably, while a lower-intensity charging study may be needed, the replacement energy storage resource would also fall well within the approved interconnection capacity in the generator interconnection agreement (GIA).

If helpful, CESA recommends that the CAISO define what a *de minimis* amount of replacement energy storage would be for these ‘repower-and-retire’ scenarios where a MMA and facility study process would be sufficient to review and approve the continued operation of energy storage resources. Presumably, this *de minimis* amount should be as high as reasonable in order to remove barriers for energy storage additions or resource replacements related to retirements. In the example above, would it be possible for 50 MW of energy storage, which was approved for repowering 50 MW of a 100-MW existing generating facility, to stay online when the existing generating facility retires entirely?

As mentioned above, CESA also wishes to broaden the scope of this issue to consider whether the same fuel source requirement is necessary for repowering requests, considering each of the above ‘repower-and-retire’ scenarios are potentially limited by this requirement. CESA also requests that the CAISO consider whether there is process by which some deliverability from the existing generating facility can be transferred to the replacement resource, since energy storage repowers would be added with energy-only deliverability status. Considering existing deliverability rights are retained for up to three years following the retirement of the generating facility, there is a time-limited opportunity for replacement resources to have the same deliverability.

Overall, CESA believes it is important to create a predictable, clear, and transparent process around these ‘repower-and-retire’ scenarios as these situations are likely to occur with greater frequency and because it is not clear to interconnection customers how the CAISO assesses these case-by-case repower requests through the MMA process. Such CAISO action will also support efforts to ensure the CAISO has sufficiently flexible resources. While the CAISO noted in its issue paper that it does not plan

³ The CAISO does not define *de minimis* but said at the stakeholder meeting that they have typically approved repowering of up to 5% of the generating facility, and suggested it is open to 10% of the generating facility, which is the amount allowed in the annual downsizing process.

to include this topic within the scope of the 2018 IPE Initiative, CESA recommends that the CAISO reassess this determination. Potentially, with reasonable study and modification processes for repowered projects, the CPUC and CAISO has an opportunity to replace retiring resources with more cost-effective energy storage resources.

5.3 Deliverability Assessment for Energy Storage Facilities

CESA appreciates the CAISO's clarifications on the current deliverability assessments for energy storage and now holds a better understanding of the CAISO's study methodology. While the charging study assessment does not need to be included in the 2018 IPE Initiative scope, CESA instead proposes that the CAISO provide clarifications on how deliverability is allocated between system and flexible capacity deliverability. CESA understands that full capacity deliverability status is determined based on the output of the generating facility up to its net qualifying capacity. To qualify as a Flexible Resource Adequacy (RA) resource, a resource must also be qualified for System or Local RA and thus is studied for full capacity and partial capacity deliverability status for on-peak and off-peak deliverability. However, it is unclear from the current processes regarding how on-peak and off-peak deliverability assessments contribute to the deliverability to meet the largest monthly three-hour net load ramps and how a resource's net qualifying capacity is apportioned between meeting on-peak needs versus ramping needs.

In a separate initiative, the Flexible RA Capacity Must-Offer Obligation (FRACMOO) Phase 2 Initiative, the CAISO is working with stakeholders to develop a new flexible capacity framework focused on a suite of new products that ensures that flexible capacity resources are made available to the CAISO to meet operational needs. In a recent Revised Flexible Capacity Framework issued on January 31, 2018, the CAISO proposes to include a flexible capacity deliverability study to "confirm that flexible capacity is deliverable during the times of greatest flexibility needs"⁴ since the current deliverability assessment does not fully capture a resource's ability to deliver capacity during the defined flexible capacity needs. While it is premature to consider a new flexible capacity deliverability assessment here in this 2018 IPE Initiative at this time, given that the revised framework is yet to be approved by the CAISO Board of Governors, it may be appropriate to more fully understand how the CAISO allocates deliverability for effective flexible capacity using a deliverability assessment that focuses on net qualifying capacity to deliver on-peak capacity. With a better understanding of these assessments and deliverability allocation methodologies, CESA believes that it may allow stakeholders to seek improvements to these methodologies in the 2018 IPE Initiative.

6. Generator Interconnection Agreements

6.1 Suspension Notice

CESA has no comment at this time.

⁴ FRACMOO Phase 2 Revised Flexible Capacity Framework, published on January 31, 2018, p. 35.

6.2 Affected Participating Transmission Owner

CESA has no comment at this time.

6.3 Clarify New Resource Interconnection Requirements

CESA has no comment at this time.

6.4 Ride-through Requirements for Inverter based Generation

CESA has no comment at this time.

6.5 Affected System Options

CESA has no comment at this time.

6.6 Modeling Data Requirements

CESA has no comment at this time.

7. Interconnection Financial Security and Cost Responsibility

7.1 Maximum Cost Responsibility for NUs and Potential NUs

CESA has no comment at this time.

7.2 ITCC for Non-cash Reimbursement Network Upgrade Costs

CESA has no comment at this time.

7.3 Financial Security Postings and Non-Refundable Amounts

CESA has no comment at this time.

7.4 Queue Clearing Measures

CESA has no comment at this time.

7.5 Shared SANU and SANU Posting Criteria Issues

CESA has no comment at this time.

7.6 Clarification on Posting Requirements for PTOs

CESA has no comment at this time.

7.7 Reliability Network Upgrade Reimbursement Cap

CESA has no comment at this time.

7.8 Reimbursement for Network Upgrades

CESA has no comment at this time.

8. Interconnection Request

8.1 Study Agreement

CESA has no comment at this time.

8.2 Revisions to Queue Entry Requirements

CESA has no comment at this time.

8.3 Master Planned Projects (Open Ended and Serial Projects)

CESA has no comment at this time.

8.4 Project Name Publication

CESA has no comment at this time.

8.5 Interconnection Request Application Enhancements

CESA has no comment at this time.

8.6 FERC Order No. 877

CESA has no comment at this time.

9. Modifications

9.1 Timing of Technology Changes

CESA supports the inclusion of this issue in the 2018 IPE Initiative scope. As the CAISO observes and anticipates, there will be an increasing frequency of technology and fuel change requests from interconnection customers. CESA also agrees with the CAISO that it may be appropriate to establish a cut-off time in which a project cannot make technology or fuel type changes due to the impacts it would have on later-queue projects and on network upgrades, if the electrical characteristics of the project changes. At the same time, a reasonable time frame and flexibility should be granted to interconnection customers to make these technology or fuel type changes, especially as technologies, policies, and grid conditions change during the time in which projects remain in the interconnection queue. CESA thus supports the inclusion of this topic in the scope as it presents real-world and increasingly frequent challenges for interconnection customers.

9.2 Commercial Viability – PPA Path Clarification

CESA has no comment at this time.

9.3 PPA Transparency

CESA has no comment at this time.

9.4 Increase Repowering and Serial Re-Study Deposit

CESA has no comment at this time.

9.5 Clarify Measure for Modifications After COD

CESA has no comment at this time.

9.6 Short Circuit Duty Contribution Criteria for Repower Projects

CESA supports the inclusion of this issue in the 2018 IPE Initiative scope.

9.7 Material Modification for Parked Projects

CESA has no comment at this time.

10. Additional Comments

CESA appreciates the CAISO's efforts to continue to improve interconnection study and related processes. CESA aims to work with the CAISO to better understand its assessment methodologies and study processes and provide constructive input on where we view improvements can be made.