Outstanding Interconnection Issues List

June 1, 2017

CESA believes that the following outstanding interconnection issues should be scoped into the successor proceeding for Rule 21 interconnection processes and review. Each of the topics are scored in importance from 1-5 (1 less important, 5 most important) and in terms of when these issues should be addressed (short, medium, and long term).

1. **Integrated Capacity Analysis (ICA)**
    a. *Consideration of how the ICA can be used in Rule 21 to further streamline the interconnection process* ***(Importance = 5, Short Term)***
        i. The ICAs should show operational modes and profiles at given locations where there is minimal impact on the system and where upgrades would not be triggered but rather deferred. CESA understands that this issue is already planned to be included in the successor proceeding, but it should be broad enough to capture how the ICA would be incorporated into the Rule 21 interconnection process for energy storage systems, which can increase hosting capacity.
        ii. Specifically, it should identify fast-track review eligibility for energy storage systems with a specific operational profile that can be demonstrated to increase hosting capacity on any given circuit or line. For example, energy storage systems that charge from 12-5pm would increase hosting capacity on a high-solar circuit for additional distributed generation, thereby increasing ICA values. These systems should be able to bypass certain screens, or at the very least, undergo cursory review.
2. **Coordination with the CAISO on jurisdictional questions for energy storage systems participating in the wholesale market**
    a. *Consideration of how interconnection requirements and metering options proposed and adopted in other proceedings are implemented in Rule 21* ***(Importance = 5, Short Term)***
        i. There are a number of issues from the Energy Storage & Distributed Energy Resources (ESDER) Initiative at the CAISO that will have implications in this proceeding. For PDR resources, the CPUC must address the issue of meter ownership and certification requirements for meters used for CAISO settlement purposes since the CAISO has deferred this issue to the CPUC for resolution.
        ii. The Energy Storage (R.15-03-011) proceeding is developing metering, interconnection, cost recovery, and market participation rules for energy storage systems engaged in multiple-use applications. There will be important outcomes from this proceeding on retail metering placement in relation to the CAISO wholesale meter in order to prevent 'double counting' of energy as both wholesale and retail. Any metering configurations adopted in this proceeding

will need to be implemented in this proceeding. In addition, metering configurations may be deferred to this proceeding.

iii. The Energy Storage (R.15-03-011) proceeding is also considering metering configurations for station power, which will have significant impacts on project design and interconnection. Specifics on these issues may again be deferred to this proceeding.

iv. Generally, CESA supports multiple metering options for energy storage systems, with the best and most cost-effective option depending on the use case and technology. There may still be some pre-approved metering options, which may need to be addressed in this proceeding. A placeholder for these issues should be established in this proceeding.

3. Wholesale Distribution Access Tariff (WDAT) Transitions

a. Consideration of how the Rule 21 and Wholesale Distribution Access Tariff (WDAT) transitions can be streamlined and coordinated ***(Importance = 4, Medium Term)***

i. The CPUC should address streamlining the interface between Rule 21 and WDAT queue management processes. An applicant should be able to transfer immediately from the Rule 21 distribution queue to the WDAT transmission queue if study results indicate that is appropriate, without having to wait for the next open window. Conversely, if study results indicate that it is appropriate for an applicant to transfer to the Rule 21 queue from the WDAT queue it should be able to do so immediately without waiting for the next acceptance window to open.

ii. For exporting energy storage systems, a WDAT 'lite' process should be developed. Already established rules for RA Deliverability for Distributed Generation, a CAISO initiative, should be used to inform these exercises. Only in cases where BTM resources clearly show the need for a full WDAT process should the full WDAT process be required.

iii. An interconnection process for aggregations of resources (as a single WDAT) could be developed. The WDAT lite or WDAT fast track option could import the study results from the Rule 21 interconnection study process and agreement to streamline review and avoid duplicative efforts. Alternatively, within a certain cap, exemptions to the WDAT interconnection process could be made for aggregated resources under some megawatt capacity. The appropriate studies would need to be conducted to set such a threshold.

4. Expedited interconnection dispute resolution process

a. Establish the framework and governing structure for the technical advisory panel ***(Importance = 5, Short Term)***

b. Integrate the expedited dispute resolution process into the Rule 21 process workflow ***(Importance = 5, Short Term)***

c. *Establish evaluation criteria and process for Expedited Process' performance in shortening interconnection timeframes, reducing uncertainty in the interconnection process, and reducing project interconnection costs* ***(Importance = 5, Medium Term)***

5. Public Interconnection Guides

a. *Re-evaluate definition of "minimal impact"* ***(Importance = 3, Medium Term)***
   i. The CPUC should consider whether Rule 2 and 3 thresholds for minimal load impact could be imported into Rule 21 and its load review processes. Any discussions regarding Rule 2 and 3 were deemed out of scope in the preceding proceeding. Rule 2 and 3 thresholds could be used to define "minimal impact" and be applied to load review and re-study processes.

b. *Re-evaluate load modification study trigger for increases in customer load* ***(Importance = 4, Short Term)***
   i. Currently, some IOUs trigger a three-month load modification study for any possible increase in customer peak load from charging load, regardless of whether it has minimal impact on the grid. For example, a 5-kW battery addition should not be considered a 'material change' in load as long as there is a credible strategy for charging from the grid without increasing home load. These re-study processes are cumbersome for smaller systems.

c. *Improving the IOUs' load review processes* ***(Importance = 3, Medium Term)***
   i. The Load Review Public Interconnection Guide provides operational (charging) modes by which energy storage systems can undergo cursory load review. This Guide could potentially be enhanced to specify charging periods that the IOUs identify as having minimal impact to the grid and therefore undergo cursory review.
   ii. Potentially, these charging periods should align with super-off-peak rates being proposed by each of the IOUs. Some alignment of these rates with specified charging periods would facilitate a more expedited interconnection process.

d. *Streamlining approval and validation processes to verify IOUs' load review* ***(Importance = 3, Long Term)***
   i. Protocols on the approval and validation process need to be streamlined and coordinated in order to ensure that applicants do not incur unduly burdensome or unnecessary costs during the interconnection study process. A process to verify the IOUs' load review processes would support increased transparency and help developers understand why or why not their projects are being fast-tracked for interconnection review.

e. *Creating an overall Interconnection Guide for both load and generation review* ***(Importance = 4, Medium Term)***
   i. Similar transparency and flexibility in modifying the load review process is needed on the generation side. The principle of allowing fast-track review for load (charging) that has minimal impact on the grid could apply to generation (discharging) of the energy storage system.

f. *Developing streamlined interconnection review process for energy storage systems with different operational profiles and configurations* ***(Importance = 4, Medium Term)***
    i. Overall, the IOUs and project developers should continue to work toward pre-approved (and standardized) operational configurations and profiles that merit fast-track review. While it does not limit any project to specific operational configurations or profiles, it would give applicants an option to follow pre-approved configurations and profiles to qualify for fast-track review. Other operational profiles needing streamlined interconnection review processes include exporting energy storage, wholesale participating storage, non-exporting NEM-paired storage, and energy storage that does not export more than allowed for NEM generator.

g. *Re-evaluate how 1-MW threshold for the telemetry requirement is enforced* ***(Importance = 4, Short Term)***
    i. The IOUs currently use the additive, rather than the net, nameplate capacity of the solar-plus-storage systems to determine whether the threshold is exceeded and thus telemetry is required. Instead, the IOUs should look at the operational profile of the system. This should be re-visited and discussed in this proceeding as the costs of telemetry is very high, especially for small systems.

h. *Developing mobile inverter standards for interconnection* ***(Importance = 3, Long Term)***
    i. A new section should be added to Section H.3 addressing acceptable EVSE mobile inverter technology. When the standard is finalized, SAE Standard J 3072 certified mobile equipment should be deemed acceptable for interconnection under Rule 21.

6. Other potential issues

a. *Incorporating the recommendations from the Smart Inverter Working Group* ***(Importance = 3, Medium Term)***

b. *Metering options for DC-coupled NEM-paired storage systems* ***(Importance = 4, Medium Term)***