Notes from August 10, 2022, RA Reform Workshop

The topic was hybrid and co-located resources.

PG&E presented first. (See slides.). PG&E proposed to largely keep the existing methodology with the following changes: (1) generation profile used for charging capacity would use new counting rules (e.g. exceedance), (2) account for charging losses, (3) account for all onsite renewable capacity in charging sufficiency test, even if it is not deliverable, and (4) use new counting rules for excess charging capacity. PG&E said partial delivery applies to cases where renewable resources are paired with storage, e.g., hybrid co-located, and does not apply to standalone solar that does not have full deliverability. Standalone renewables and standalone storage would get the same QC value for RA as determined in this RA reform process. Gridwell said it appeared that there would be an inconsistency if solar counts for less if it is co-located vs. standalone. PG&E said a metric would have to be developed for each month per its slide 5. Gridwell said the CAISO was discussing a Masterfile flag for whether storage can charge from the grid. The CAISO said this was true in the context of the ITC but that the recently passes Inflation Reduction Act might change that once the regulations are developed.

MRP asked if exceedance could be used for co-located resources. PG&E replied that if you don’t use storage consistently, there would be a low value with exceedance if storage does not charge when expected. MRP said if there were one exceedance calculation for each hour it would show capacity when the owner finds the most value. PG&E replied that it would show value in the hour used but what would happen if it was used in another hour is that the value would be zero.

The CAISO then said that it was not sure if a “yes/no” charging field in the Masterfile would be sufficient; it would also need information on the percentage of charging from the grid. It also said that only resources that are deliverable can be shown for RA. Only deliverable solar can be used to charge storage, not energy-only.

PG&E said regarding the percentage of charging from the grid that the existing method assumes no grid charging and penalizes grid charging. Partly deliverable resources can only provide RA for charging for the part that is deliverable. In hybrid co-located if the renewable resource can charge the storage, it should be able to count for RA if the energy is not deliverable. The CAISO totally opposed this and said it would never allow energy-only to count for RA. Gridwell asked why it could not count for RA for the charging sufficiency test if it is deliverable to the storage. PG&E agreed that should be able to count. The CAISO said it did not know what that meant. It does not do deliverability studies for delivery to batteries. CalCCA said the issue is what is deliverable from the point of interconnection. In RA, we have gone to what counts in the peak hour to what counts in every hour.

CESA disagreed with CAISO on the deliverability issue for the charging sufficiency test. It said a hybrid or co-located resource is a single resource and the issue is whether you can separately dispatch the components. How do we account for energy sufficiency for which verification is required on top of the RA requirement? Energy sufficiency is new. Can it be met with energy-only resources? If a paired resource is completely deliverable, will excess renewable output count for RA? If renewable is not fully deliverable and storage is fully deliverable, what counts for RA? PG&E said it would have to consider this.

IEP asked about hourly showing of solar. If standalone storage, the LSE will have to show when it can charge and discharge. CESA disagreed. PG&E said the LSE must show sufficient capacity to charge. IEP said does that mean it does not have to show in each hour that it can charge and serve load? PG&E said it must be able to meet load in every hour and show aggregated resources to charge storage. IEP asked if the LSE had to show in which hours it charged. PG&E said yes. CalCCA said the LSE does not have to show storage energy in specific hours, just sufficient capacity in all the hours. IEP said what would happen if the LSE had a lot of excess energy in one hour, but the storage could not be charged that fast. PG&E said this was a good point and that once there are a lot of such resources we can see if they are performing differently than at present and adjust.

CalWEA asked CAISO if solar resources in hybrid/co-located configurations could not even charge their own batteries if they were energy-only, citing a case of distributed interconnected storage resources where there are distribution restrictions. Restrictions could be caused by insufficient transmission or distribution. PG&E asked if this was a standalone resource. CalWEA said yes. PG&E said this got into deliverability issues that it had not considered.

PCE asked if there could be solar shortfalls in some months but not others and PG&E agreed any assessment would be month by month. PCE said the hours in which storage is charged is important because it is using storage for shaping.

CESA presented next. (See slides.). CESA first discussed the storage resource characteristics that should be included in the master resource database and recommended sourcing the information from bilateral contracts entered into by LSEs. It said maximum continuous energy sets the energy requirement for charging. CalPA asked about the number of hours for charging. CAISO asked how maximum continuous energy accounts for round trip efficiency. CESA said CAISO operators say maximum state of charge already accounts for energy needed to charge including losses. It thought this applied to both charging and discharging inefficiencies. Gridwell asked how they accounted for efficiency on the charging side and CESA said it understood that maximum continuous energy accounts for this but if it does not, that should be incorporated. Gridwell said the CAISO BPM does not account for both, but it could be that developers overbuilt to meet contractual obligations. Their concern was what is available to the CAISO.

CESA then proposed to modify the existing QC methodology for hybrids by:

1. Replacing ELCC with exceedance for the VER component;
2. Developing an additive approach for unrestricted grid-charging configurations; and
3. Including a charging sufficiency evaluation dependent on energy source.

CESA said it does not propose the use of exceedance of their entire hybrid resources, just the VER part. CESA also proposed a system-wide charging sufficiency test, called the initial energy test (IET), that would only result in an LSE-by-LSE if the system wide test showed an insufficiency.

SCE said (regarding using energy-only resources for the charging sufficiency test) that the system was designed to be reliable if only RA resources show up. CESA said a paired asset with partial deliverability could charge storage exclusively onsite. CESA slide 16 says if the sum of energy-only resources is greater than the charging need, there should be sufficient energy for charging even if it does not meet RA requirements. Others disagreed, saying there could be congestion that prevents access to the energy. CESA asked the LSEs about the burden of making a showing of energy sufficiency on an LSE basis and CalCCA said it shared the concern about constraints on the transmission system. CESA said fuel sufficiency is a new issue and it is concerned about fairness between paired and not paired resources. SCE responded that practically a resource that can only charge from a paired renewable resource is not as good as one that can charge differently. CESA said a paired resource can charge with energy-only.

SEIA presented its last 3 slides. (See slides.). Its main issue is to enable RA rules to account for the differences between DC-coupled and AC-coupled hybrid resources. LSEs with DC-coupled hybrids should be able to show “clipped” energy used to charge storage to meet the charging sufficiency test. This would not be exported to the grid. If the output was forecast through the inverter there would appear to be less energy.