# Stakeholder Comments Template

| Submitted by | Company | Date Submitted |
|---|---|---|
| Spence Gerber<br>sgerber@olivineinc.com<br>916.259.3690<br>Robert Anderson<br>randerson@olivineinc.com<br>510.545.2556 | Olivine, Inc | August 18, 2015 |

Please use this template to provide your comments on the Issue Paper and Straw Proposal posted on July 30, 2015 and as supplemented by the presentation and discussion during the stakeholder web conference held on August 6, 2015.

Submit comments to InitiativeComments@caiso.com

Comments are due August 18, 2015 by 5:00pm

All documents for the energy storage and distributed energy resources (ESDER) initiative, including the July 30, 2015 Issue Paper and Straw Proposal and the presentation discussed during the August 6, 2015 stakeholder web conference, are available on the webpage for the ESDER initiative at: http://www.caiso.com/informed/Pages/StakeholderProcesses/EnergyStorage_AggregatedDistributedEnergyResources.aspx

## ***Non-generator resources (NGR) enhancements***

Please provide your comments in each of the four areas of proposed NGR enhancement.

1. Update documentation on NGR to capture material and clarifications compiled for April education forums.

Comments:

*Olivine believes that this can be relatively straight forward and given the limited experience of NGRs for both SC's and the CAISO, it would be valuable to have a "resource participation primer" to best ensure that everyone is on the same page.*

2. Clarify how ISO uses state of charge (SOC) in market optimization.

Comments:

*Aside from the notion that the market co-optimizes Energy, Ancillary Services and Congestion for least cost dispatch, the details of market optimization are fairly opaque. Numerical examples would be valuable and should include descriptions of the interplay between capacity and energy in sequential hours. This should go one step further (and possibly as a part of updated NGR documentation) to include details on how SOC is used in the real-time calculation of resource AGC for NGR-REM in non-stress and stress scenarios.*

3. Evaluate initial SOC as a submitted parameter in the day-ahead market.

Comments:

*While not a perfect solution to replacing the current stale last known SOC 48 hour lag, it provides an opportunity for the resource owner to best represent the anticipated SOC at a given point based on their forecasting algorithms. It would be most effective if the initial SOC were an hour by hour value (hourly rather than daily as the issue paper implies at the bottom of page 12) since multiple purpose resources will have different SOC at different points in the day. One situation that warrants further clarification is if/how the CAISO STUC uses telemetered SOC values that are received during hours when a resource might not be participating or active in the market. E.g does the 00:00:04 SOC value influence a resource's STUC at 07:00 when market activity starts or is a SOC value closer to 06:00 utilized?*

4. Evaluate option to not provide energy limits or have the ISO co-optimize an NGR based on state of charge.

Comments:

*The first full sentence at the top of page 14 states "This may be especially true for sub-resource aggregations which may be composed of multiple types of resources or for resources that are constantly changing based on aggregations where sub-resources may be entering or departing the resource aggregation. "*

*It is not clear as to whether this means resource configuration varying in "real-time" or at the registration/RDT level. The DERPA will require that an attachment be updated every time an aggregated resource make up changes. IS something different is being considered given this statement?*

***PDR/RDRR enhancements – alternative baseline methodologies***

Please provide your comments in each of the two areas of proposed enhancement.

1. Develop meter generator output (MGO) as a new ISO baseline methodology.

Comments:

*This is an important requirement to more accurately measure the performance of BTM technologies that are the basis for resource composition but not accurately represented against a whole premise meter.*

*In supporting this methodology it is crucial that such a meter is not considered the demarcation point between retail and wholesale as that must remain at the whole premises meter; and, that negative meter reads are valid for this purpose. For example, a storage asset may discharge at X kW where X < whole premises load and is therefore not exporting to the distribution grid. As such, this is conventional (non-exporting) demand response yet the metered values would appear negative to the CAISO. This is not a mathematical issue, but may require attestations or evidence of the non-exporting nature of the sub-metered asset (e.g., a Rule 21 Interconnection agreement that specified the non-exporting nature of the asset).*

2. Develop additional detail regarding the "ISO Type 2" baseline methodology (i.e., provision of statistically derived meter data) and document that in the appropriate BPMs.

Comments:

*Currently there is no guidance regarding what the CAISO might consider/accept or approve as a Type 2 baseline methodology nor any process to submit for approval. Further development and guidance for this process is overdue.*

***Non-resource adequacy multiple use applications***

Please provide your comments on each of the two non-RA scenarios the ISO has proposed to address.

*Olivine believes this element of the initiative, whether encompassing RA or not, to be an important aspect to maximizing the grid value for energy storage. To do so, we need to enable aggregations of customer-sited (behind the meter) assets that can provide services for customer bill mitigation, utility distribution value, and wholesale ancillary services, with access to the full range of such ancillary services. The issue paper implies that the current cadre of resource types supports this construct but Olivine sees a need to either develop a new resource type (such as PDR/NGR hybrid) or expand the parameters of the existing resource types to support the expansion of DER participation.*

*Most critically, a part time behind-the-meter demand-response resource type is needed that supports the full range of A/S (including frequency regulation), is measured accurately, and is*

*third-party friendly. We believe this trends heavily towards resolving metering and telemetry cases in support of adding Frequency Regulation to the PDR resource type.*

Also, the ISO strongly encourages stakeholders to ***identify and describe use cases*** under each scenario (including diagrams of the configurations contemplated for these use cases), and specific issues not covered in these scenarios that should be addressed in this initiative.

1. Type 1: Resource provides services to the distribution system and participates in the ISO market. Question 1 – How do we manage conflicting real-time needs or dispatches by the distribution utility and the ISO? Question 2 – If distribution system and ISO needs are aligned, and the resource's actions meet the needs of both, is there a concern about the resource being paid twice for the same performance? Under what situations is double payment a concern? How should we address this concern? Question 3 – Should any restrictions be on a DER aggregation or the sub-resources of a DER aggregation providing distribution-level services? Would the distribution utility ever call upon a multi-pricing node DER aggregation to address a local distribution problem?

*Comments:*

*For question 1, In the case where a resource might be contracted for real-time services for both wholesale and distribution, there seems to be three options 1) don't allow a resource to serve both markets, 2) tightly orchestrated coordination between the ISO and distribution operator and 3) allow the "dual" participation and re-evaluate based on actual experience if there are significant conflicts that need to be addressed. Olivine leans towards the third option based on our understanding that a typical distribution dispatch is to reduce load on a transformer/feeder or address a catastrophic failure. If there is a dispatch on the distribution system, it is generally to provide very localized relief and typically wouldn't contravene a CAISO system need except perhaps in the case of overgeneration which comes with an extremely low likelihood of a simultaneous need for distribution system mitigation. Secondarily, in the case of an ISO dispatch, localized relief on the distribution system isn't likely to exacerbate any system condition.*

*With respect to question 2, there would only seem to be a perceived double payment if both the UDC and ISO provide payment for energy deliveries. If the ISO and distribution value the potential contribution of the DER with a capacity payment, there is no differentiation of the use of that capacity for a simultaneous need. If the ISO is suggesting that there might be concurrent compensation for the energy provided during a dispatch, we need to first understand if the distribution dispatch would pay for the energy. If there is no energy settlement for the distribution use of the resource, the ISO energy settlement of an ISO dispatch would recognize the value to the wholesale market of that energy and within its imbalance energy market settlement mechanisms, allocate the benefit and cost appropriately. Question 3 seems to be*

*out of the CAISO jurisdiction. If a DER wants to provide distribution services, they need to ensure the resource make-up complies with the requirements established by the UDC. While it is convenient when the ISO and distribution parameters are aligned and there should be no arbitrary reasons why they wouldn't, the parameters don't always need to be lock-step. If a resource only meets distribution requirements but not the CAISO requirements then is wouldn't be eligible for the ISO market.*

Type 2: Resource provides services to end-use customers and participates in the ISO market. The ISO has identified the following three sub-types (are there others?): (a) DER installed behind the customer meter, such that flow across the customer meter is always net load; (b) DER installed behind customer meter, such that flow across the customer meter can be net load or net injection at different time; and (c) DER installed on the utility side of the meter, may provide service to end-use customers and participate in wholesale market.

Comments:

*Regarding sub-types (a) and (b), the CAISO needs to develop a resource type that can be installed behind the customer meter and provide frequency regulation service. This could be the so-called PDR/NGR Hybrid and the resource type ought to be able to support wholesale market operations part time (e.g., to provide demand charge mitigation or distribution support during certain hours and wholesale energy and all ancillary services).*

*There are several requirements that should fit within the umbrella of resources providing both end-use customer and ISO services:*

- *In non-exporting situations, a resource must be able to participate as demand response – even when "negative" and therefore not require a WDAT agreement with the utility.*
- *In exporting situations, the CPUC and utilities should work out a scenario where a WDAT agreement and all the issues around that can be navigated in a straightforward manner.*
- *The resource type should be able to support wholesale market operations with part of the asset or allow for the assignment of part of the asset to the resource (e.g., allow excess capacity to be bid into the wholesale market).*
- *The metering requirement for this resource type likely requires a sub-meter. Utilities and the CPUC will need to weigh in on whether or not they have an interest in the requirements for that meter or, in fact, any responsibility for such metering at all.*