



COMMENTS OF ADVANCED MICROGRID SOLUTIONS

Response to 10/27/15 Energy Storage and Distributed Energy Resources Working Group Call Re: Alternative Proposals

Submitted by	Company	Date Submitted
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Advanced Microgrid Solutions (AMS) offers these comments on the California Independent System Operator's (CAISO) Energy Storage and Distributed Energy Resources (ESDER) Initiative's October 27th Working Group Call on Alternative Baselines. AMS greatly appreciates the CAISO's willingness to engage proactively on this issue. We strongly support a Meter Generator Output (MGO) proposal and find it consistent with the CAISO's proposed Alternative Baseline Guiding Principles of accuracy, auditability, ease of implementation, and compliance with NAESB. Specifically, use of a meter to measure Proxy Demand Resource (PDR) dispatch is indisputably accurate when compared to a traditional baseline, easy to implement as it requires no change in rules for traditional Demand Response (DR) providers, easy to audit since meter data is available, and is compliant with NAESB.

In response to the CAISO's request at the October 12, 2015 Energy Storage and Distributed Energy Resources Working Group, AMS, Solar City, CESA and Stem made recommended changes to the CAISO's proposed $G_{t_{adjusted}}$ calculation. AMS finds this joint proposal to be the most reasonable approach under today's constraints and time restrictions, however once there are more systems operating and the market has matured, we hope to develop a solution based on that experience.

Similar to the CAISO's $G_{t_{adjusted}}$ construct, we propose establishing a "typical-usage level" ($G_{Typical}$) based on electric output using (G) metered quantities during non-dispatch days. Typical usage is determined by conducting a look back of comparable, non-dispatch days and selecting 10 non-event days. Then a profile is created by averaging 5-minute data to the hour and then over the 10 days. Performance (P) during each interval (t) during the PDR call is therefore: $P = -(G - G_{Typical})$. If 10 non-event days cannot be found within a look-back window, then the resource is



deemed to be a full-time market participant and $G_{\text{Typical}} = 0$ and the resource receives credit for the full generation value during the event duration.

AMS strongly supports requiring a minimum of 10 days for determining G_{Typical} . Frequently dispatched resources are fundamentally 'market-first' resources. Designed for regular market dispatch, these resources do not warrant a capacity haircut or adjustment. In addition, an average based on less than 10 days is inherently less accurate. It is important to remember that G_{Typical} is not meant to perfectly mirror a traditional baseline. Energy storage and customer load cannot be treated exactly the same. Rather G_{Typical} represents what is typical for battery output. When a resource is dispatched often, the most reasonable estimate of G_{Typical} is zero. In contrast, zero is a completely unreasonable assumption for traditional baselines for customer load, which necessitates the selection of fewer days. Therein lies the difference between typical resource use (G_{Typical}) and customer load baselines, and the need for at least 10 non-event days.

For reference, the figures below illustrate a G_{Typical} adjustment when 10 non-dispatch days are available.

Figure 1 | MGO Hour-Specific Adjustment Method

Average of 10 non-event days over the past 45 days Sept 22, 2014; Dispatch, 10 Prior Workdays for Adjustment Calculation

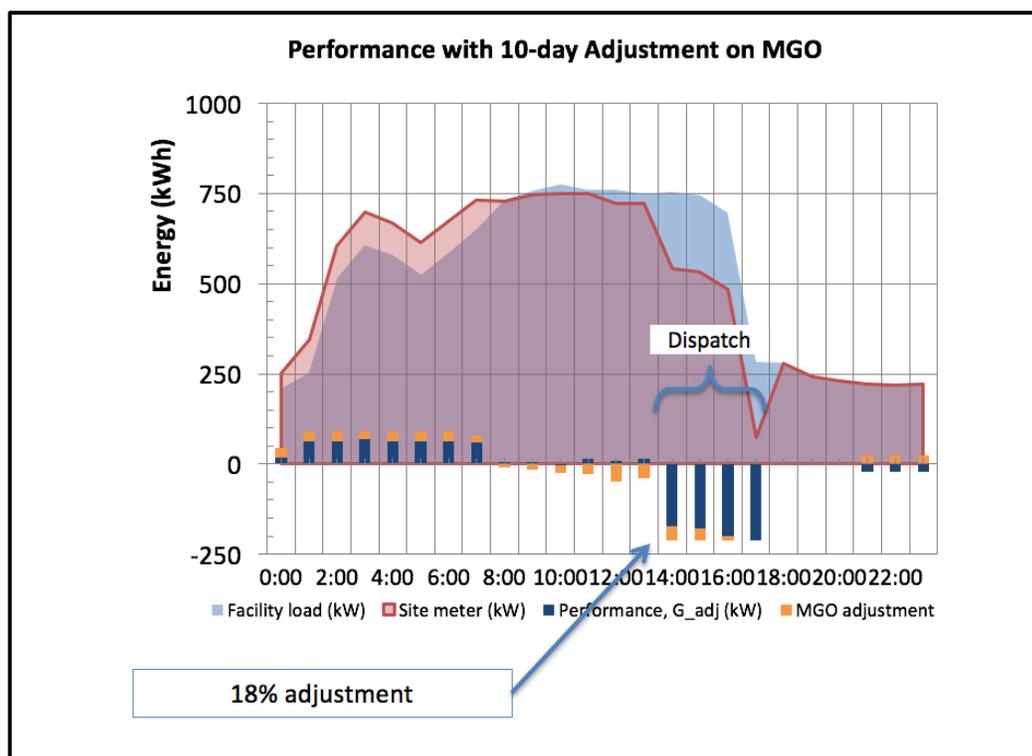
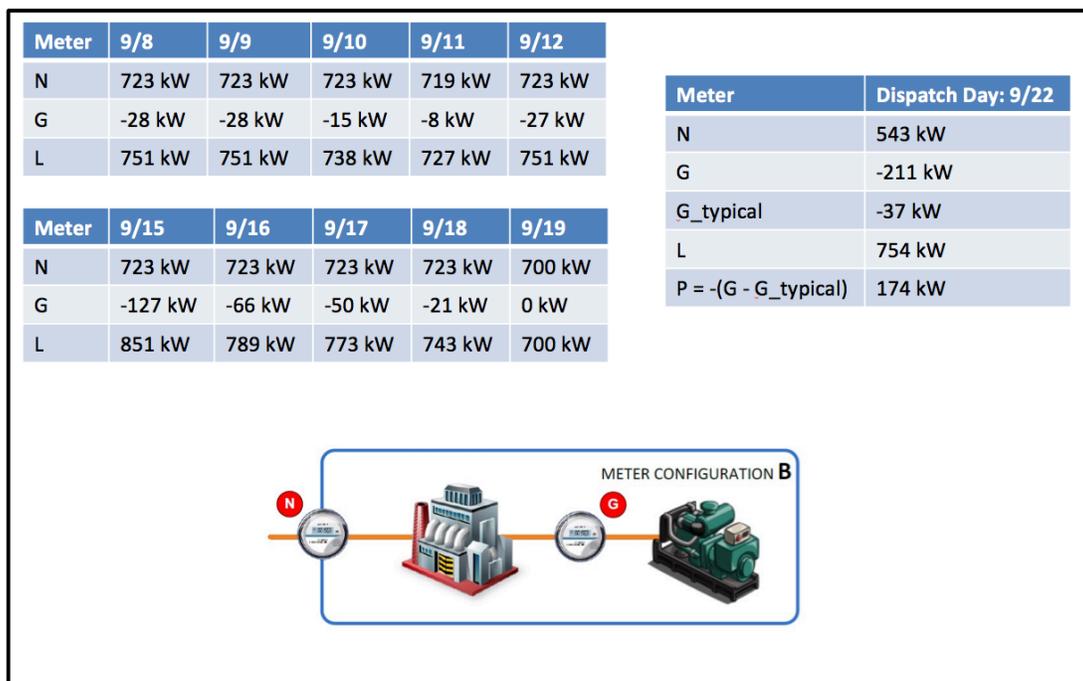




Figure 2 | Calculation of Standard G_{Typical}

Measurements at hour-ending 15:00 in kW



Given the novelty of these resources and the inherent complexity in determining an alternative baseline methodology, we request that the issue of overlap between retail and wholesale functions continue to be discussed as part of Phase II of CAISO's ESDER Stakeholder Initiative. This allows additional time for the Companies to engage with IOUs and also determine if there are additionally viable options that satisfy all parties, while continuing to move forward on this time sensitive matter.