



Solar-Battery Hybrid Proposal- Regulation Design Element



PJM Distributed Energy Resource and Inverter-Based Resources Subcommittee (DIRS) Meeting

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Solar-Battery Hybrid Resources : Regulation Proposal

Regulation is “the capability of a specific resource with appropriate telecommunications, control and response capability to increase or decrease its output in response to a regulating control signal to control for frequency deviations.”*

*Definition of regulation from PJM Glossary

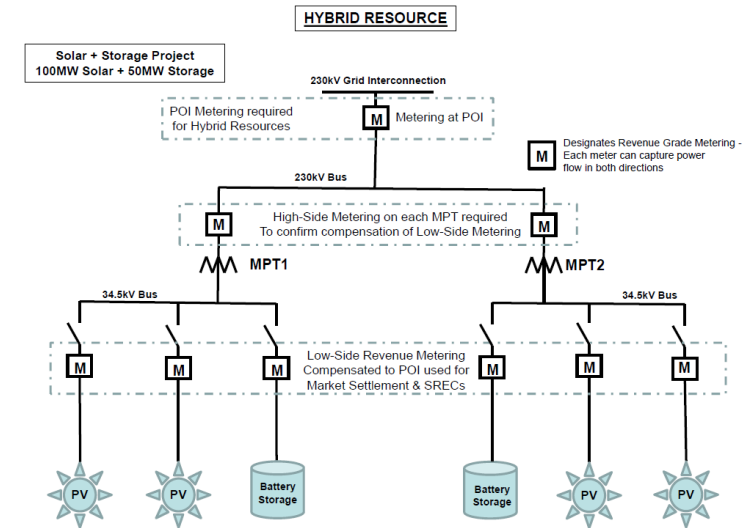
PJM’s hybrid proposal clarifies that :

“All resources can participate in Regulation if they meet performance requirements. For co-located resources, battery resource can participate in Regulation if submeter telemetry is provided.”^

^Design element description from PJM proposal

PJM’s proposal does not address the asymmetry that exists for the solar and battery units part of a hybrid resource .

For example, there may be an instance in which the solar resource over generates causing a deviation, whereas the battery resource is providing regulation to mitigate that frequency deviation caused by the solar resource.

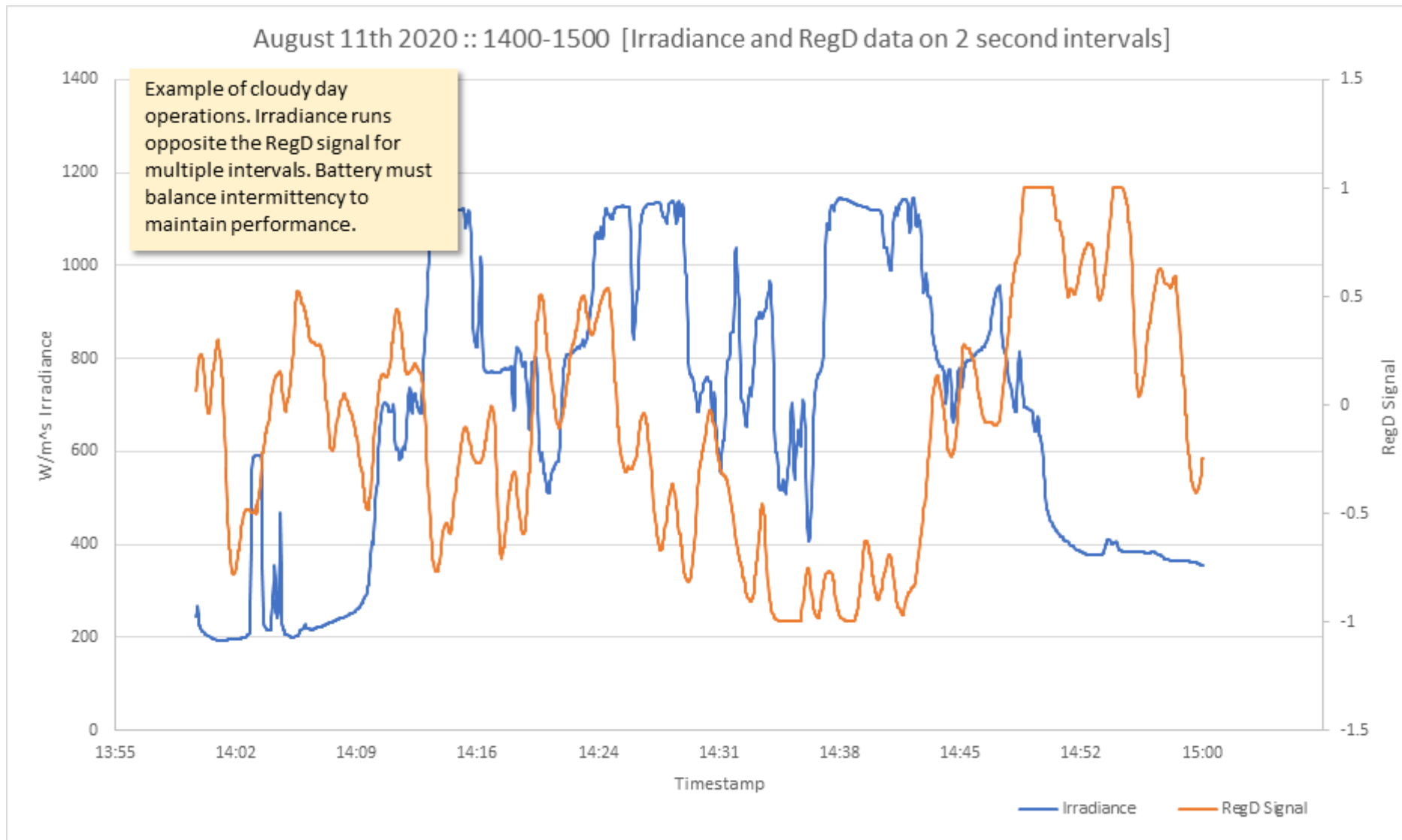


Dominion Energy proposes to add to the Regulation Design Element the following:

“For hybrid resources, two ways to provide regulation service are available:

- (1) Battery output is used to balance out intermittent renewable output, where resource response is measured at the point of interconnection meter.**
- (2) Battery output is not used to balance out intermittent renewable output, and resource response is instead measured independently for the battery component level using submeter output/telemetry.”**

Example of irradiance running counter to regulation signal



The chart demonstrates the asymmetry that would exist between solar and battery units part of a hybrid resource.

The plot trend highlights the need for clear rules to accommodate a battery that is part of a hybrid resource and meets the criteria to provide regulation.