Additional Comments on Battery Storage for the Oregon PUC Investigation into Capacity, Docket UM 2011.

Submitted by Obsidian Renewables, LLC, Renewable Energy Coalition, Community Renewable Energy Association (CREA), the Oregon Solar + Storage Industries Association, and Pacific Ocean Energy Trust (POET)

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A deep understand of energy storage technology and capability is very important, even necessary, to understand the capacity of an electric system to meet its load requirements reliably and with high confidence, particularly as the primary generating resources, to a growing extent, depend on changeable conditions such as wind speed and sunshine.

Oregon (and the Pacific Northwest) has only one larger scale battery system in operation today. It is a 30 MW charge/discharge lithium-ion battery with four hours (120 MW hours) of storage located at PGE's newly commissioned solar facility named Wheatridge, south of Hermiston, Oregon (hereafter "Wheatridge Storage"). Understanding how Wheatridge Storage is operated and perhaps how it could be operated differently would be very useful to understanding how other battery storage facilities located in our region could be used and to what extent they could be depended on for reliable electric service.

Not a great deal of information is yet available about Wheatridge Storage. Some bit of information became available from testimony filed in UE 391, a PGE tariff update docket.

ue391htb153020.pdf (state.or.us)

For convenient reference, the cover page and pages 8-13 of the testimony was clipped and is attached.

We found the testimony surprising. The batteries are only charged from the solar field (likely to comply with requirements to maximize the federal investment tax credit for the batteries). That means that the value of overnight charging from the nearby wind farm or from the grid is not currently available. The testimony explains that the battery contract requires a four hour settling down period after charge and before discharge, so charging from the solar field stops in the early afternoon in order for discharge to occur with the evening ramp. Under the contract, the testimony explains, the batteries are not allowed to hold a full charge for more than a day. Since it takes somewhat more than four hours to charge a four-hour battery, it looks like the system is hard wired into a morning/early afternoon charge, followed by an early evening discharge, every day with little flexibility.

Taken together, these operating protocols take away most of the flexibility value of batteries. While information is limited, we have been informed from battery experts that these protocols imposed on PGE are unusual and go beyond the protocols necessary for the safe and long operation of a lithium ion battery system.

We request that staff take up investigation of battery operating protocols as part of this investigation to help inform the capacity and reliability batteries offer to our electric system. We have concern that the experience with Wheatridge Storage may discourage rather than present a well-considered case for additional storage development.

Thank you for your consideration.

David W. Brown

On behalf of Obsidian Renewables, LLC, the Renewable Energy Coalition, the Community Renewable Energy Association, the Oregon Solar + Storage Industries Association, and the Pacific Ocean Energy Trust