REsurety

REsurety Enables Broad Reach Power's Grid Decarbonization

BROAD REACH POWER

Location: Houston, TX

Industry: Energy Storage

Solution Used: Locational Marginal Emissions

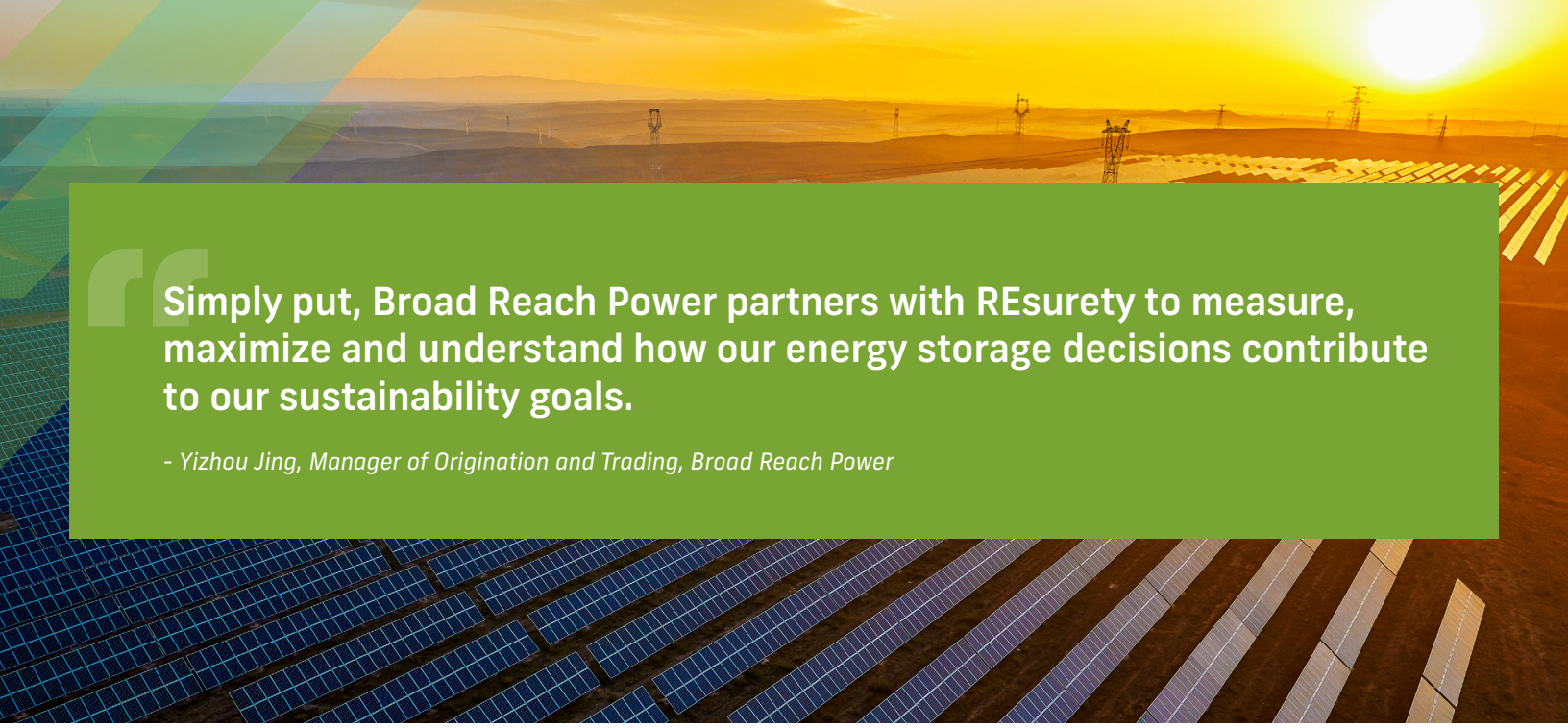
With a storage pipeline exceeding 20GW, granular carbon emissions data is mission critical in assisting Broad Reach Power more efficiently reduce carbon emissions while increasing grid reliability; REsurety provides that data.

- Paul Choi, EVP of Origination, Broad Reach Power

Broad Reach Power is a leading U.S. utility-scale independent power producer (IPP) that understands the long-term value and rapid growth of energy storage as an infrastructure asset, particularly in those markets transitioning from traditional to renewable generation. BRP's facilities provide flexibility, reliability, and environmental benefits while generating revenues from both risk-management contracts and spot-market opportunities. BRP is a leader in the rapidly evolving energy storage space, with a pipeline of 20GW across a variety of power markets including Montana, Wyoming, California, Utah and Texas.

The energy storage experts at Broad Reach Power anticipated that storage was key to enabling and accelerating grid decarbonization. However, one of the challenges was measuring its impact. The standard tools relied upon by the clean energy industry to measure carbon emissions impact don't work for energy storage. Renewable Energy Certificates (RECs), for example, can only be created by generators - leaving batteries with no environmental credit. Even worse, because batteries are a net consumer of energy (they have slightly less than 100% round trip efficiency), carbon emissions data that averages over space or time almost always results in batteries appearing to be net emitters of carbon. In reality, energy storage can cause significant reduction in carbon emissions, by enabling increased renewable generation during hours and at locations of high renewable penetration, saving those clean electrons to compete with high carbon-emitting thermal plants after the sun goes down or wind speeds reduce.

Broad Reach Power's clients care deeply about the carbon impact of their storage projects. In fact, that is what drove many to invest or contract with storage to begin with - because they knew that it was a key technology for decarbonization of the power grid. In the absence of a good measurement tool, however, fuzzy math and approximations were being used instead of concrete numbers. As a data-driven organization, Broad Reach Power knew that they could do better.



> **Simply put, Broad Reach Power partners with REsurety to measure, maximize and understand how our energy storage decisions contribute to our sustainability goals.**
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> *- Yizhou Jing, Manager of Origination and Trading, Broad Reach Power*

This problem was solved when Broad Reach Power started using REsurety's Locational Marginal Emissions (LME) data. This data set is a measure of the marginal CO_2 emissions at each location on the grid, in each hour. The measurement accounts for actual grid congestion, topology, generation, and load, and results in marginal carbon emissions rates at thousands of unique locations in each grid in each hour, including at Broad Reach Power's project locations. Broad Reach Power saw three clear opportunities for using this dataset.

First, Broad Reach Power was able to measure, for the first time, the impact that each particular project was having on the grid in each hour, during both charging and discharging periods. Rather than trying to trace RECs through the system and using MWh-based accounting, Broad Reach Power was able to focus on the metric that mattered - carbon emissions - and show the impact that its projects had on the grid.

Second, the LME data would allow Broad Reach Power to offer their clients new, innovative offtake solutions. Using LME data, Broad Reach Power can now optimize the battery's dispatch to maximize its carbon impact as well as its financial returns, helping their clients achieve carbon goals faster and maximize their impact on the grid.

Lastly, Broad Reach Power is now able to identify the project locations where the carbon emissions impact of storage is highest and optimize their technology and dispatch strategies for that location - all before the project is built. This allows the Broad Reach Power team to focus on the highest value opportunities and contracts.

To learn more about REsurety and its Locational Marginal Emissions dataset, email:
carbon@resurety.com