



ENERGY EDGE
strategic energy solutions

COMPANY NAME

Baker Hughes

WEBSITE

www.bakerhughes.com

LOCATION

Houston, TX

INDUSTRY

Energy Technology

Baker Hughes Eliminated 12 Percent of Company's Global Carbon Footprint



OVERVIEW

Baker Hughes, based in Houston, Texas, is one of the leading energy technology companies in the world. With operations in more than 120 countries, Baker Hughes develops innovative technologies and services that make energy production and consumption safer, cleaner and more efficient.

In addition to providing customer solutions that are environmentally focused, Baker Hughes has its own commitments regarding its carbon footprint. In January 2019, Baker Hughes committed to reduce its CO₂ eq. emissions 50 percent by 2030 and to achieve net-zero CO₂ eq. emissions by 2050. By the end of 2018, Baker Hughes had already reduced its CO₂ eq. emissions 34 percent since 2012 and was looking for further carbon reduction opportunities.

ENERGY EDGE was hired by Baker Hughes in 2012 to provide energy procurement services globally. Since then, ENERGY EDGE has been supporting Baker Hughes in the United States, Canada, United Kingdom and Germany. With the commitment in early 2019 to reduce its carbon footprint, ENERGY EDGE began working to identify opportunities in the United States that could further Baker Hughes' sustainability goal.

The Client's Need

Structure a renewable purchase that accomplishes the above criteria while being cost competitive to purchasing traditional grid energy

ENERGY EDGE's Solutions

Identify a retail electricity provider who could:

- Identify potential renewable projects*
- Be the counterparty to the renewable PPA*
- Provide competitive retail services*

Baker Hughes is a large consumer of electricity in Texas, and ENERGY EDGE understood that moving away from buying traditional grid power and, instead, sourcing its electricity from renewable sources would result in a meaningful CO₂ eq. reduction. Accordingly, ENERGY EDGE began working with the energy stakeholders within Baker Hughes to identify the attributes of a renewable energy purchase that were "must-haves." This resulted in a set of criteria that needed to be met if Baker Hughes was to pursue a renewable purchase.

These included:

- Matching as closely as possible the hourly production of renewable energy with Baker Hughes' hourly consumption of electricity. Baker Hughes did not want to purchase 100% of their annual electricity needs from just a solar project. This would result in more solar energy being generated than Baker Hughes could consume in many hours of the year. They did not want to be exposed to the financial risk associated with this.*



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- *Financially integrating the renewable purchase with a retail power contract.* Baker Hughes wanted the renewable purchase to serve as a physical hedge against its future load requirements.
- *Avoid mark-to-market accounting treatment.* Baker Hughes did not want the administrative or financial burdens associated with hedge accounting.
- *Achieve additionality with the purchase.* Baker Hughes wanted to have a direct impact on reducing the carbon footprint within the electricity grid where they are headquartered.



APPROACH

ENERGY EDGE solicited proposals from various retail electricity suppliers while specifying the commercial elements most important to Baker Hughes. ENERGY EDGE stipulated that:

1. All offers must combine solar and wind energy in order to accommodate Baker Hughes' requirement of closely matching hourly energy production with their hourly consumption of electricity. ENERGY EDGE understood that in Texas solar and wind have complementary production profiles, and a combination of the two would be best suited to achieving this requirement.
2. The supplier should identify greenfield projects under development in the ERCOT market and be willing to sign a PPA directly with the developer(s) on behalf of Baker Hughes. This would satisfy Baker Hughes' other two requirements of avoiding mark-to-market accounting and supporting additionality in Texas.

Once these offers were received, ENERGY EDGE began comparing the production profiles of the proposed projects and the economics of the renewable offers. While Baker Hughes wanted to minimize the financial risk associated with buying more generation than they could consume in any given hour, they understood that this could not be completely avoided and still achieve the goal of being 100% renewable. Understanding which offer minimized this risk was a key evaluative criterion.

In addition to evaluating the economics of each offer, ENERGY EDGE also provided Baker Hughes' legal counsel with an assessment of each supplier's contractual terms. Key considerations in this review were:

1. the rights and remedies associated with the renewable projects either being delayed or failing to achieve commercial operation
2. the guaranteed energy production provisions associated with the renewable projects
3. credit provisions between the project developer(s) and the supplier as well as numerous other commercial items



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Energy Edge worked with Baker Hughes' outside legal counsel and facilitated the contract negotiations.

A 10-year PPA for 25 MWs of wind and 30 MWs of solar energy

Eliminated 12 percent of the Baker Hughes' global carbon equivalent emissions



OUTCOME

Baker Hughes entered into a long-term power purchase agreement with EDF Energy Services that resulted in a reduction of 1.2 million metric tons of CO₂ eq. emissions over the term of the agreement. This is the equivalent of removing more than 27,000 cars from the road.

The power purchase agreement combines renewable energy from the Texas-based White Mesa Wind project and the Elara solar project. Combined, these projects created an energy production profile that aligns with Baker Hughes' electricity use patterns around the clock and serves as a model for how other large energy consumers can better match their renewable energy purchases with how they consume electricity.