

ENERGY TRANSITION

PESA Member Contributions

Baker Hughes

As of January 2020, **Baker Hughes** receives 100% of its Texas electricity from renewable sources eliminating 12% of the company's global carbon equivalent emissions and reducing 1.2 million metric tons of CO₂ eq. emissions over the 10-year term of the agreement.

In the United Kingdom, 24 Baker Hughes facilities have used 100% wind power since 2014. Renewable hydroelectric energy is now used at Baker Hughes' campus in Celle, Germany, and on-site solar power is utilized at its sites in Billerica, MA and Vibo, Italy, among others.

Halliburton is delivering technologies that help customers reduce their carbon footprint. The iCruise(TM) intelligent rotary steerable system reduced carbon dioxide equivalent emissions by 74 metric tons per well compared to traditional drilling methods.

HALLIBURTON

Q10™ pump is a non-conventional, high-power, natural-gas-turbine-driven mobile power plant that can be run using abundant natural gas or flare gas harvested by third parties.

Halliburton, Microsoft and Accenture announced a five-year strategic agreement to advance Halliburton's digital capabilities in Microsoft Azure. Under the agreement, Halliburton will complete its move to cloud-based digital platforms and strengthen its customer offerings by:

- Enhancing real-time platforms for expanded remote operations,
 - Improving analytics capability with the Halliburton Data Lake utilizing machine learning and artificial intelligence, and
 - Accelerating deployment of new technology and applications, including SOC2 compliance, for Halliburton's overall system reliability and security
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National Oilwell Varco (NOV) has been awarded equipment package and design orders for one of the world's largest offshore wind turbine installation vessels by Japanese-based Shimizu Corporation.

Oceaneering, a leader in ROV technology monitoring offshore oil and gas facilities around the world, now uses this technology to monitor offshore wind facilities. Additionally, a recently purchased a renewable company does lane clearance ensuring offshore wind turbine arrays are compatible with other ocean industries.



Oceaneering has also been awarded a contract from Moray Offshore Windfarm to complete seabed route and debris clearance for the Moray East Wind Farm project in the Moray Firth, Scotland. They will provide a full suite of services for the project, including vessel, route preparation tools, remotely operated vehicles (ROV), survey, and personnel to enable completion of the wind farm's export cable routes.



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Schlumberger

Schlumberger is on track to fulfill its commitment to set a science-based target by 2021. Projects are expected to be completed within a 5-to-15-year period. Targets will cover the company's direct emissions, as well as those of key suppliers, including end products and services. Results will be validated externally by the Science-Based Target Initiative.

To help customers achieve sustainability goals, Schlumberger currently has more than 100 technologies or solutions that reduce emissions or mitigate negative impacts on local biodiversity.

Schlumberger New Energy, a division launched early this year, explores new business opportunities in low carbon or carbon-neutral energy technologies.

In clean hydrogen, Schlumberger New Energy is launching Genvia™, a hydrogen-production technology partnership with the French Alternative Energies and Atomic Energy Commission (CEA), and with Vinci Construction. This new venture will accelerate the development and first industrial deployment of the CEA high-temperature reversible solid oxide electrolyzer (SOE) technology, which would produce pure hydrogen — a clean fuel that can be easily stored.

The Celsius Energy project aspires to plug buildings into the earth's continuous and resilient energy resources to meet heating and cooling needs, reducing the associated CO2 emissions by as much as 90%. This solution integrates a subsurface multi-well heat exchange system with surface heat pump exchange technology, operated by an automated digital platform.

TechnipFMC

A **TechnipFMC** plan to convert power from offshore wind to hydrogen and store it on the seabed is underway by a multi-company project team that hopes to have a full-scale pilot running off Norway by 2025. The project – called 'Deep Purple' – aims to see turbine-level electrolysis feeding seabed hydrogen tanks where output from offshore wind farms can be stored.

Fuel cells would then re-electrify the hydrogen to provide a clean source of power for offshore oil and gas platforms, with shipping and seafood among other potential target markets for green electricity produced.

WEIR

Weir has set a scope one and two emissions reduction target of 50% by 2030 and net zero by 2050. To meet these targets, Weir is deploying projects which will improve efficiency of our current operations and are ensuring any new operations are optimised. Weir will also develop a renewable purchasing strategy in 2020 to support achieving this goal.

Weir's Terraflowing™ solution, supports customers by taking water out of tailings and allows it to be recycled back into the process plant, creating more stable tailings which can be repurposed into a usable product. Weir's stated ambition in the next generation slurry pumps will be a product that again extends wear life and halves maintenance time all while using less water to function.