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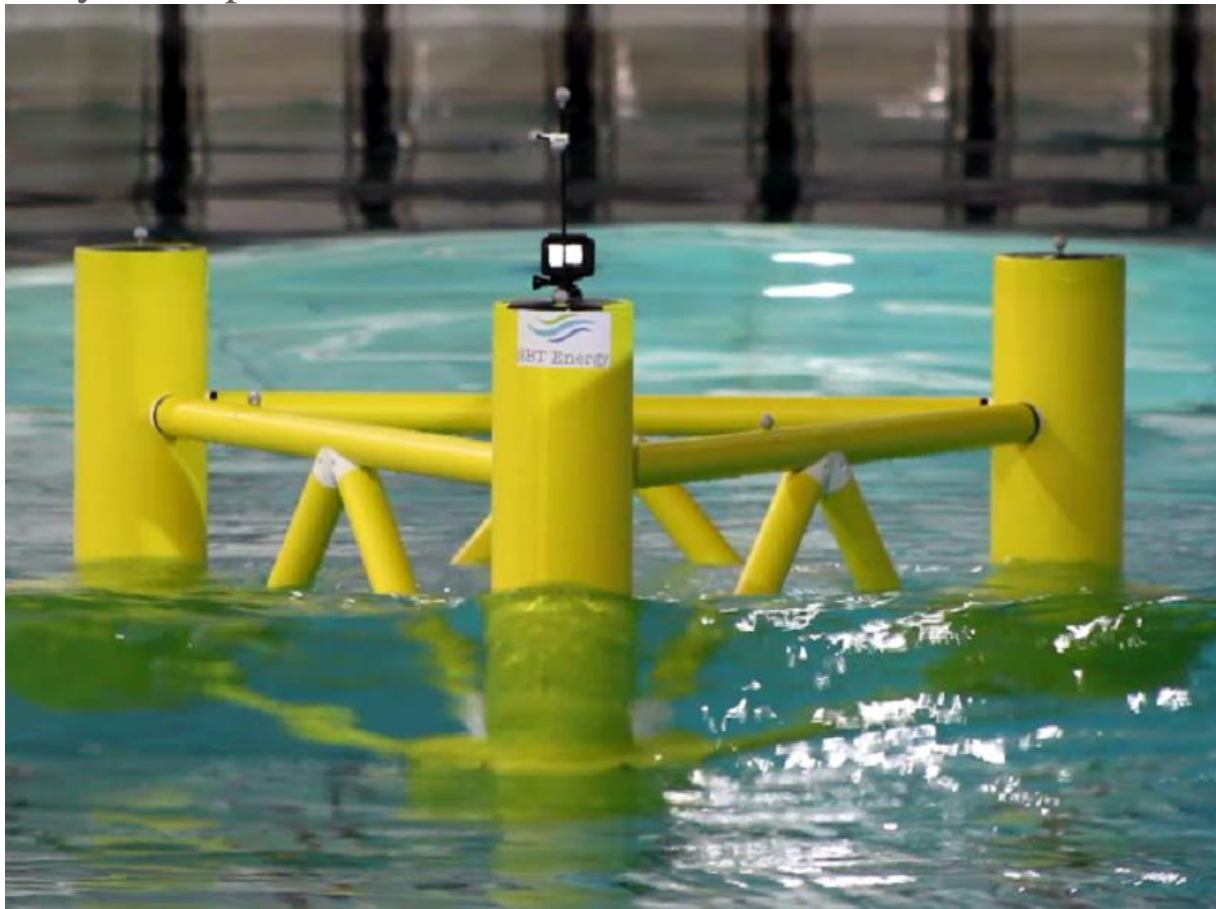
ANALYSIS

How SBT Energy's “disruptive buoy” could help offshore oil and gas thrive

By Umar Ali

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SBT Energy has announced the successful completion of a wave-tank test programme and preliminary field trials for its buoy concepts.



Aberdeen-based technology design and concept company SBT Energy has announced the successful completion of a wave-tank test programme and preliminary field trials for its buoy concepts.

The buoys are part of a “disruptive buoy and tank technology” designed for a number of offshore industries, including oil and gas as well as renewables, and comprises eight unmanned offshore storage tank and buoy concepts.

The buoys can be used independently or integrated into wider field developments, including facilitating tie-backs for oil and gas platforms. They are also reusable assets, and can be moved to different oil fields with minimal decommissioning costs or environmental damage.

The technology has been tested with the support of the University of Edinburgh and the UK Oil and Gas Innovation Centre (OGIC) through the provision of a wave-tank facility and a financial grant respectively.

The tests and trials confirmed the “extremely stable response” of the designs, with the buoys demonstrating low motions not previously achievable by offshore buoys.

SBT Energy director Ewan Neilson told Offshore Technology that the core objective for these buoys was to create “an unmanned facility with the stability to survive rough seas and strong winds,” with the intention that offshore oil and gas companies use the buoys to hold equipment and deploy them from oil and gas platforms as smaller exploration and production structures.

He added that the buoys would enable extraction of oil and gas from wells further away from existing rigs without the need for expensive pipelines, expanding the utility of these larger platforms.

Keeping production afloat

According to SBT Energy, the production buoy concepts could reduce total oil and gas production costs by at least two thirds compared to conventional installations, reducing operating costs per barrel by 70% to \$5, from \$16 per barrel in 2019.

These reduced operating costs would allow offshore oil and gas to compete with shale oil on flexibility and cost, ensuring production and job creation in the UK North Sea and Atlantic Margins over the next 50 years.

Neilson said: “Our concepts offer low Capex [capital expenditure] and Opex [operating expenditure] energy solutions for the renewable, oil and gas and other offshore industries. They make production of oil and gas from some uneconomic and borderline commercial fields, viable again.

“In turn, this will support much needed energy security in many regions of the world, as well as in the UK, and allow for additional investment and job creation.”

According to the company, the cost efficiencies afforded by buoys could make up to 25% of global oil and gas reserves commercially viable, extending decommissioning and supporting energy security.

Neilson also told Offshore Technology that the buoys could facilitate renewable energy production through the addition of simple solar, wind or tidal generators to the buoys, with the potential for hydrogen storage through these operations.

According to SBT, this could support the UK's transition to net-zero carbon field emissions and make the UK a "world leader" in new offshore installations, securing corporate tax receipts and creating jobs over the next 30 years.

In a statement, Neilson said: "The buoy and tank concepts support net zero carbon emissions, can be used for carbon sequestration and are perfectly aligned with the process of Energy Transition.

"Investors and the energy industry are looking at lower Capex and Opex solutions with potentially net zero carbon emissions in short life cycles with quick capital payback; SBT Energy's stable and flexible offshore acreage concepts meets that sweet spot as the facility of the future."