

CASE STUDY

CUSTOM ENGINEERED SOLAR FRAMES DELIVER SUSTAINABLE POWER

BACKGROUND

James Aiken Engineering Solutions was commissioned by JCE Energy, a world leader in custom solar/wind hybrid power solutions for the offshore and marine industries, to design and construct robust solar panel frames that could generate power for an offshore oil and gas platform. The firm constructed eight frames (five solar panels per frame), using high-strength Grade 355 steel, ensuring durability and resistance to the harsh North Sea environment.

THE CHALLENGE

The primary challenge was to develop a practical solution that allowed the solar panels, mounted on 2m x 1m frames, to be oriented towards the sun throughout the day to maximise energy capture. The solution needed to be space-efficient, not encroach on the platform's limited area, and avoid interference with the daily operations of offshore workers.



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SOLUTION

To address the challenge of orienting the panels towards the sun, the fabrication and engineering teams innovated by adopting a mechanism inspired by gas struts, similar to the process used in car boots, to take the weight and pressure of the panels. This approach facilitated the smooth opening and closing of the solar panels on their frames. The construction included detailed angling, and assembling of the frames, securely fixing the solar panels, and conducting comprehensive load testing and inspection to ensure safety and functionality.

RESULTS

The installation of the solar panel frames was a success, providing a reliable and efficient power source that seamlessly integrated into the platform's operations without occupying valuable space. The innovative use of gas strut technology allowed for optimal positioning of the panels, significantly enhancing energy efficiency. The project not only met but exceeded client expectations, showcasing James Aiken's capability to deliver tailored solutions in challenging environments. This endeavour helped to further solidify JCE Energy's reputation in the offshore and marine industries.

JAMES AIKEN ENGINEERING SOLUTIONS IS A LEADING SUB-CONTRACTOR OF FABRICATED METAL AND PRECISION MACHINED COMPONENTS WITH EXTENSIVE FABRICATION AND MACHINE SHOP FACILITIES UNDER ONE ROOF.