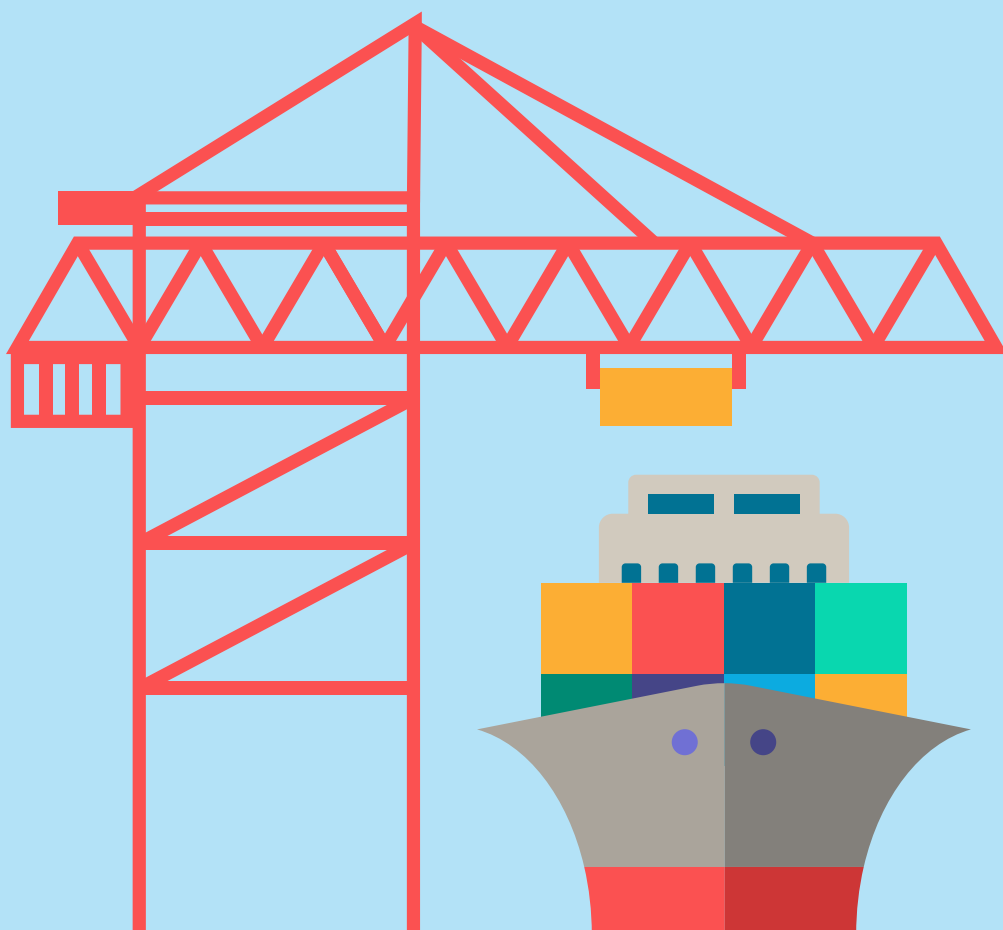


Case Study

Port of Hull



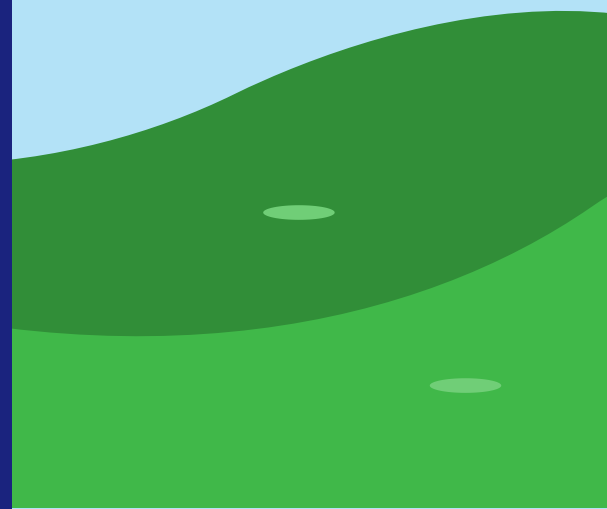
Summary

- **Location:** Immingham, Lincolnshire
- **Capacity:** 6.5MW
- **Type:** Utility-scale rooftop
- **Developer:** Custom Solar
- **Owner:** Associated British Ports
- **Panel type:** Polycrystalline
- **Completion date:** October 2020



Custom Solar has been a pioneer in the UK solar sector for more than a decade.

Custom Solar designs, installs and maintains world-class solar systems for corporations and public sector institutions. Their track record of tailoring projects for large-scale commercial clients relies on our creativity, their expertise in engineering and an industry leading attitude to health & safety.



Overview

Associated British Ports (ABP) invested £6.8m into creating the UK's largest rooftop solar development, installed by Custom Solar while complying with social distancing requirements, as Covid-19 was raging at the time. It was installed at the UK's busiest port, Immingham.

It generates around 5.5GWh per year, enough to power the equivalent of 1570 homes, while saving almost 3,000 tonnes of CO₂.



Project Summary

Carbon reduction, financial savings and corporate social responsibility were all factors. ABP has a company-wide policy to deliver renewable technology across all operational ports to reduce CO₂ emissions and energy consumption. This record-breaking project saw the installation of a 6.5MWp solar system, utilising 21,000 solar panels across the rooftops of major terminal buildings at the Port of Hull including the Il-weather terminal. The system will generate enough electricity during peak generation periods to run the Port of Hull solely from clean energy. Of ABP's 21 ports, 17 now have renewable energy projects attached. The Hull scheme means that Immingham can meet 29% of its energy demand.

Throughout this project, Custom Solar had to follow the COVID-19 guidelines put in place by the government.

Due to Shed 16 being 350 meters long, DC cables had to be placed in specified separation bundles to prevent overheating. Cable voltage drops, inverter utilisation factor and economic balance of cable size to cable losses all had to be considered. A permanent roof pathway was installed to prevent surface damage from the repeated path walks required to install over 10,000 panels.



Connecting a system of this size to the grid required a long process of communication and information sharing with Northern Powergrid. Custom Solar conducted simulation studies to demonstrate compliance with energy flow and harmonics requirements, including the design of a failsafe export-limiting solution to ensure no power flowed back to the grid. Due to this zero export to the grid requirement, over 4km of fibre optic cables were run across the site to allow communication between inverters and the meter at the connection point.

High voltage network upgrades were planned and installed in collaboration with the client. Furthermore, a DC grid injection was identified on existing crane equipment, so safety precautions were put in place.

Outcomes/Solution

After months in planning Custom Solar was appointed the project in September 2019, with Associated British Ports investing 6.8 million pounds into the UK's largest rooftop solar installation!

Simon Bird, Director at ABP Humber, said: "This has been a huge project for ABP and our contractor Custom Solar to undertake. I'm delighted that the Port of Hull now holds the accolade of the UK's largest, commercial rooftop array. Our ambition is to keep reducing the emissions that port operations generate, by implementing a mix of clean energy production and investing further in hybridized port equipment. Every bit of effort and investment to lower our carbon footprint contributes to the region's environmental targets. This scheme and others like it, also help to secure ABP's energy supply, making great commercial and environmental sense."

Custom Solar operates and maintains all of the systems across the port providing live monitoring via our bespoke monitoring solution, full reactive maintenance, and annual scheduled service visits.



[Learn more about what's happening at Custom Solar at www.customsolar.co.uk](http://www.customsolar.co.uk)



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