



CLIENT

Seagreen Wind Energy (SWEL)



seaway⁷

OUR VALUES



Safety



Integrity



Sustainability



Performance



Collaboration



Innovation

Seagreen Offshore Wind Farm

Project at a glance

Full project information overleaf

In 2020, Seaway7 was awarded the contract by SSE Renewables for the Engineering, Procurement, Construction and Installation (EPCI) of the 114 suction bucket foundations and inner-array cables for Seagreen Offshore Wind Farm, Scotland's largest and world's deepest offshore wind farm.

In August 2021, the first jacket foundations arrived on site at the Port of Nigg, shortly followed by the first foundation installation and commencement of the cable lay. In April 2023 the final foundations were installed, including a record-breaking foundation installed at over 58m depth. The final cable was laid on the project the following month and Seaway7 completed the full project scope in July 2023.

Client

Seagreen Wind Energy (SWEL) is a joint venture between TotalEnergies (51%) and SSE Renewables (49%).

Windfarm Information

Seagreen Offshore Wind Farm, is under construction around 27km from the coast of Angus in the North Sea. The 1,075MW wind farm will feature 114 Vestas turbines and an offshore substation. First power was achieved in August 2022, with electricity transmitted via subsea cables to a point near Carnoustie and then to the Tealing substation via underground cables.

The wind farm will provide enough green energy to power more than 1.6 million homes, equivalent to two-thirds of all Scottish homes and will displace over 2 million tonnes of carbon dioxide from electricity generated by fossil fuels every year.

Source: www.seagreenwindenergy.com



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www.seaway7.com



Seagreen Offshore Wind Farm

Project

Seagreen Offshore Wind Farm

Location

Over 27km from Angus coast in the North sea

Water depth

Between 42m-58m below lowest astronomical tide

Project Type

EPIC

Date Awarded

June 2020

Completion date

July 2023

Vessels

Seaway Aimery
Seaway Phoenix
and various other
3rd party vessels
and barges

Scope of Work

Project Management

EPCI WTG Foundations Scope:

- Design, Procurement and Fabrication of 114 WTG Jackets (weight 2,000 - 2,250t, height 77.5 - 93m, suction caisson diameter 10.5 - 11.5m)
- Foundation fabrication executed across multiple sites
- Transportation and Installation of 114 jacket foundations including scour protection and grouting services.

EPIC Inner-Array Cables Scope:

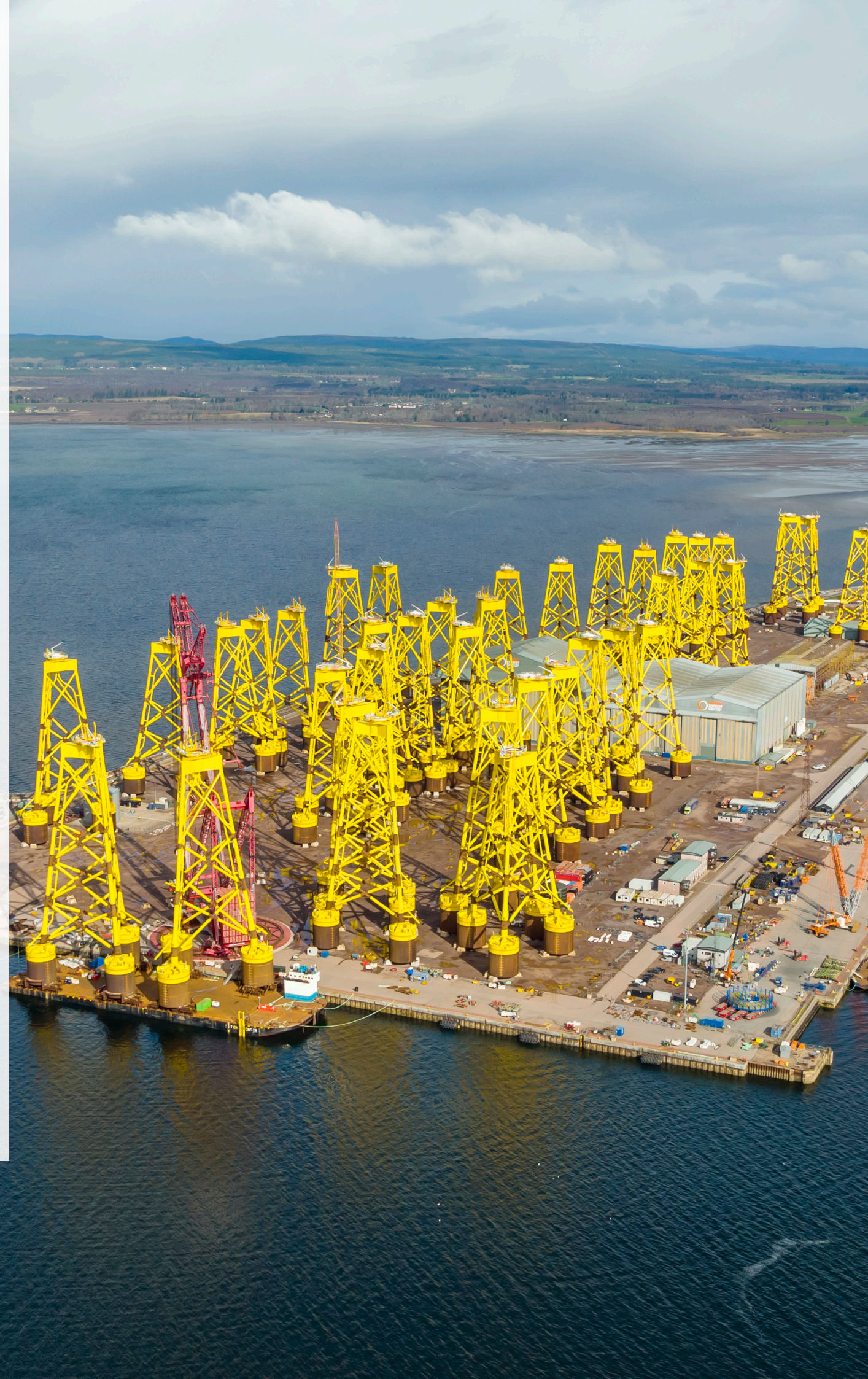
- Engineering, procurement, installation and commissioning of 312km 66kV submarine composite cables, cable accessories and cable protection systems
- Transportation, installation and burial of submarine cables system and associated termination, testing and pre-commissioning.

Project Milestones

- First of 114 jacket foundations delivered just one year on from contract signature.
- First jacket superstructures arrived at the Port of Nigg - August 2021
- First foundation installed - October 2021
- World's deepest offshore wind foundation installed at a depth of over 58m
- Final jacket installed April 2023
- Final cable laid in May 2023
- Offshore scope completed July 2023

Technology and Innovation

- Seaway7 implemented suction bucket foundation technology on jackets for this specific site to overcome the difficult and variable soil conditions, whilst gaining faster installation speed and avoidance of pile driving noise. This technology was the key contributor to the cost reduction on Seagreen.
- The deepest locations across the Seagreen site feature some of the world's tallest fixed-jacket foundations in offshore wind representing sizable challenges in fabrication, transportation and installation and requiring rigorous engineering and project management.



Worksites and Assets

The fabrication work scope for foundations was executed across multiple sites: Lamprell in the UAE, and both Jutal Offshore Oil Services and COOEC Fluor Heavy Industries Co. in China. Inner-array cables were manufactured at Hellenic Cables site in Corinth Greece.

The installation base for Seagreen foundations was at the Port of Nigg - utilised for marshalling, storage and logistics. The cable installation base was at the Port of Blyth in Northumberland, UK - utilised for cable storage and logistics.

The offshore installation activity utilised a wide range of vessels from Seaway7 fleet and 3rd party chartered vessels. The marine spread comprised heavy transport vessels, scour protection vessels, a crane vessel for foundation installation, cable-lay vessels including Seaway Aimery and Seaway Phoenix; and installation support vessels.

