Beatrice, once fully operational, will be Scotland’s largest offshore wind farm. Located approximately 13km from the Caithness coast, Beatrice will create around 90 full time roles for the duration of its 25 year lifespan. Onshore construction began in Moray in May 2016 and offshore construction began in April 2017. The first wind turbine was installed and first power exported in July 2018. Beatrice will be fully operational in 2019.

Beatrice is a Joint Venture between SSE (40%), Copenhagen Infrastructure Partners (35%) and Red Rock Power Limited (25%).

Source: beatricewind.com
BOWL EPCI Foundations and Inter-Array Cable

Scope of Work
The scope of work comprises of the following elements:
• Design WTG foundations
• Fabrication of steel jackets & piles (84x WTG foundation)
• Transport and installation of jackets and piles
• Transport and installation of substation OTM
• Design and procurement of IAC
• Installation and trenching of IAC (91x sections)
• Marine construction support.

Project Milestones
Key milestones for the project included tight deadlines for the design, fabrication and installation works.

Technology and Innovation
Standardised transition piece top sections allowed greater transferability of these sections between the yards. The pile mitigation protocol which was designed for Beatrice was implemented for the first time as part of a UK offshore wind farm and was found to be successful.

The Pile Installation Frame was the first of its kind and all its smart components allowed very accurate pile installation which were installed well within tolerance.

A hydraulic sea fastening system was designed for the S-2500 impact hammer which resulted in shorter cycle times for the operations.

A riggerless jacket installation system was also designed in-house. Traditionally riggers are required to hook the slings onto the crane hook, however by using a combination of the so-called lifting bucket and an internal lifting tool with steering yoke and proximity sensors, all installation was conducted remotely without rigger intervention on top of the 80m high structures.

Collaboration
Throughout the project there was close collaboration between Subsea 7, Seaway Heavy Lifting and Seaway Offshore Contractors (SOC). During this project Subsea 7 fully acquired both SHL and SOC.

Assets and Worksites
The fabrication workscope was divided between various worksites in the UK, The Netherlands, Belgium, Germany and Denmark. This ensured timely delivery of all structures.

Offshore installation activities were executed between April 2017 and August 2018 using the Seaway Heavy Lifting vessels, Seaway Yudin and Oleg Strashnov and the Seaway Offshore Cable vessel, Seaway Aimery.