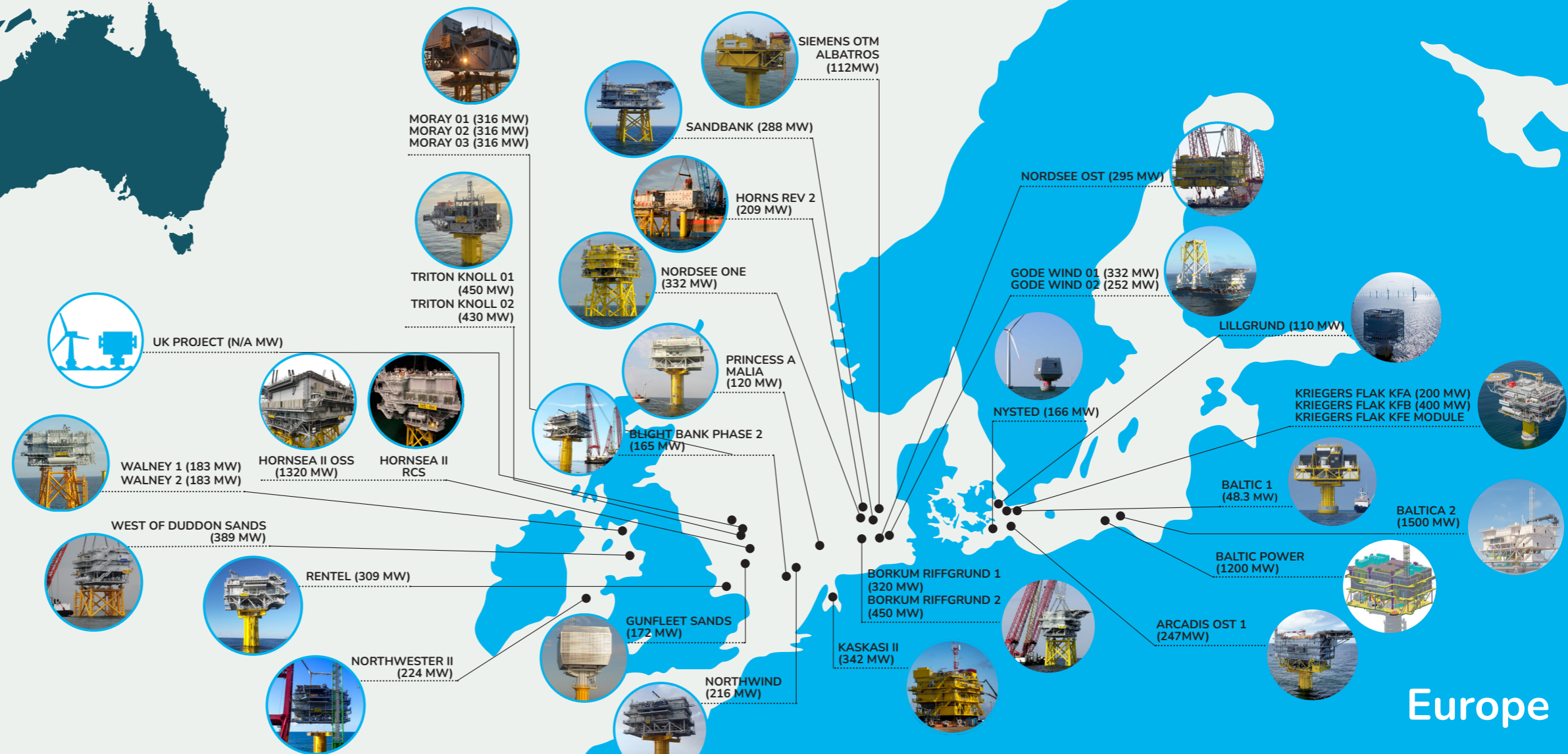
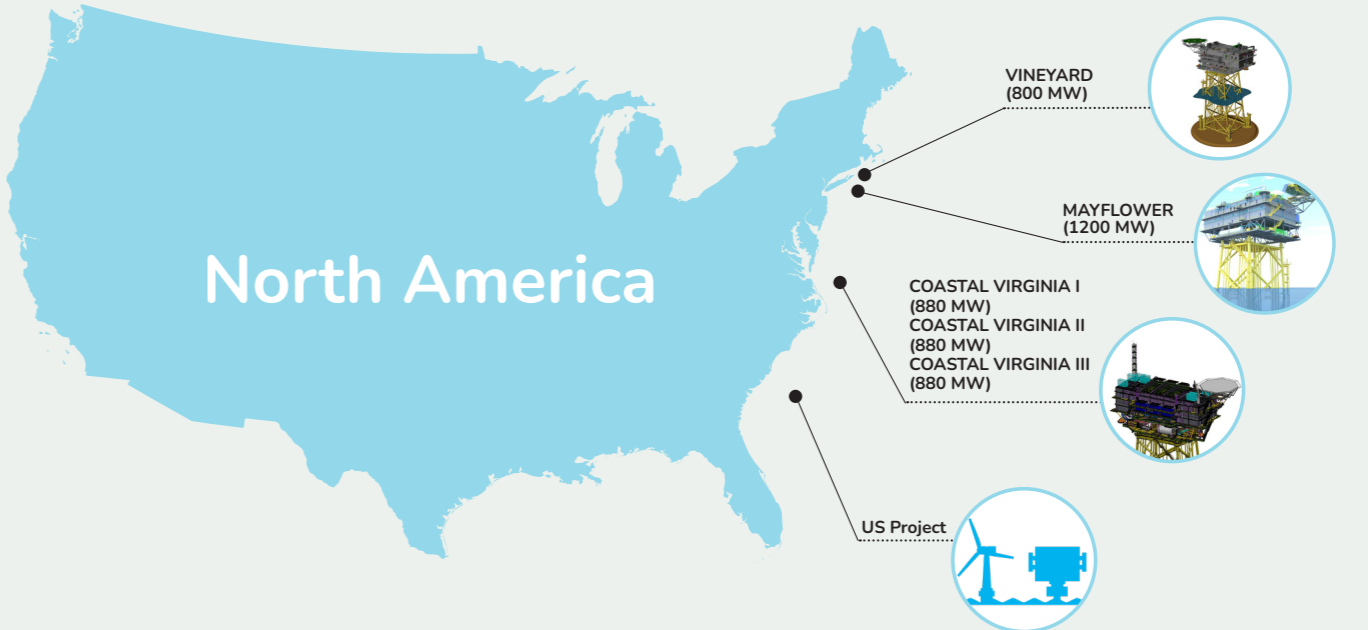


OFFSHORE SUBSTATIONS



ISC

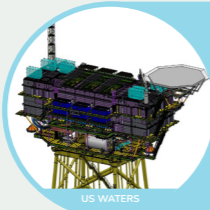
50+ DETAILED DESIGNS
BY ISC CONSULTING ENGINEERS



Europe



50+ DETAILED DESIGNS BY ISC CONSULTING ENGINEERS



COASTAL VIRGINIA I (880 MW)
COASTAL VIRGINIA II (880 MW)
COASTAL VIRGINIA III (880 MW)
Topside Weight: 4.000 tonnes
Installation Year: Expected 2026
Water Depth: 25.8/31.1/28.4 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Dominion Energy

Location: US East Coast



HORNSEA II OSS
Topside Weight: 8.000 tonnes
Installation Year: 2021
Water Depth: 36 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Ørsted

Location: UK North Sea



SANDBANK (288 MW)
Topside Weight: 2.230 tonnes
Jacket Weight: 1.560 tonnes
Installation Year: 2016
Water Depth: 29 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Owner/Client: Vattenfall/Bladt

Location: German Bight



BALTIC 1 (48 MW)
Transition Piece Weight: 1.100 tonnes
Installation Year: 2010
Water Depth: 18 meters
Substructure: Monopile
Detailed Design: TP/monopile
Client: EnBW/Ballast Nedam

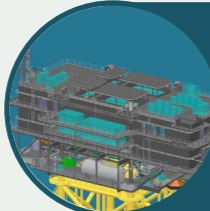
Location: German Baltic Sea



UK PROJECT (N/A MW)

Topside Weight: N/A
Installation Year: N/A
Water Depth: N/A
Substructure: N/A
Detailed Design: N/A
Owner/Client: N/A

Location: UK North Sea



HAI LONG II (532 MW) HAI LONG III (512 MW)

Topside Weight: 2.800/2.800 tonnes
Installation Year: Expected 2026
Water Depth: 26.8/30.1 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Hai Long Offshore Wind

Location: Taiwanese Coast



NORTHWESTER II (224 MW)

Topside Weight: 930 tonnes
Installation Year: 2019
Water Depth: 31 meters
Substructure: Monopile
Detailed Design: Topside
Client: Northwester II/Bladt

Location: Belgian North Sea



NORDSEE ONE (332 MW)

Topside Weight: 1.890 tonnes
Jacket Weight: 1.375 tonnes
Installation Year: 2016
Water Depth: 29 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: RWE Innogy/Bladt

Location: German Bight



WALNEY 1 (183 MW)

Topside Weight: 1.000 tonnes
Jacket Weight: 940 tonnes
Installation Year: 2010
Water Depth: 21 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Dong Energy

Location: UK Irish Sea



ASIA PROJECT (N/A MW)

Topside Weight: N/A
Installation Year: N/A
Water Depth: N/A
Substructure: N/A
Detailed Design: N/A
Owner/Client: N/A

Location: Taiwan Strait



MAYFLOWER (1200 MW)

Topside Weight: 4.200 tonnes
Installation Year: Expected 2024
Water Depth: 45 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Owner/Client: Mayflower Wind/BSR

Location: US East Coast



SIEMENS OTM ALBATROS (112 MW)

Topside Weight: 742 tonnes
Installation Year: 2019
Water Depth: 39 meters
Substructure: Monopile
Detailed Design: Topside
Owner/Client: EnBW/Siemens

Location: German Bight



GODE WIND 01 (332 MW) GODE WIND 02 (332 MW)

Topside Weight: 1.930/1.930 tonnes
Jacket Weight: 1.790/1.790 tonnes
Installation Year: 2015
Water Depth: 30/33 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Ørsted

Location: German Bight



WALNEY 2 (183 MW)

Topside Weight: 1.000 tonnes
Jacket Weight: 965 tonnes
Installation Year: 2011
Water Depth: 24 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Dong Energy

Location: UK Irish Sea



ANMA (523 MW)

Installation Year: Expected 2027
Water Depth: 20 meters
Substructure: Jacket
Detailed Design: Topside and Jacket
Owner/Client: HBA Future Energy/Anma Offshore Wind Energy

Location: South West of South Korea



VINEYARD (800 MW)

Topside Weight: 3040 tonnes
Jacket Weight: 2000 tonnes
Installation Year: 2023
Water Depth: 38.3 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Owner/Client: Vineyard Wind/Bladt

Location: US East Coast



KRIEGERS FLAK KFA (200 MW) KRIEGERS FLAK KFB (400 MW)

Topside Weight: 1.350/1.675 tonnes
Installation Year: 2018
Water Depth: 20/31 meters
Substructure: Concrete Gravity Base
Detailed Design: Topside/Substructure
Owner/Client: Energinet.dk

Location: Danish Baltic Sea



NORDSEE OST (295 MW)

Topside Weight: 1.650 tonnes
Installation Year: 2014
Water Depth: 23 meters
Substructure: Jacket
Detailed Design: Topside
Client: RWE Innogy/Bladt

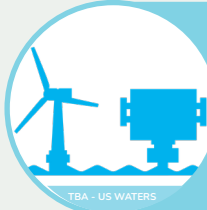
Location: German Bight



GUNFLEET SANDS (172 MW)

Topside Weight: 1.155 tonnes
Transition Piece: 155 tonnes
Installation Year: 2008
Water Depth: 15 meters
Substructure: Monopile
Detailed Design: Topside
Owner/Client: Ørsted

Location: UK North Sea



US PROJECT (N/A MW)

Topside Weight: N/A
Installation Year: N/A
Water Depth: N/A
Substructure: N/A
Detailed Design: N/A
Owner/Client: N/A

Location: US East Coast



ARCADIS OST 1 (247 MW)

Topside Weight: 2.200 tonnes
Installation Year: 2022
Water Depth: 43.7 meters
Substructure: MP/TP
Detailed Design: Topside
Client: Parkwind OST GmbH

Location: German Baltic Sea



KRIEGERS FLAK KFE MODULE (220/150 KV)

Topside Weight: 685 tonnes
Installation Year: 2018
Water Depth: 16 meters
Substructure: Concrete Gravity Base
Detailed Design: Topside/Substructure
Owner/Client: Energinet.dk

Location: Danish Baltic Sea



NORTHWIND (216 MW)

Topside Weight: 1.140 tonnes
Installation Year: 2013
Water Depth: 20 meters
Substructure: Monopile
Detailed Design: Topside
Client: Northwind Offshore Energy/Bladt

Location: German Bight



HORNS REV 2 (209 MW)

Topside Weight: 1.238 tonnes
Jacket Weight: 798 tonnes
Installation Year: 2008
Water Depth: 13 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Energinet.dk

Location: Danish North Sea



FENG MIAO 1 (500 MW)

Topside Weight: 3.200 tonnes
Installation Year: Expected 2026
Water Depth: 53-60 meters
Detailed Design: Topside
Owner/Client: Semco Maritime/Copenhagen Offshore Partners

Location: Taiwanese Coast



KASKASI II (342 MW)

Topside Weight: 1.250 tonnes
Installation Year: 2022
Water Depth: 38.3 meters
Substructure: Jacket
Detailed Design: Topside/MP/TP
Client: Innogy/Bladt

Location: German Bight



TRITON KNOLL 01 (450 MW) TRITON KNOLL 02 (430 MW)

Topside Weight: 1100 tonnes
TP + Cage: 755 tonnes
Installation Year: 2018
Water Depth: 27 meters
Substructure: MP/TP/Cage
Detailed Design: Topside/MP/TP/Cage
Client: Innogy/Siemens

Location: UK North Sea



WEST OF DUDDON SANDS (389 MW)

Topside Weight: 1.520 tonnes
Jacket Weight: 1.180 tonnes
Installation Year: 2013
Water Depth: 19 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Dong Energy and Scottish Power

Location: UK Irish Sea



LILLGRUND (110 MW)

Topside Weight: 670 tonnes
Installation Year: 2007
Water Depth: 10 meters
Substructure: Concrete Gravity Base
Detailed Design: Topside
Client: Vattenfall/Bladt

Location: Sweden Oresund



BALTICA 2 (1.500 MW)

Topside Weight: 2.800 tonnes x 4
Installation Year: Expected 2027
Water Depth: 32-47 meters
Substructure: Monopile
Detailed Design: Topside and Modular Support Frame
Owner/Client: Ørsted/PEG/Semco

Location: Baltic Sea



MORAY EAST 01 (316 MW) MORAY EAST 02 (316 MW) MORAY EAST 03 (316 MW)

Topside Weight: 1.252 tonnes
Installation Year: 2021
Water Depth: 22 meters
Substructure: Jacket
Detailed Design: Topside
Owner/Client: Edp renewables/Siemens

Location: UK North Sea



RENTEL (309 MW)

Transition Piece Weight: 800 tonnes
Monopile Weight: 1.100 tonnes
Installation Year: 2018
Water Depth: 31 meters
Substructure: MP/TP incl. Cabldeck
Detailed Design: TP/MP/Cabldeck
Client: Rentel/STX

Location: Belgian North Sea



BORKUM RIFFGRUND 1 (320 MW)

Topside Weight: 1.835 tonnes
Jacket Weight: 1.685 tonnes
Installation Year: 2013
Water Depth: 24 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Ørsted

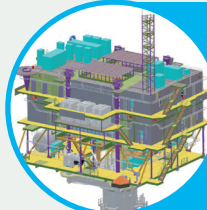
Location: German Bight



PRINCESS AMALIA (120 MW)

Topside Weight: 650 tonnes
Installation Year: 2007
Water Depth: 24 meters
Substructure: Monopile
Detailed Design: Topside
Client: Eneco/Bladt

Location: Netherlands North Sea



BALTIC POWER (1.200 MW)

Topside Weight: 2.350 tonnes
Installation Year: Expected 2026
Water Depth: 33-45 meters
Substructure: Monopile
Detailed Design: Topside/Substructure
Owner/Client: Baltic Power/Bladt/Semco

Location: Baltic Sea



HORNSEA II RCS

Topside Weight: 1.852 tonnes
Installation Year: 2021
Water Depth: 32 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Ørsted

Location: UK North Sea



BLIGH BANK PHASE 2 (165 MW)

Topside Weight: 970 tonnes
Installation Year: 2016
Water Depth: 10 meters
Substructure: Monopile
Detailed Design: Topside
Client: Nobelwind/Bladt

Location: Belgian North Sea



BORKUM RIFFGRUND 2 (450 MW)

Topside Weight: 2.185 tonnes
Jacket Weight: 1.670 tonnes
Installation Year: 2018
Water Depth: 27 meters
Substructure: Jacket
Detailed Design: Topside/Substructure
Client: Ørsted

Location: German Bight



NYSTED (166 MW)

Topside Weight: 670 tonnes
Installation Year: 2003
Water Depth: 6-10 meters
Substructure: Concrete Gravity Base
Detailed Design: Topside
Client: Ørsted

Location: Danish Baltic Sea

SERVICES

We provide independent engineering consultancy directly for wind farm owners and developers and EPCI contractors. We are market leaders with more than 50 detailed designs for offshore substations and cooperate with frontrunners worldwide.

OUR SERVICES INCLUDE

- Feasibility study
- Concept study
- FEED designs
- Basic & detail design
- Workshop drawing
- Assistance with certifications
- Assistance with authority approval
BSH, Boem etc.
- Offshore assistance
Skilled staff holding offshore certificates.
- Employer engineer
Engineering support during detail design, manufacturing and commissioning.
Development of employers' requirements, philosophies and assistance doing EPC/EPCI contracting.

ENGINEERING DISCIPLINES

- **Electrical**
All electrical installations. Cable-ways, earthing and bonding, single line diagrams, power- and light installations, fire alarm systems, auxiliary systems and ATEX area classification.
- **Fire & safety**
We are cooperating with the client to achieve cost-effective fire & safety design. Chaired hazid and hazop sessions for the client, risk management and studies, fire and explosion risk assesment (FERA).
Escape, evacuation and rescue analysis (EERA), ALARP register, risk assesments, FOAM and argonite systems.
- **General arrangement**
We are working with the client to achieve the best platform layout solution: Monopiles, Transition Pieces, Jackets etc.
- **Geotechnical design**
Design of piles, soil interpretation etc.
- **HVAC**
Design of systems to maintain the correct conditions for the sensitive platform equipment.
- **Mechanical**
Working with the client to ascertain the appropriate demands and specifications for equipment lifting and environmental protection.
- **Piping**
Open drain, bunkering, de-bunkering, seawater cleaning, technical water and sewage systems, sea water systems etc. Isometrics, material lists and stress analysis. Technical specifications and datasheets.
- **Process**
Process flow (PFD), process & instrumentation diagrams (P&ID), flow calculations, technical specifications and datasheets.
- **Project management**
- **Structural**
Design of an economical yet robust structure that optimises efficient installation.

ISC CONSULTING ENGINEERS

We are an engineering services company based in Denmark, where the company was also founded in 1967.

ISC has been providing engineering services to offshore wind projects since we designed the world's first offshore substation, Nysted, more than 20 years ago.

Since then we have successfully undertaken the complete detailed design of 50+ offshore substations. Our portfolio demonstrates comprehensive expertise within the field of offshore substation design, including a broad spectrum of topside layouts as well as jackets, gravity-based, and monopile substructures.

To learn more visit us on

<https://www.isc.dk/en/services/renewable-energy>



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