

## N-Sea is an integrated total subsea solutions provider in Survey, IRM & Construction, Subsea Cable Repair & Installation, and UXO ID & Disposal.

We deliver total solutions for subsea infrastructures and assets that meet the needs of our clients and the international oil & gas, and renewable industries, considering a safe environment.

We want to create a sustainable business and increase our profitability through solid project management and full client awareness.

To realise this ambition we develop our organisation to the level of best in class being fully synchronised with our ambition and strategy by contributing to the following key success factors constantly:

- Qualified and engaged people
- Long term client relationships
- Strategic partnerships
- Innovative solutions
- Safety and quality 100%
- Visible presence
- Full control over marine assets

### Safety, Health, Environment, Quality (SHEQ)

Our SHEQ Policy aims to ensure alignment to the N-Sea mission, vision and strategy, where 'first time right' means ensuring that harm is not inflicted upon its employees, contractors, service providers, or the environment, N-Sea's assets, as well as members of the public affected by its operations, infrastructure and all operational activities within our scope of work.

N-Sea management and all employees are committed to create a physical, social and psychological safe working environment. We ensure the well-being and protection

of human life, environmental duty of care, protection of assets and customer satisfaction.

N-Sea has integrated safety, security, health, environment and quality requirements into all our activities so that decisions made ensure the consideration of economic development, environmental quality, and social equity to continually improve performance and achieve stakeholder requirements.

***“We genuinely care. We avoid harm to people and the environment while providing quality services to our customers.”***

To achieve our mission statement, we have established 4 core values that guides all employees in building their personal roles and developing our organisational culture.

We are driven to perform in accordance with the industry best practices and meet the requirements of ISO 9001 (Quality Management), ISO 14001 (Environmental Management) and ISO 45001 (Occupational Health & Safety Management) for which we are certified.

A safe working environment is vitally important to N-Sea. The safety awareness and actions of our employees play a crucial role in ensuring occupational, social and psychological safety within our organisational culture. This is reflected by our Level 3 Safety Culture Ladder certification.

## Windfarm project in the North Sea

Cable replacement / repair

<b>Client</b>	Dutch Windfarm Owner
<b>Location</b>	Dutch North Sea
<b>Period</b>	July 2021 - September 2021
<b>Assets</b>	MV Elektron - CLV, RS Sentinel - DSV
<b>Extra</b>	4 x CTVs, MFE system, 2 x ROVs, 125 project team members

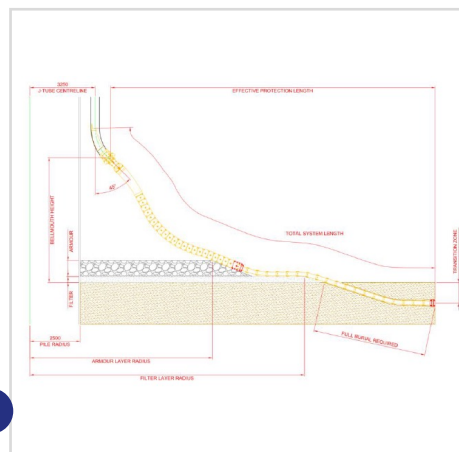
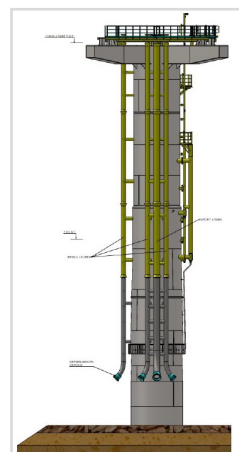
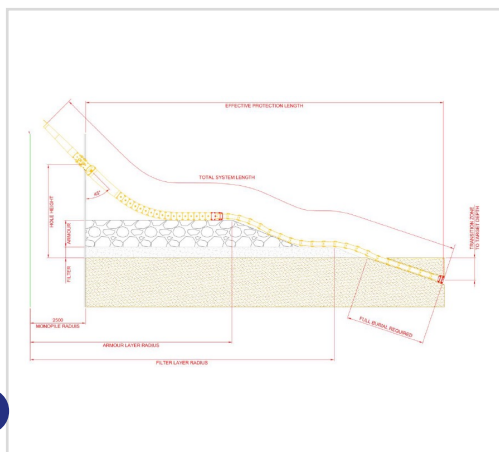
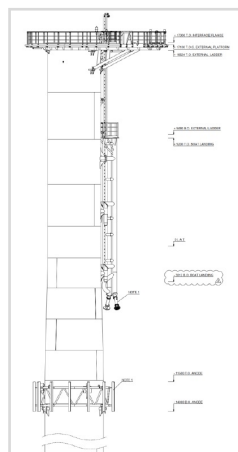
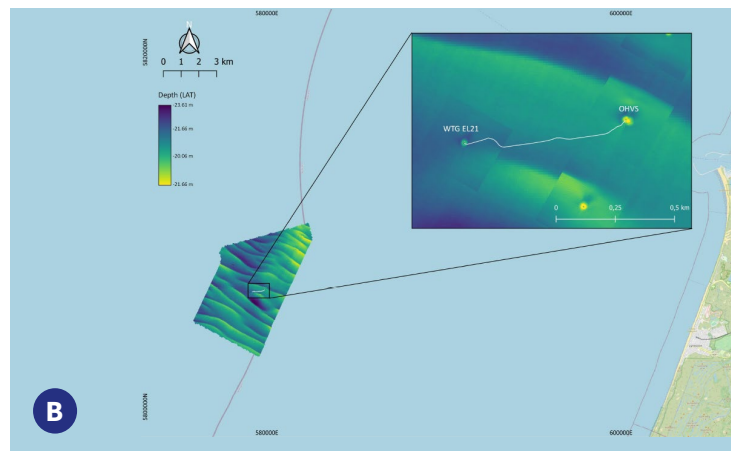
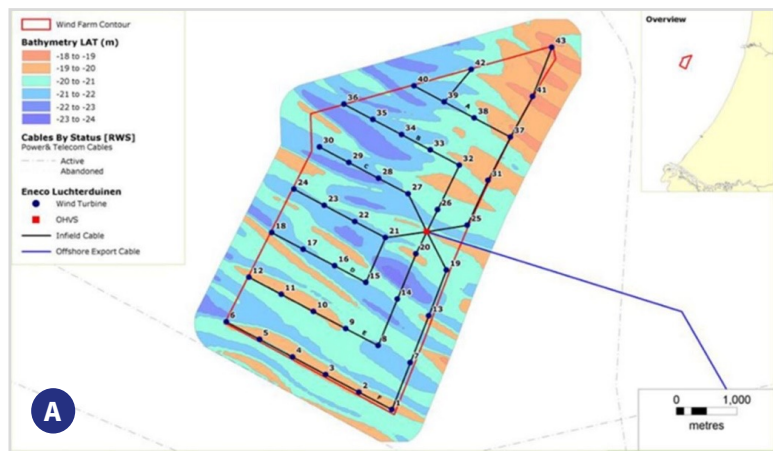
### Project description

The Offshore Wind Farm (OWF) comprises 43 wind turbines of 3 MW each installed on monopile foundations, totaling 129 MW capacity. The offshore wind farm is in the North Sea about 23 kilometres off the Dutch western coast, WSW of IJmuiden. The wind turbines are connected through 43 infield power cables to the Offshore High-Voltage Station (OHVS) from where a subsea export cable transports the generated power to the Dutch mainland near of Noordwijk. The Infield or inter-array cables have a capacity of 33 kV, and the turbines are connected to the OHVS by six different strings. The OHVS has a capacity of 160 MW and has been connected to shore by means of a 150kV AC cable.

Due to an unplanned event the infield cable between the OHVS and a Turbine is out of operation. As the electrical system has been designed and constructed in series, the consequence of the defect cable is that eight turbines are out of operation.

N-Sea Offshore BV was awarded the contract to perform cable replacement between OHVS – Turbine project. The scope of work was as:

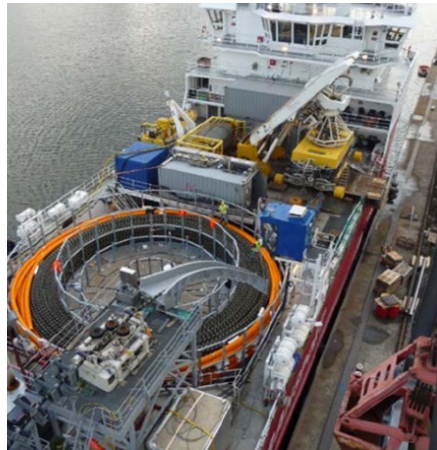
- Engineering, analysis, method statements,
- Offshore topside preparations, Pull-out, and Pull-in cable operations
- Subsea preparations, J-Tube, CPS and cable intervention and de-burial
- Mobilisation of a cable replacement vessel, Mob of DSV with CFE and ROV
- Removal of the existing cable from the Turbine towards OHVS with focus on preservation of intact section of cable for shore analysis of failure
- Removal of the existing cable + CPS from the OHVS
- Cleaning of the existing CPS at Turbine and the J-tube at OHVS
- Reinstallation of the OHVS J-tube bell mouth
- First-end pull-in of the spare cable including CPS at the OHVS
- Cable lay up to EL21 followed by a second end pull-in
- Burial of the laid cable to 1.5m depth



**A** Field layout of offshore windfarm **B** Cable route of failed cable and the requirement to relay the cable in the same trench, position due to Known UXOs and hazards.  
**C** Cross profiles of EL21 WTG (left) and EL21 CPS setup (right) **D** Cross profiles of OHVS monopile (left) and OHVS CPS setup (right)

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**E** MV Elektron – Cable repair vessel loading replacement cable in Vlissingen **F** 1 of 4 CTVs utilised on the repair project to cover 24/7 ops on OSS, TPs, CLV, DSV **G** MV Elektron and its back deck setup

**WE LISTEN  
THEN DELIVER**

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