



Innovation, certainty
and confidence to
assist in the world's
transition to a low
carbon future.



Correll
GROUP

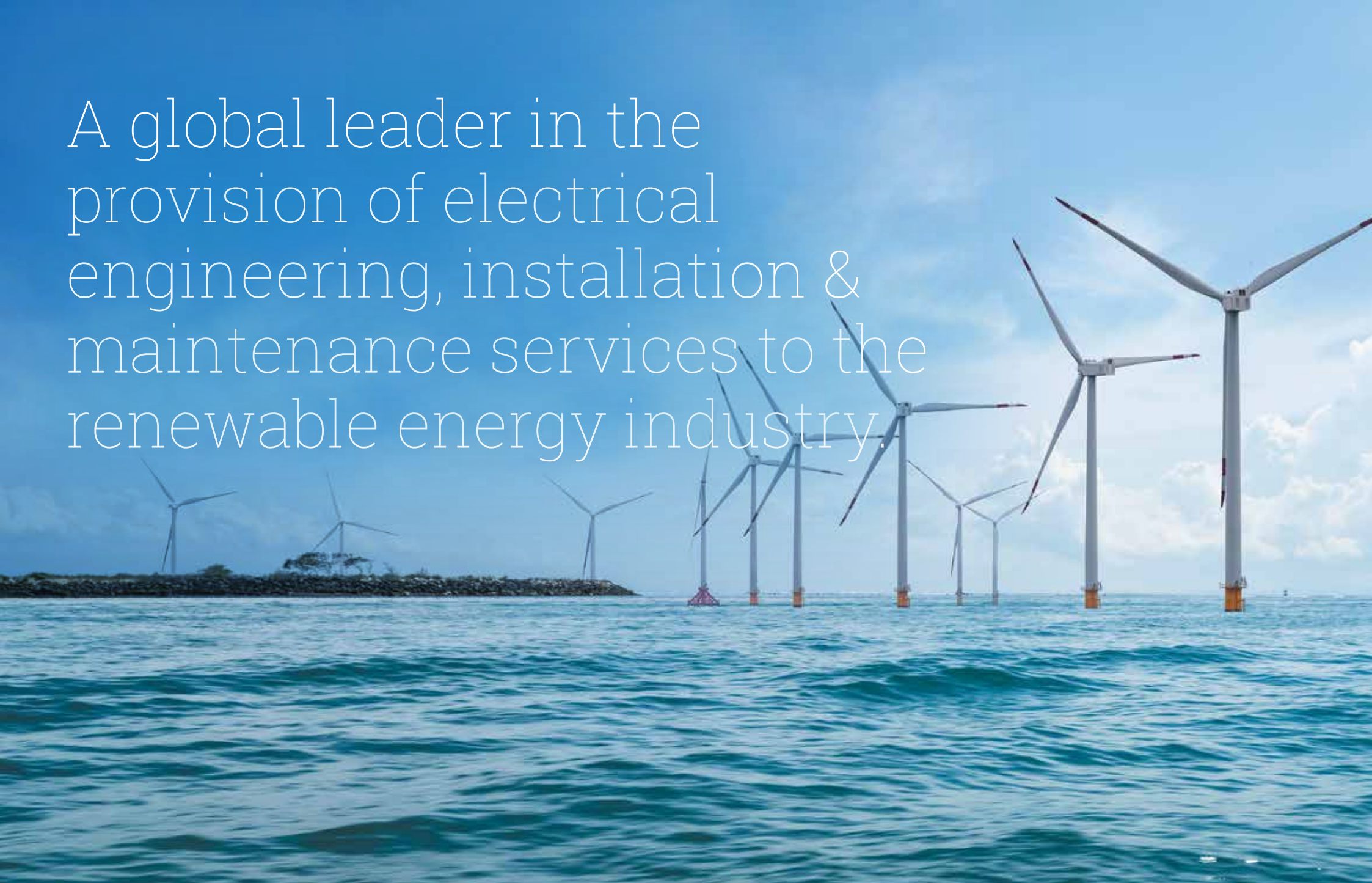




Contents

- 03 Who is the Correll Group
- 04 What we do
- 06 Global Experience
- 08 Our Services
- 10 Electrical Engineering
- 12 Cable Installation & Power Services
- 14 High Voltage (HV) Management
- 16 Equipment Rental
- 17 Training & Development
- 18 Project Experience
- 20 Find out more

A global leader in the provision of electrical engineering, installation & maintenance services to the renewable energy industry.



Who is the Correll Group?

**A leading service provider in the Onshore
and Offshore Renewable Energy Sectors.**

Providing specialist support in High Voltage, Low Voltage and Fibre Optic Engineering, Control Room Asset Monitoring, HV Safety Rules, Construction Support and Service Operations and Maintenance across the UK, Europe, Asia and the USA.

With access to a team of over 400 technicians across the business Correll present a strong and substantial offering to the onshore and offshore renewable energy sector.

What we do

Correll Group's focus is in the onshore and offshore renewable energy sector.

Our head office is in the North East of England, with additional offices and operational bases strategically located in Europe, Asia and the USA to support global offshore wind projects.

Our team of industry professionals have extensive experience working on many of the most significant wind farms across the world. This knowledge and experience enables us to work with our customers' to develop solutions that address the challenges of any project and precisely meet their needs.

Why Correll?

Accomplished team - working in the wind sector for over 20 years, 10 years offshore

Geographical spread, and growing

Proven track record, operationally and safety

Breadth of services

Qualified and experienced team, over 400 technicians

Dynamic and easy to work with

Continual investment in training / research & development



Our Vision

To continue be a leading provider in the onshore and offshore renewable energy sector. Providing our customers with seamless integrated support across all their needs, generating value and long term relationships. Combining innovation, certainty and confidence to contribute towards a net zero carbon future.

Our Values

Our core values of safety, environment, operational excellence, integrity, mutual respect and teamwork are the basic principles we follow in the collaboration with our employees, business partners and society.



Safety



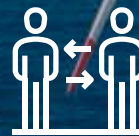
Environment



Operational Excellence



Integrity



Mutual Respect



Teamwork

Global Experience

The Correll Group are proud to have been involved with the construction and operation of many of the world's significant wind farms, through the provision of . . .

Electrical Engineering

Cable Installation &
Power Services

High Voltage (HV)
Management

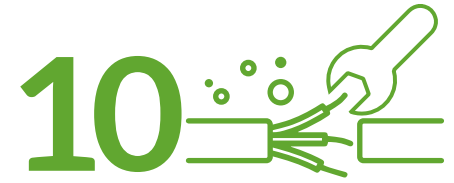


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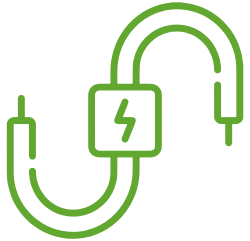
Man Hours



12 Global Reach
12 Countries



10 Sub sea Cable Repairs



2488

66kV
Connections

1422

33kV
Connections

78

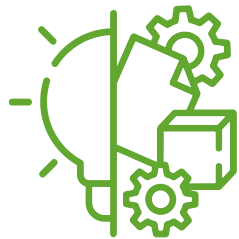
230kV
Connections

35

132/155kV
Connections

27

11kV
Connections



152

Projects
Completed



10

Cable Pull-In
Contracts



0

Failure Record

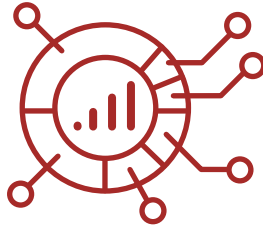
Our Services

The Group offer a wide range of services and solutions to the onshore and offshore renewable industry.

Our dedicated team of industry professionals provide customers with seamless integrated support across all their needs, generating value and resulting in long term relationships.



Installation Services



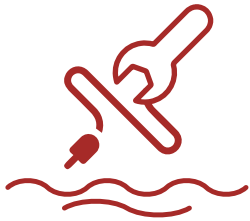
Engineering Support



Project Management



Emergency Call-Out



Cable Installation
Offshore



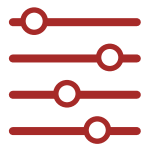
Cable Installation
Onshore



Power Services
Offshore



Supporting
Services



O&M Team
Control Centre



HV Commissioning
SAP/Control Engineers



Equipment
Rental



Training & Development



Correll | Electrical
Engineering

Electrical Installation Services

Specialists in mission-critical High Voltage, Low Voltage and Fibre Optic installation, termination, repair and maintenance of energy transmission networks.

Correll are the market leader for High Voltage cable termination and testing services, trusted by customers to ensure wind farms are brought on-grid efficiently and reliably.

We possess an unparalleled track record of safety, quality, efficiency and reliability, and offer a range of flexible delivery models offering the full-suite or specific individual services tailored to your application.

Correll Electrical Engineering's core offering is preparing cables before they are connected to the wind turbine – EHV/HV/LV & FO cable stripping, jointing, termination and testing up to 235kV.

Services include:

Post installation testing

Structural installation

Fault finding

Joining and terminations up to 235 kV

Engineering Support

Regardless of where your requirements are in the world, Correll Electrical Engineering can provide exceptional engineering support with the following engineering activities.

Pre-project engineering and meetings

Pre-mobilization inductions

Mock-up facilities

Project Management

Our experience ensures installation projects and maintenance works are performed efficiently and successfully through planning, execution, delivery, lessons-learned and close-out phases.

Services can be provided for in-house installation, overseeing sub-contractors, representing clients or supplementing an existing team.

Correll's in-house developed software captures project specific information for client reports, accurately tracks progress and supports documentation.

Emergency Call-Out

To support clients, Correll offer a bespoke service, responding to an emergency call-out request through our 24/7 control centre providing the following:

Services include:

Post installation testing

Structural installation





Correll | Cable Installation
& Power Services

Cable Installation Offshore

Specialising in delivering cable pull-in solutions or turnkey packages for both cable pull-in and termination and testing services.

Led by a team of industry experts to execute offshore cable installation projects globally.

Primary installation service is the pull-in of export and inter-array cables (IAC), the transfer of cables from vessel or subsea to the wind turbine.

Services include:

- IAC & export cable installation / repairs / replacements
- AC / FO cable repairs / replacements
- Cable stripping
- Engineering and design for lifting operations
- Mini ROV survey works / data collection
- Messenger line installation
- Temporary hang off installations

Cable Installation Onshore

Extensive experience in executing underground onshore cable installation project scopes.

Services include:

- Beach pulls
- Engineering & civils
- Messenger line installations
- Bellmouth installations

Power Services Offshore

Providing bespoke temporary power and refuelling solutions at short notice to protect the integrity of the offshore assets during repairs or planned O&M periods.

Products and services include:

- CTV charters & refuelling programs
- Fleet of maritized 30kVA generators
- Engineering, design & fabrication of modular set ups

Supporting Services

Utilising best-in-class support teams to provide optional on-going support packages and the provision of consultancy manpower to provide:

Secondary works & inspections

- Walk downs and reporting of transition pieces
- Bolt replacements packages
- Confined space and rescue packages
- Guano cleaning teams
- Consultancy and client reps





Correll

High Voltage (HV)
Management

O&M Team

Full range of operations and maintenance services provided by expert engineers ensure all system assets are functioning with the same efficiency as when they were first commissioned.

Services include:

Routine asset inspections

Maintenance on all types of HV equipment, including planned and unplanned maintenance

Thermal imaging

Oil sampling and evaluation

Fault finding and rectification

Partial discharge testing and reporting



Control Centre

Coming 2023, the Control Centre will operate on a 24/7 basis allowing local and remote control of HV wind turbine functions, and further digitalises the wind farm data which can be used to analyse and report on operational performance.

Services include:

- Continual monitoring and control of construction and commissioning activities
- Remote alarm monitoring
- Condition monitoring and fault-finding services

HV Commissioning

Team of highly skilled and experienced HV engineers ensure that the commissioning process runs seamlessly.

Core services include HV design, review and quality management.

Other services include:

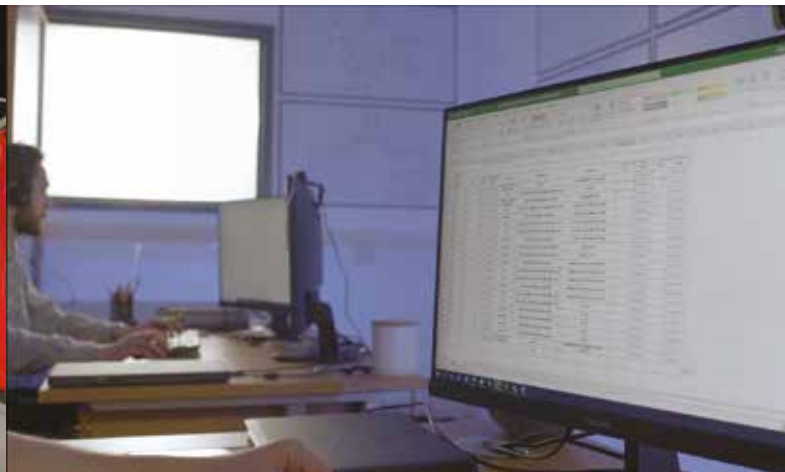
- Hot and cold commissioning
- Factory acceptance testing
- Site acceptance testing

SAP's / Control Engineers

Available 24/7 to provide complete reactive support with regards to safety.

Services include:

- Tailored HV safety rules training to engineers
- Creating bespoke HV safety rules
- Holistic HV site management
- Maintenance management





Correll hold a large fleet of specialised test equipment and accessories used for the installation, commissioning and maintenance of offshore wind farms, cables and systems.

Continuous investment into additional assets ensures the equipment is readily available for the clients' specific application.

All equipment is competitively priced to assist customers increase profits with reduced rates aligned to the duration of hire. Test fleet includes:

- | | |
|---------------------------------|---|
| VLF test sets | Optical monitoring system |
| Damped AC test sets | Smart thumpers |
| TDR's long range | Bridge test sets |
| Insulation resistance test sets | DLRO ductor test sets |
| Sheath test sets | Multi-function fault location test sets |
| Partial discharge detection | Primary injection test sets |
| Relay test equipment | Secondary injection test sets |
| OTDR's | Specialist tooling equipment |

The group also hold a hire fleet of installation equipment and tooling such as:

- | | |
|-------------------------|-------------------------|
| Optical fusion splicers | Ancillaries |
| Fibre optic tool kits | Hivotec CP range |
| High voltage tool kits | Pfisterer (size 3 to 6) |
| Mechanical tool kits | Cable heating blankets |
| Work benches | |



Correll

Training & Development

Correll utilise both in-house and industry leading partnerships to deliver bespoke training for HV safety, cable installation, testing, fault location and repairs.

Qualified, experienced trainers deliver vendor specific cable termination training, and can perform mock-up trials to enable both internal and client technicians to become competent with project specific HV/FO installation, testing and maintenance.

Set-up includes:

Siemens 33kV gas insulated switchgear (3 cubicles)

HV cabling (subsea, XLPE, EPR)

Hang-off systems

Containment

Mock transformer bushings

Gantry levels
(as found on TP's and WTG's)

Cable pulling equipment

Fibre optical cables

Fibre optical junction box (with cassettes and bulk-heads)

Having the Siemens GIS equipment as part of our set-up, enables us to train our technicians on other switchgear related activities.

Switching operations (circuit breaker, disconnector & earthing)

Secondary injection testing

With the subsea and transformer cables connected to the GIS, we can simulate conditions to train our technicians in the following techniques:

Insulation resistance testing

Sheath testing

TDR testing

Very low frequency testing

Partial discharge testing

Optical time domain testing



Project Experience

Here are just some of the offshore renewables projects we have worked on:

1 Formosa 2

376 MW project comprises 47 Siemens Gamesa 8 MW WTGs covering an area of 68.81 km²

Jan De Nul awarded the contract to the Correll Group for the termination and testing of the 66kV sub sea cables.

The wind farm will comprise 47 Siemens Gamesa 8MW turbines on top of jacket foundations and will generate 378MW - enough green electricity to power 380,000 households each year.

Over its lifetime, Formosa 2 is expected to offset approximately 18.75 million tonnes (Mt) of carbon emissions.

2 Chang Fang and Xidao (CFXD)

Expected to generate 5,300 jobs and TWD \$9.2b (\$302.6m) in economic value for Taiwan

Located 11 km off the coast of Fangyuan Township, Changhua County, Taiwan

598 MW project comprises 62 Vestas 9.5 MW WTGs

The contract was awarded by Seaway Offshore Cables for the termination & testing of 58 inter-array and 7 offshore export sub sea cables.

Upon completion, the wind farm will consist of 62 Vestas 9.5MW turbines with a combined capacity of 589MW. A network of approximately 73km of 66kV inter-array, buried, sub sea cables will be used to connect the turbine strings.

3 Princess Amalia

At the time of construction Princess Amalia was the world's deepest offshore wind farm.

23km from IJuiden, Holland

120 MW project comprises 60 Vestas V80-2.0 WTGs

The wind farms annual power production is approximately 435GW/h, sufficient to power 125,000 households.

The contract was awarded by Jan De Nul for the replacement of inter-array cables utilising Correll's cable pull-in and termination and testing teams under our new bespoke turnkey solution.

4 Block Island Demonstrator

First commercial offshore wind farm in the US.

4.8km from Block Island, Rhode Island in the Atlantic Ocean

30 MW project comprises 5 GE Haliade 150-6MW WTGs

The wind farm is a project of Deepwater Wind. The wind farm generates approximately 125GWh of clean energy a year, which is enough to serve approximately 17,000 households, and further reduces electric costs by 40% on Block Island.

The contract was awarded by Global Offshore to support the project with HV and FO services associated with the cable repair/replacement.

5 Saint-Nazaire

First commercial offshore wind farm in France.

12km to 20km off the Loire-Atlantique Coast

480 MW project comprises 80 GE Haliade 150-6MW WTGs

Once fully operational, the wind farm will supply approximately 20% of the domestic electricity consumption of the Loire-Atlantique region.

Contract awarded by Prysmian Group for the pull-in of two 225 kV HVAC export cables (each about 33 km in length), to the offshore 480 MW substation platform.

6 Coastal Virginia

Second offshore wind farm in the US.

43km off the coast of Virginia Beach, Virginia, US

12 MW project comprises 2 Siemens Gamesa 6 MW WTGs

The initial phase, a two-turbine, 12 MW pilot project is expected to generate enough electricity to power up to 3,000 homes. It is the first utility scale wind farm serving Virginia and the first built in U.S. federal waters.

The contract was awarded by Seaway Offshore Cables, trialling Correll's unique concept of utilising an 'integrated cable-pull and testing & termination team' for completion of the sub sea cabling works within the WTGs.

7 Hornsea Two

The world's largest offshore wind farm.

89km off the Yorkshire Coast, UK

1.4 GW project comprises 165 Siemens Gamesa 8.0-167 DD WTGs

Hornsea Two offshore wind farm is expected to provide clean electricity to more than 1.3 million homes in the UK.

Prysmian Group awarded the contract to the Correll Group for the completion of HV and FO termination and testing works.

8 Formosa 1 (Phase 2)

Formosa 1 generates enough green electricity to power 128,000 households in Taiwan.

Approximately 6 km off the west coast of Miaoli in the straight of Taiwan

128 MW project installed over 2 phases

The contract was awarded by Swancor Renewable Energy to support with a Senior Authorised Person and a Control Engineer.

Correll delivered works both offshore, on the Wind Turbine Generators, and onshore, on the substation.

Our operatives also conducted training sessions to the local Taiwanese engineers in order to ensure future ongoing safe operation of the High Voltage Equipment both onshore and offshore.



Find out more

What can Correll Group do for you?

www.correllservices.com



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