



Rotech Subsea were contracted to assist with cable de-burial, post-lay and remedial trenching operations on an offshore wind farm offshore Taiwan. Rotech provided the TRS1LD Controlled Flow Excavator (CFE) equipment spread to carry out this scope.

Rotech were to carry out:

- De-burial of wet stored export cable sections
- Export cable remedial burial works
- Inter-array cable remedial burial works
- Inter-array cable backfill works

Project Information:

Water Depth	-	30– 55m
Scope	-	cable de-burial, post-lay and remedial trenching, Backfill Operations.
Soils	-	Silty Sands, Clays, Very Dense Gravel with Cobbles.
Currents	-	Up to 2 Kts
General Sea State	-	0.50 – 3m

The TRS1LD was deployed off the starboard side of the vessel using the ships crane. Outriggers and clump weights were setup forward and aft of the CFE tool and then connected to it with running lines to control the tool orientation.

The TRS1LD remained suspended above the seabed / cable to complete all trenching operations. The vessel's DP positioning system was used to move the CFE tool along the cable routes/areas that required trenching works. USBL transponders fitted to the tool provided accurate data on the location of the TRS1LD to ensure operations were completed in the correct locations.

Trench depth was monitored real time using a sonar imager mounted to the CFE tool to confirm when the cable exposed for de-burial operations and when the cable had been buried to the correct specification for the remedial burial works.

Once Rotech completed their scope, the client surveyed the area using separate survey equipment to confirm that the completed trenching ops met the required specifications.

De-burial and remedial excavation was completed using minimal power to avoid possible free-span.

Trials were completed in 10m sections at various power levels 30-80%, and at various standoff distances from the cable/seabed, 1.3m standoff from cable and 2-4m offset, vessel speeds of 2-5m/min BOT depths ranged from 0.35-1.20m.

Once the trials had been completed Rotech were able to complete the actual trenching scope with the optimal settings to achieve the clients desired trench specification.

The TRS1LD CFE tool has a maximum outlet pressure of 140kPa and a max jet flow of 2,600L/s. The soils in the area were extremely variable with Silty Sands, Clays, Very Dense Gravel with Cobbles all encountered throughout the project. Despite this, the Rotech CFE tool successfully completed the required operations on schedule with no issues.

Rotech Crew and the vessel deck crew worked very well together with good communication which lead to safe & efficient tool launch and recovery operations, and overall project success.

The TRS1LD performed as expected and achieved the excavation specifications required by the client.