

Guernsey Electricity Limited

24MW Cooling Tower Replacement

June –August 2019



***Guernsey
Electricity***



Background

- Guernsey Electricity Limited (GEL) has been the major provider of electricity to the Island for over one hundred years.
- Since October 2000, most of the energy used has been imported from France via Jersey. This has brought environmental and operating cost benefits and security of supply. By early 2012, 80% of the Island's energy was supplied via the subsea cable.
- As part of the investment in supply chain resilience GEL approved a project to replace its ageing cooling tower infrastructure
- Following an earlier service inspection, the Cooling Tower arrays servicing two of the engines on the GEL site located at Northside, Vale, Guernsey, had been deemed as beyond economical repair.
- The original Cooling Tower arrays had been demolished leaving the original basin in preparation for replacements to be installed; returning these engines to operational service.
- The power station is located in close proximity to a residential area therefore ensuring minimal operating noise levels was important to the scope of supply.
- Vistech were successful in winning the competitive tender for the design and installation of a new Cooling Tower array including the refurbishment of the original basin delivering 24MW of cooling capacity.

Client Requirements



Sound Levels

Nearby Residential Area
therefore strict sound level
requirement



Capacity

Essential to achieve 24MW
heat rejection



Coastal Location

Towers needed to
withstand harsh
environmental conditions



Availability of Parts

Important to provide
continuity of service



Turn-key Project

One contractor for all parts
of the project

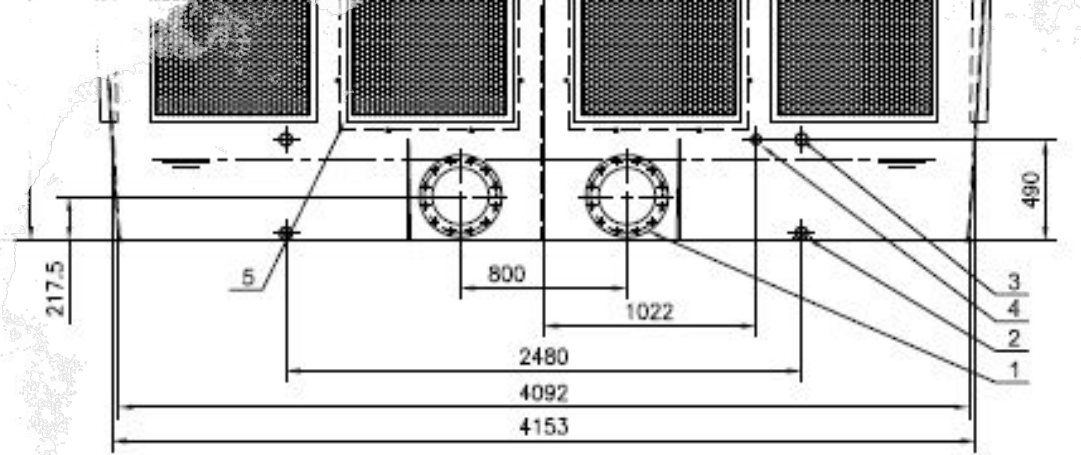
The Solution


- Vistech proposed four packaged cooling towers offering the fastest delivery, assembly and installation times.
- The towers deliver low energy consumption and a maintenance free GRP casing that significantly cuts lifetime operating costs compared to both mild steel and stainless-steel cooling towers.
- The coastal location of these units is ideally suited to GRP unlike stainless steel and mild steel that would typically corrode in these conditions.
- In addition, the existing concrete sump was to be coated with HPR-513-UC complete with a 5-year warranty for materials and workmanship.



Key Features of the Cooling Towers

- Anti-legionella packing and drift eliminators
- GRP moulded sump & casing giving total corrosion resistance
- High efficiency spray distribution system
- Induced draught design for maximum cooling efficiency
- Low energy design minimising operating costs
- Large aperture access door
- CleanSafe flooring
- Fan access platform
- SaniCasing legionella protection
- Fan Inverter Control- VSD for minimum energy consumption
- Exhaust Attenuators



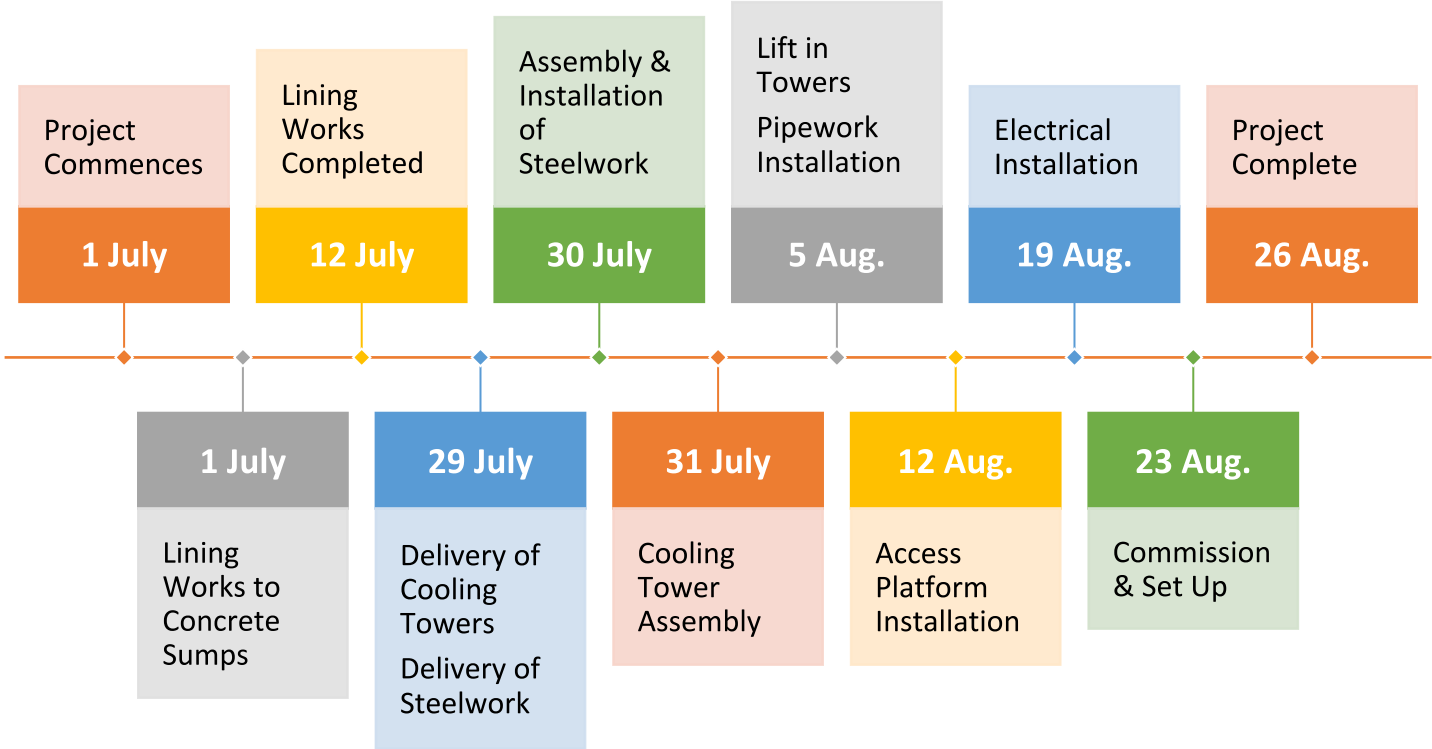


Scope of Supply

- **Preparation and Coating** of Existing Concrete sumps with HPR-513-UC
- Supply delivery and assembly of four evaporative **Cooling Towers** model EWK-1800/09 with a combined heat rejection capacity of **24 MW**
- The design, supply delivery and assembly of one galvanized after manufacture **Support Structure** to adapt the existing concrete pond to the support the new cooling tower
- Design and Installation of 304 Grade **Stainless Steel** flow and return **Pipework** to cooling towers
- **Electrical Works** including VSD fan control and control panels



Programme of Works



Client Reference

“Guernsey Electricity required new cooling towers to be installed so a request for proposal was submitted to Vistech. Following review of the proposal Vistech was selected as the supplier based on the proposed engineering solutions, ability to deliver within a required time together with resources and experience.

Having been selected as the supplier Vistech produced all drawings and technical documentation as required and were always available to discuss any changes or questions as required. During the design stage of this project other operational situations within our business meant the timescales had to be altered and the project delivered to a quicker completion date and Vistech were able to support this and deliver the project ahead of schedule.

As the project entered the installation stage all the team from both Vistech and their subcontractors were extremely professional and the standards of work were excellent leading to the project being delivered ahead of schedule, without any injuries or incidents and delivering the performance detailed within the initial proposals.

In summary Vistech were a pleasure to work with on this project and delivered everything they promised they would do.”

Dean Vizia, Lead Operations Engineer