

Dunore Point Water Treatment Works Renewable Energy Project

NI Water Solar farm on 'Point'

£6.4m

/ Project value

July 2017

/ The project commenced

March 2018

/ The project was completed

The winner of the Sustainable Building Project of the Year Award at the Sustainable Ireland Awards (2018), the Dunore Point Water Treatment Works (WTW) Solar Farm is expected to save NI Water (NIW) £0.5m annually in energy costs. Our upgrade works (civil engineering, and mechanical, electrical, instrumentation, controls, automation [MEICA]) included the design, construction, commissioning and testing of a 6.5-Megawatt grid connected to a solar photovoltaic system, and a complementary development programme within the lands of Dunore Point WTW. Located on the Lough Neagh foreshore, the 33-acre site, which now accommodates 23,936 solar panels, is helping NIW to achieve its target of increasing electricity consumption from renewable sources to 40% by 2021 (from a benchmark of 13%).

The brief

This innovative renewable energy project was completed under NEC3 Option E conditions. A further example of our long-term partnership with NIW, it was procured via the IF100 Water and Wastewater Non-Infrastructure – Major Works Framework.



"I would like to personally thank everyone in the team for getting this important project over the line. NI Water appreciates the hard work and endeavours of all – this is a great landmark project."

Paul Davison
NI Water's Project Sponsor

“The Dunore Point Solar Farm is a major step toward reaching our goal of increasing electricity consumption from renewable sources. Dunore is one of many innovative renewable energy projects which NI Water is developing to ensure we become more energy efficient while also making cost savings to our business.”

Sara Venning
NI Water CEO

The challenges

The maintenance of the existing services provided by the WTW was a priority throughout our programme. Therefore, the construction of new building infrastructure and cable trenching was completed off line. We also conducted detailed ground investigations, including GPR surveys, within the WTW, which allowed us to avoid clashes with existing assets and the potential for shutdowns or diversions. To improve functionality, our design was developed to meet the needs of the two end-users – NIW and Northern Ireland Electricity (NIE).

The solution

This “landmark” project is helping NIW to become “more energy efficient” while “making cost savings” to its business operations. Our accelerated programme was delivered ten days ahead of schedule, which, importantly, enabled NIW to avail of Renewable Obligation Certificates. The design and procurement of the NIE Networks Control Building and NIW’s Substation commenced in early September 2017, before construction began in October 2017. Subsequently, engineering works on the 33-acre solar farm were initiated in mid-December 2017 and completed, within the agreed budget, on 12th March. 23, 936 solar panels, delivered from China, were installed on the steel structures of the solar farm and supported by 4,352 steel piles. As part of the project, two 15t 2,200 kVA Transformers, one 15tn 1,800 kVA Transformer, and a 33kV Containerised Substation were designed, built and installed. All underground cables were nominated and approved based on their efficiency and lowest possible voltage loss. Demonstrating the complexity, connection to the grid demanded a directional drilling programme, instead of “open cut”, under the Dunore River.

Outputs & Benefits

- / **Accelerated programme:** We completed the project ten days ahead of schedule and under the agreed budget
- / **Build quality:** We designed the building to meet the heating and ventilation requirements of the switchgear and panels, and designed cable trenches to achieve the minimum allowable cable bending radius under the switchgear
- / **Supply chain:** All suppliers for concrete, aggregate and building materials were local suppliers, and SMEs were used for plant hire, stock fencing and tree planting
- / **Environmental:** The site area had agricultural value, and, when reinstated, was estimated to retain 70% yield to allow for ongoing sheep grazing in conjunction with the operational site compared to pre-construction
- / **Health and Safety:** Zero RIDDORs



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