



# Critical Protection

## Case History

Haya Water, Al Ansab treatment plant

## Cummins helps expand a major treatment plant in Oman

### Where:

Muscat, Oman

### What:

Cummins generator sets: 3 x C2500 D5A, 2 x C3500 D5, plus attenuators, bulk fuel tanks, piping, ventilation system and Neutral Grounding Resistors

### Purpose:

Cummins selected to provide turnkey expertise for expansion of a Haya Water sewage treatment plant and pumping station

### Primary Choice Factors:

- Local distributor's project references
- Global presence and single source of supply for all items
- Strong technical submission on attractive commercial terms
- Met prime contractor's 'single-window system' requirements
- Cummins Project Design and Implementation (PD&I) team capabilities

Haya Water is the organisation responsible for the implementation and operation of sewage treatment facilities throughout the state of Oman. Amongst these is a major site at Al Ansab near the capital Muscat. An expansion of the site is underway that will approximately double capacity from 57,000 to 125,00 m<sup>3</sup>/day for the treatment plant and from 130,000 to 260,000 m<sup>3</sup>/day for the pumping station.

On completion, Al Ansab will be one of the largest facilities in the world to use the flat-sheet-membrane bioreactor process, which produces high-quality reclaimed water and minimises environmental footprint. It will be the biggest water treatment plant in Muscat, capable of producing more than 100,000 m<sup>3</sup> of high-purity reusable water per day, and it will provide Oman's capital with one third of its total irrigation requirements for landscaping and beautification up to the year 2025.



Remote radiators for the biological treatment plant



Two QSK95 units power the plant's high-capacity blowers

To cope with the expansion, Cummins distributor Universal Engineering Services LLC has delivered a 14.5 MVA emergency standby power solution based around five new generator sets – including the first in the country to be powered by the QSK95 Series engine. The Treated Effluent Substation has a C2500 D5A, 6.6 kV generator set. Two C3500 D5, 6.6 kV units serve the biological treatment plant, and the central pumping station is equipped with two C2500 D5A, 415 V units. Universal Engineering Services also supplied attenuators, bulk fuel tanks, piping, ventilation system and Neutral Grounding Resistors (NGRs).

The contract for the work had to be won against tough competition. Cummins came out top thanks to a wide range of factors, including relevant prior experience in Oman and a strong presence in Korea, home of main contractor Doosan Heavy Industries & Construction. One of the main contractor's fundamental requirements was the use of a "single-window system", an internationally recognised trade facilitation concept. Under a single-window system, everyone involved in an international project is required to file standardized information and documents at a single point, to streamline all of the project's import, export and transit-related regulatory requirements. Universal Engineering Services (UES) with the support of Cummins Project Design & Implementation (PD&I) team was able to meet this requirement better than the competition. The PD&I team provided expertise throughout the project on a number of issues: remote radiators for the generators, exhaust silencers, flexible ducting, battery charger selection and supply for the QSK95 units and neutral grounding panels for the medium voltage generators.

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Cummins took advantage of its global capabilities, reputation and footprint in order to deliver the winning solution. UES took the leading role by virtue of its local presence in Oman, its track record of similar projects in the country, and its demonstrated turnkey project capability. The Cummins Projects, Design and Implementation team provided technical support, and Cummins in the UK ensured good price support and assistance with deliveries.

Since AECOM was selected as design consultant in 2013, the Al Ansab expansion project has been a four year journey. Doosan Heavy Industries & Construction won their contract in June 2015 and in December 2015 they awarded the generator set order to Universal Engineering Services. Cummins was able to meet the aggressive project delivery timeline. All the products had to be delivered in approximately six months after approvals, to support the customers' deployment schedule for the Haya Water plant. The Cummins units were delivered to site, according to the committed schedule, in 2016. Global presence, single-source supply, ability to meet the delivery timeframe, and a single-window capability all proved crucial in placing responsibility for the project with Cummins.

For more information about critical protection/standby power systems or other energy solutions, contact your local Cummins distributor or visit [power.cummins.com](http://power.cummins.com)



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Bulletin 5410758 (8/17)