

Dubai Metro - District Cooling, UAE

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The Dubai Metro is the world's first district-cooled mass transit system, according to Stanley Consultants.

A distribution network provides centralised cooling via pre-insulated, buried steel piping to all Dubai Metro stations. Five district cooling plants were built specifically for the Dubai Metro, with the following installed capacities:

- Al Rigga 10,000 TR
- Al Barsha 7,500 TR
- Jumeirah Island 7,000 TR
- Jebel Ali Industrial 4,400 TR
- Al Rashidiya 7,500 TR



CASE STORY



A total of 52 km of piping was needed for the district cooling network.

DESMI pumps were installed for air cooling purposes in Dubai's metro stations.

DESMI model NSL125-330 with a capacity of 162 m³/h at 35 mLC were chosen for the installation. The pumps are mounted with a 30 kW motor.

Stanley consultants, who designed the project, emphasized that district cooling was particularly suited to the Dubai Metro.

Not only did it reduce the electromechanical areas inside the stations, but it also reduced the total power connected and consumed by between 30% to 50%. This, in turn, reduced the total carbon footprint of the project.

It also reduced the noise and vibration, as opposed to the alternate stand-alone solution of having roof-top air-cooled chillers and pumps.

Not only is District Cooling extremely cost efficient, the associated environmental advantages are significant. 50% energy saving means considerable reductions in power generation and the production of CO₂, the major cause of global warming.

District Cooling uses environmentally friendly refrigerants in a contained and controlled environment which, combined with rigorous health and safety standards, means less potential damage to the Ozone layer.