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Sydney Town Hall powers up with trigeneration

A low-carbon trigeneration plant is now powering, heating and cooling Sydney Town Hall and neighbouring Town Hall House, where 1,500 City of Sydney employees work.

Trigeneration is a low-carbon form of energy production, producing less than half the carbon emissions of the coal-fired plants that generate around 80 per cent of Sydney's electricity.

The plant has been gradually phased in over the last three months and is now fully supplying the City's civic buildings on working weekdays from 7am to 10pm.

Sydney Lord Mayor Clover Moore said the 1,400 kilowatt system was expected to cut carbon emissions by more than 40,000 tonnes over its 30-year lifetime, equivalent to 1,500 small cars.

"Installing trigeneration power at Town Hall is already helping us reduce our reliance on coal-generated energy hauled in from the Hunter Valley and allows us to power, heat and cool our buildings from a clean, local supply," the Lord Mayor said.

"Decentralised plants like this one offer the grid more reliability."

"As well as meeting the weekday energy needs of Sydney Town Hall and Town Hall House, the rooftop generation plant is ready to export significant amounts of electricity to the grid. This could help manage peak power demands and defer costly investment in electricity network upgrades."

"Trigeneration is part of our practical portfolio of sustainability programs to cut carbon emissions by 70 per cent based on 2006 levels, along with building retrofits for energy efficiency, installing solar panels on the buildings we own and offsetting carbon emissions."

"We're leading by example. The City is Australia's first carbon-neutral government and we've already reduced emissions in our own buildings and operations by 27 per cent on 2006 levels."

Trigeneration already operates in many properties across Sydney including commercial buildings like Qantas Flight Services, Google, 1 Bligh Street, t 133 Castlereagh Street, 20 Bond Street; leading community clubs like Rooty Hill RSL and Castle Hill RSL; and multiple local governments like Hornsby, Leichhardt, North Sydney, Willoughby and Wagga Wagga Councils.

The City of Sydney received a grant of \$3.05 million from the Federal Government's Community Energy Efficiency Program for the trigeneration project.

The system was designed and installed by leading national building services contractor AE Smith.

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The plant uses seven 200kW capstone micro-turbines that can each turn down to a tenth of their total power output, meaning they can follow the electrical demand in the building during both summer and winter months.

Trigeneration is an extremely efficient decentralised energy technology where electricity is made near where it is used, avoiding the need to bring electricity over long distances. It replaces coal-fired electricity and reduces emissions from connected buildings.

Producing energy locally helps avoid expensive upgrades to the NSW electricity grid of poles and wires which have pushed up power prices. Consumers are forced to pay for upgrades to an aging and inefficient network that moves coal-fired electricity from the Hunter Valley to Sydney.

The first public electricity supply in the world was the cogeneration system, implemented by Edison in 1882 to supply electricity and steam to Manhattan. This was later converted to a trigeneration system and is now the eighth largest decentralised energy network in the world.

Many European cities have been retrofitted with decentralised energy networks including Berlin, Copenhagen, Stockholm, Helsinki, Vienna, Hamburg, Gothenburg, Paris, Moscow, St Petersburg, Turin, Barcelona and London.

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