

Facts

Green

Infrastructure



Trigeneration: The International Perspective

Trigeneration is a relatively new process in Australia, but the technology has been around for a very long time.

It comprises an engine which runs on natural or renewable gases and produces low-carbon electricity, heating and air-conditioning. Our trigeneration network will connect up clusters of surrounding buildings - an Australian first.

The technology has been in existence since the 1880s when Thomas Edison first installed it in 1882 in New York. This was substantially increased in size throughout Manhattan and is still in operation today.

Growing pressure on governments to reduce greenhouse emissions and avoid dangerous climate change has given trigeneration a new lease of life. Globally there is now a growing demand for these highly efficient energy systems that run on natural or renewable gases.

Australia is falling behind its international peers such as in Europe, North Asia and the United States. In 2006, Australia ranked 34th out of 40 countries surveyed for decentralised energy generation. Here, just five per cent of total generation comes from decentralised sources (mostly in large industrial applications) compared to 20 per cent in Germany, 40 per cent in the Netherlands and 55 per cent in Denmark. In Asia, Japan has 16.7 per cent, China 11 per cent and India 12 per cent.

In the European Union, cogeneration (which produces electricity and heating) is estimated to have delivered a 15 per cent reduction in greenhouse gas emissions over the whole EU between 1990 and 2005.

In the Borough of Woking near London, the council achieved an 80 per cent reduction in carbon emissions using cogeneration, trigeneration, energy efficiency and renewable energy over 14 years. The man who achieved this landmark, Allan Jones, has been working for the City of Sydney since November 2009 to implement our plan to reduce greenhouse gas emissions by 70 per cent.

Allan also led the Greater London Authority's efforts to reduce greenhouse gas emissions by 60 per cent by 2025. By 2008 London had installed or given planning consent to more than 600 megawatts of co-generation and tri-generation systems, halfway towards its 25 per cent target for decentralised power generation by 2025.

The emission reduction provided by cogeneration and trigeneration is a key first step to a low carbon economy.

Other Australian cities could halve their greenhouse gas emissions over the next 20 years if they adopted plans similar to Sydney's Sustainable Sydney 2030 program, according to a study by consultants Kinesis. Such strategies have the potential to slash Australia's emissions by 540 million tonnes between 2010 and 2030, almost one quarter of the way towards a 25 per cent national emissions reduction target.

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