



## Generating Hydropower from Water Supply Systems



### Sustainable Development Goals Addressed



<b>Organization, Institution or Company</b>
Melbourne Water Public Company
<b>Location of project site, Country</b>
City of Melbourne, Australia
<b>Brief narrative objective/description of project/activity/initiative</b>
<p>Melbourne Water is a statutory authority owned by the Government of the State of Victoria, Australia. Melbourne Water is responsible for all water supply and wastewater treatment systems in the City of Melbourne and its vicinity. The city's water supply originates from the Yarra River catchment, an area of more than 4,000 km<sup>2</sup> located to the North and East of Melbourne.</p> <p>Melbourne Water has shown a strong commitment to hydropower generation as part of its overall commitment to sustainability and renewable energy. Water is transferred from major storage reservoirs at higher elevations to smaller service reservoirs at lower elevations, predominantly via gravity. By installing small hydroelectric power stations between the various water reservoirs, Melbourne Water is able to generate renewable electricity, harnessing a natural, sustainable and reliable source of energy.</p> <p>The first hydroelectric power stations were installed at Thomson Dam (7.4 MW) in 1989 (later upgraded in 2012) and at Cardinia Reservoir (3.5 MW) in 1984. In 2004, Melbourne Water reviewed its network and identified initially six additional sites. Between 2008 and 2010, these six additional mini hydroelectric power stations were constructed throughout the water supply network. During 2016-2017, five more mini hydropower sites were added to the system. The most recently added facilities are located at Dandenong, Wantirna, Mt Waverley, Cardinia Creek, and Boronia. All new plants were delivered in pre-assembled, self-contained units, offering simple, weather resistant power delivery solutions which were brought online quickly. Once the water has been diverted through the power plant it flows back into the water supply system, which feeds the residential water supply network across Melbourne.</p>
<b>Economic, environmental and climate benefits/challenges/lessons learned</b>
<p>Today, Melbourne Water is able to generate more than 69,500 MWh of power per year via hydroelectric generation, which is enough to supply some 14,100 homes. The renewable power generation avoids some 75,800 tonnes of CO<sub>2</sub> emissions, equivalent to taking more than 29,200 cars off the road.</p>

The operation of the eleven mini-hydro plants allows Melbourne Water supply operations to contribute more electricity to the grid than is needed for the operation of the water supply facilities.

All mini hydro plants are fully remote-controlled, operational from offsite, and seamlessly integrated into Melbourne Water's supply system to ensure uninterrupted operation. Melbourne Water's mini hydro plants combine economic and ecological efficiency to produce renewable electricity from sustainable sources.

**Additional information: website addresses and contacts**

Melbourne Water Media Contact: <https://www.melbournewater.com.au/media/2366>

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*Photo Thomson Water Supply Reservoir by Melbourne Water*