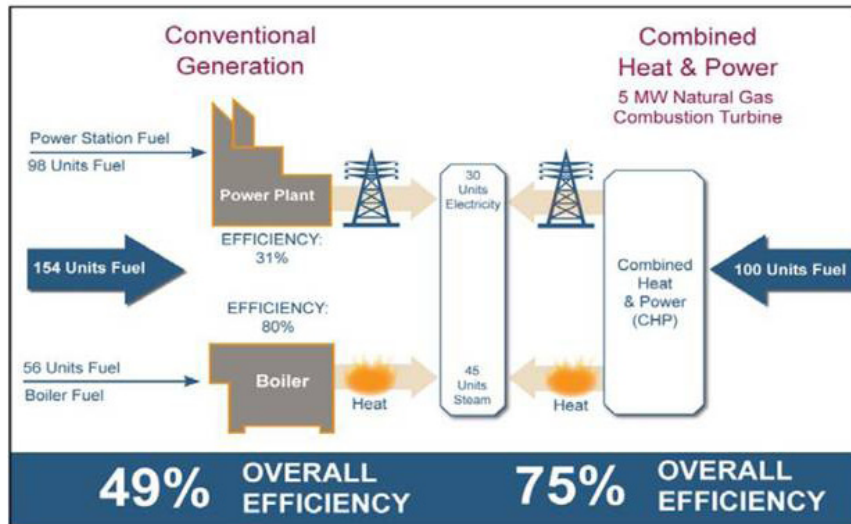


# Cogeneration



Cogeneration has an efficiency of about 70% – 90% compared to 25% – 40% for conventional electricity generation. This can greatly assist in reducing greenhouse gases emitted from electricity production.

## What is the problem?

Have you ever noticed the large cooling towers spewing out steam from power plants? That steam is wasted energy and accounts for two thirds of the fuel being burnt at the plant.

The vast majority of Victoria's electricity supply currently comes from large, centralised brown coal power plants. This form of electricity generation only achieves around 30% efficiency. 70% of the energy input is lost either through waste heat produced during the process or from losses in the transmission of electricity over the large distances to the final point of use. This is an extremely inefficient way to produce electricity.

Further, significant volumes of scarce water are consumed – up to one third of Melbourne's entire annual water consumption.

## What is cogeneration?

Cogeneration involves simultaneous production of heat and electricity. Fuel is burnt in an engine which drives a generator to produce electricity. The waste heat from the engine is then used for space, water or process heating rather than being lost as steam through cooling towers. The electricity is used in dwellings, commercial buildings, or exported to the national electricity grid.

## Cogeneration and distributed generation

Cogeneration lends itself to being situated close to where the electricity and heat demand exists, capturing and using the waste heat. As a result, cogeneration is a form of 'distributed electricity generation', involving many small generation sources distributed within the electricity grid, as opposed to fewer large, centralised power plants.

## What are the benefits?

The greatest advantage with cogeneration is the increase in efficiency compared to producing heat and electricity individually. Additional efficiency is gained from reducing electricity transmission losses. A natural gas fired cogeneration plant can be up to 90% efficient, as opposed to 30% efficiency for our current power plants in the Latrobe Valley.

With cogeneration, electricity supply and demand are linked better, peak load demand can be reduced and security of supply is enhanced due to an increased number of diverse electricity generation sources.

## For further information on cogeneration

> More information about cogeneration can be found on [www.seav.sustainability.vic.gov.au/manufacturing/sustainable\\_manufacturing/resource.asp?action=show\\_resource&resourcetype=2&resourceid=23](http://www.seav.sustainability.vic.gov.au/manufacturing/sustainable_manufacturing/resource.asp?action=show_resource&resourcetype=2&resourceid=23)