

Bret Jablonski

EGEE 497

Dispatch

3/31/17

Dispatch Day 1 – First Session

The trip started the first day with the class rendezvous Monday at noon at the Auckland airport. After packing into the class vehicles, we started the drive south for our first stop to the Huntly Power Station.



The Huntly power station is the largest thermal power plant in New Zealand. Based on the banks of the Waikato River, Huntly is owned and operated by Genesis Energy, one of the larger energy companies in New Zealand. When running at full capacity, the plant is able to supply 31% of New Zealand's electricity needs. The plant consists of four coal and two gas fired turbines. Auckland is the main market for electricity produced at Huntly.

The four coal turbines can produce 250 MW each at max production. The turbines are designed to run a mix of both coal and gas. When in use, the turbines usually run on an optimal mix of the two fuels, depending on prices and what is currently available. The plant was expanded in 2004 with the addition of a 50 MW gas turbine. The plant expanded again in 2007

with the addition of a combined cycle gas turbine, adding another 403 MW of production. These additions brought the total max capacity of the plant to 1453 MW.

For the coal used in the plant, half of the coal burned is imported from Indonesia, with the remaining amount coming from New Zealand mines including the nearby Rotowaro mine which we briefly visited. The natural gas burned at the plant is brought in from the gas fields of the Taranaki region of New Zealand.



Huntly emits nearly half of the carbon dioxide produced in New Zealand from electricity production. Because of this and New Zealand's initiatives to cut carbon emissions, Huntly is in the process of phasing out its many turbines. As of now the coal/gas turbines are scheduled to be shut down by 2022 with the gas turbines running into the future. However, even at the present day the coal turbines are only used in a backup capacity if another energy source or part of the grid fails. This leaves the gas turbines as the only turbines that are regularly used for electricity production.