

Controlling toxic air pollution from power stations

Coal-fired power stations emit a range of toxic substances that contribute to illness and premature death. They are Australia's largest source of fine particle pollution, sulfur dioxide (SO₂) and oxides of nitrogen (NO_x).¹ These toxic pollutants are hazardous to human health and are estimated to cost our health system \$2.6 billion per year.²

Air pollution from power stations can travel long distances. The power stations on the Central Coast and in the Hunter Valley are responsible for 54% of Sydney's NO_x emissions, 200 kilometres away, and 87% of Sydney's SO₂ pollution.

Sulfur dioxide and oxides of nitrogen contribute to significant health effects, especially for children, pregnant women and unborn children, elderly people and people with chronic disease. Sulfur dioxide increases the rate and severity of asthma. In communities near power stations, SO₂ can reduce infant birth weight and increase cardiovascular and respiratory mortality and hospital admissions. Oxides of nitrogen worsen allergies and asthma and reduce lung function, even at low concentrations.

Emission Control Technologies: What is Best Available Technology?

By installing best available emission control technologies (ECTs), power generators can reduce NO_x and SO₂ emissions by 90% or more.

Flue Gas Desulfurisation (FGD) removes fly ash and sulfur dioxide from power station exhaust gas. It can involve wet or dry scrubbing using an alkaline sorbent or hydrated lime. Wet scrubbing can reduce SO₂ emissions by more than 90%. FGD has been installed at power stations since the 1930s and is mandatory for power stations in Europe, the United States and Japan. Installing FGD to the three Latrobe Valley power stations could reduce SO₂ pollution in the Valley by 90 million kilograms each year.

Selective Catalytic Reduction (SCR) removes oxides of nitrogen (NO_x) from power station stacks by up to 85%. The process involves injecting ammonia into flue gas along with a catalyst. The process is referred to as 'selective' because it does not cause SO₂ or ammonia to oxidise. The chemical reaction produces nitrogen and water. Recent pollution control reports prepared by the owner-operators of Vales Point and Liddell power stations confirmed SCR as international best practice for post-combustion NO_x control.

None of Australia's coal-fired power stations are fitted with either Flue Gas Desulfurisation or Selective Catalytic Reduction. These pollution controls are not currently required by our environmental regulators.

Costs and benefits

Installing SCR at the Vales Point power station, a medium sized power station, would cost approximately \$300 million, according to a report prepared for the plant's owners. This represents a tiny fraction of the cost of generation and much less than even one year's profit. The Vales Point owners bought the power station for just one million dollars and it is now valued at more than \$700M. AGL who own the Bayswater and Liddell power stations recently reported a threefold increase in annual profit to \$1.6B and can definitely afford to install these pollution controls.

In reality, the benefit of installing these two emission control technologies far outweighs the cost. The annual health cost of coal-fired power stations across Australia has been estimated at \$2.6 billion each year, an estimate that is based on thousands of asthma attacks and hospitalisation, reduced quality of life and, tragically, lost years of life. Dr Richard Broome's research for the NSW Government suggests that eliminating NOx and SO₂ pollution from the five NSW power stations would prevent the loss of 50,000 years of life in Sydney each year.

Who is responsible?

In Australia, state governments are responsible for pollution control. Environmental agencies and Environmental Protection Agencies (EPAs) in each state licence power stations to pollute, setting limits for stack emissions and requiring generators to monitor and report pollution concentrations.

The licences issued to Australia's fleet of coal-fired power stations could be much stricter than they are. Many allow emissions many times higher than the limit set by the United States EPA. Coal-fired power stations in NSW are permitted to emit NOx concentrations up to 1500 milligrams per cubic metre, 15 times higher than the United States EPA limit. In Queensland, the Stanwell power station is licenced to emit 1300mg/m³ and the Gladstone power station can release NOx at concentrations up to 2800mg/m³.

Ultimately, power station owners and operators are responsible for pollution control and for the health impacts of their toxic emissions. Polluters must be held responsible.

Take action!

Nothing changes unless communities speak up. We can make a difference by directly contacting power generators and the state governments that licence them, demanding best practice pollution controls. Power station licences are being reviewed in Victoria's Latrobe Valley and in New South Wales, so now is the right time to take action.

Contact your state regulator...

NSW EPA 131 555 or poeo.licensing@epa.nsw.gov.au

Victorian EPA 1300 372 842

Or the power stations directly...

AGL (Bayswater, Liddell, Loy Yang A) 1800 039 600 or AGLCommunity@agl.com.au

Alinta (Loy Yang B) 133 702 or customer.service@mail1.alintaenergy.com.au

Delta Electricity (Vales Point power station) 1800 115 277

EnergyAustralia (Mt Piper, Yallourn) 133 466

OriginEnergy (Eraring) 02 4973 0700

Rio Tinto / NRG (Gladstone) (07) 4976 5211

Stanwell Corporation (Stanwell, Tarong, Tarong North) Brisbane (07) 3228 4333 / Stanwell power station: (07) 4930 3444 / Tarong power stations: (07) 4130 9444

Or contact EJA...

EJA supports community action for pollution control by sharing a free monthly update with more than 5,000 supporters and allies. Sign up for Clean Air Updates at EJA's website: <http://www.envirojustice.org.au>

For further information on NSW power stations, contact Dr. James Whelan: 0431 150 928

For further information on Victorian power stations, contact Bronya Lipski: (03) 8341 3100

¹ National Pollutant Inventory (2017) Department of Environment and Energy, Australian Government.

² Tom Biegler, 'The Hidden Costs of Electricity: Externalities of Power Generation in Australia' (Report, Australian Academy of Technological Sciences and Engineering, March 2009).