



Nature Conservation Council

The voice for nature in NSW

Committee Secretary
Senate Standing Committees on Environment and Communications
Australian Parliament House
Canberra ACT 2600

Via: ec.sen@aph.gov.au

Thursday, 10th of November, 2016

Submission to Inquiry on Retirement of Coal Fired Power Stations

Dear committee,

The Nature Conservation Council of New South Wales (**NCC**) is the state's peak environment organisation. We represent over 150 member organisations across NSW. Together we are dedicated to protecting and conserving the wildlife, landscapes and natural resources of NSW.

NCC welcomes the opportunity to make a submission to this important and timely inquiry, and would welcome the opportunity to give evidence in a committee hearing. We also strongly encourage the committee to hold a hearing in the Hunter Valley/Central Coast region of NSW so that the committee can hear testimony from affected communities close to four operating coal fired power stations.

In our submission we call for a rapid, orderly retirement of coal fired power stations by 2030 to avoid the worst impacts of climate change, and replacement with renewable energy.

We also draw the committee's attention to the need to ensure that the burden of this transition isn't carried by the workers and communities affected by closures, but that they get the support that they deserve. We recommend the establishment and funding of transition processes led by workers and community to support those affected to harness new sources of regional development and employment.

While an ad-hoc energy transition is already underway, we suggest that planning is required in order to minimise regional dislocation, maintain reliability of energy supply across the national electricity market, minimise pollution, and avoid dangerous climate change.

If you seek any further information on the issues raised in this submission please do not hesitate to contact me on (02) 9516 1488 or ncc@nature.org.au.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Kate Smolski', written in a cursive style.

Kate Smolski
Chief Executive Officer

NCC SUBMISSION ON THE RETIREMENT OF COAL FIRED POWER STATIONS

The need for a plan to retire coal-fired power stations

In order to avoid the worst impacts of dangerous climate change, the world must rapidly transform our energy systems to stop burning fossil fuels.

Increased CO₂ levels in the Earth's atmosphere are causing warming of the atmosphere and oceans, the breakup of ice sheets, glacial retreat, sea level rise, and ocean acidification. Australia is experiencing the direct impacts of climate change with more severe and frequent events such as droughts, bushfires, heat-waves, floods and cyclones.

A rapid transformation of our energy system is required if we are to avoid the worst risks and impacts that climate change poses to human and natural systems. Warming of over 1.5°C is incompatible with the survival of entire low-lying pacific island nations such as Kiribati and Tuvalu, as well as coral reefs in Australia and around the world.

Australia is one of over 190 countries who have committed to the Paris Agreement goal of limiting warming to "well below 2°C" above pre-industrial levels, and to pursue efforts to limit temperature rises to 1.5°C. Doing our share to meet this commitment and avoid dangerous global warming means planning a phase out of coal-fired power stations across Australia, including the aging and emissions-intensive NSW fleet.

International Energy Agency modelling of the 2-degrees scenario demonstrates that coal-fired power plants in OECD countries must be almost entirely phased out by 2035¹.

In order to pursue efforts to limit temperature rises to 1.5°C, as we agreed in Paris, the timeline must be even shorter. NCC therefore calls upon the Committee to recommend a phase-out of NSW coal-fired power plants and a complete transition to renewable energy by 2030, i.e. within 14 years.

Fortunately, people in Australia want renewable energy. NSW Government-commissioned polling released in April 2016 shows 91% of NSW residents support renewables and 83% say NSW should be generating more electricity from renewable sources². Furthermore, the states and countries who plan and cater for this transition will benefit the most from the economic opportunities presented by the global transition to renewable energy.

There are many mechanisms which could be implemented to achieve the orderly retirement of coal plants such as reverse-auctions amongst generators, generator age limits or emissions intensity limits.

¹ International Energy Agency, Energy, Climate Change and Environment 2016 Insights report, p30, <http://www.iea.org/publications/freepublications/publication/ECCE2016.pdf>

² Newpoll, NSW Office of Environment and Heritage, April 2016, <http://www.environment.nsw.gov.au/communities/community-attitudes.htm>

The importance of a just transition

Governments must ensure the rapid transition to renewable energy is a just transition so that affected workers and communities get the help they deserve, rather than having to shoulder the costs of transition. Coal affected communities are already suffering disproportionate impacts of pollution as well as economic dislocation as coal power stations and mines reduce production and close. Three coal fired power stations have already closed in NSW in the recent past. Economic adjustments take time, and so governments must immediately take an active role in managing the transition. We recommend the establishment and funding of transition processes led by workers and community to support those affected to harness new sources of regional development and employment.

Early research work on the impacts of the transition from coal-fired power to renewable energy on workers and communities in the Hunter/Central Coast region estimated a potential net-gain of over 3900 secure jobs in the region if the transition was well managed, despite 1300 direct job losses from coal-fired power station closure³. Since this Greenpeace-commissioned report was written in 2008, the Munmorah, Wallerawang and Redbank coal-fired power stations in NSW have already closed, with little planning or support for the affected workers, small businesses and local communities.

As the transition is already underway, responsible governments must plan a rapid transformation of our energy system that ensures reliability and affordability of energy supply, and minimises disruption for affected workers and communities.

Coal-fired power stations in NSW

New South Wales has a fleet of five black-coal power stations which supply 85% of NSW electricity consumption and are responsible for almost 40% of the state's greenhouse pollution - 46 million tonnes⁴. Renewable energy makes up only 6% of the NSW generation mix - the lowest of all Australian states. Coal-fired electricity generators are well-aware that their power stations must close for Australia to meet its Paris agreement obligations. However, there is currently no NSW Government plan to support or require generators to close in a timely manner.

NSW coal fired power stations are all sub-critical plants and the average age of the fleet is over 34 years, with Liddell being one of the oldest power stations in the national electricity market at 44 years. NSW is estimated to have 3000MW excess electricity generating capacity, due to declining

³ University of Newcastle, Centre of Full Employment and Equity, A just transition to a renewable energy economy in the hunter region, Australia, June 2008, available at:

http://www.resourcesandenergy.nsw.gov.au/energy-consumers/solar/sustain-renew-fit-subs/sustain_renew_fit_subs_greenpeace_australia_pacific_attach_a.pdf

⁴ Clean Energy Regulator, Electricity sector emissions and generation data 2014-15, accessed 8/11/2016, available at:

<http://www.cleanenergyregulator.gov.au/NGER/National%20greenhouse%20and%20energy%20reporting%20data/electricity-sector-emissions-and-generation-data/electricity-sector-emissions-and-generation-data-2014-15>

industrial and residential demand and increasing renewable energy generation⁵. With NSW plants operating at low capacities and having high fixed costs due to their age, they are exposed to any further reduction in wholesale prices or demand, and at risk of closing in an ad-hoc, sudden manner if the phase-out is not managed. With old plants and excess capacity, NSW needs a plan for the future of our electricity mix.

Human health

Coal-fired power stations also have a significant impact on the health of neighbouring communities and the population more broadly. The Climate and Health Alliance estimates the annual costs of associated health damages from coal-fired power station air-pollution in the Hunter Valley and Central Coast at around \$600 million per annum⁶.

The health impacts of air pollution include increased asthma and respiratory disease (the Hunter Valley has the highest rates of emergency department attendance and hospital admission for asthma and respiratory disease in NSW⁷), impaired lung growth, impairment of brain development in babies and small children, low birth weight and adverse birth outcomes, heart attack and stroke (the Hunter Valley has the highest rates in NSW of hospital admission and death from cardiovascular disease), upper respiratory tract irritation and infection, and worsening of existing health problems in people with chronic disease. People most susceptible to the impacts of air pollution are children, pregnant women, elderly people and people with chronic disease.

Coal-fired power plants produce a range of toxic pollutants that harm people and the environment.

Fine particles of coal dust - PM10 and PM2.5 - are made up of all the air pollutants associated with coal combustion and are drawn deep into the lungs and bloodstream, causing lung cancer, heart attack, stroke, and a range of respiratory diseases.

PM2.5 travels long distances, meaning it kills and harms people in communities near to the power station and also impacts the millions of people living in cities hundreds of kilometres away. Research by Australian Nuclear Science and Technology Organisation (ANSTO) found that up to half of sulphate pollution in Sydney is from coal-fired power stations in NSW, and 18% of the total PM2.5 load breathed by Sydney residents⁸.

Coal plants are also significant emitters of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) which cause respiratory and cardiovascular disease. A range of other toxic pollutants are emitted from coal plants such as mercury which harms communities and the environment.

⁵ Institute for Energy Economics and Financial Analysis, Sub-critical Australia, 2016, available at: http://ieefa.org/wp-content/uploads/2016/05/Sub-Critical-Australia-Risks-From-Market-Imbalance-in-the-Australian-National-Electricity_May-2016.pdf

⁶ Climate and Health Alliance, Coal and Health in the Hunter, 2015, p32, available at: http://d3n8a8pro7vnm.cloudfront.net/caha/legacy_url/53/Climate-and-Health-Alliance_Report_Layout_PRINTv2.pdf?1439938112

⁷ NSW Department of Health, Respiratory and cardiovascular diseases and cancer among residents in the Hunter New England Area Health Service, 2010, available at: <http://www.health.nsw.gov.au/environment/Publications/HNE-Respi-Cardio-Disease.pdf>

⁸ ANSTO, Revealing the sources of Sydney's air pollution, 2014, available at: <http://www.ansto.gov.au/AboutANSTO/MediaCentre/News/ACS049674>

Pollution from coal plants is poorly monitored and regulated and maximum allowed levels are not set low enough to protect human health.

NCC recommends that an independent assessment of the health impacts of each of Australia's coal-fired power stations is conducted so that the health impacts on communities can be understood and addressed, and can inform retirement planning processes.

A reliable, affordable transition

There are significant opportunities in the energy transition, including over 5000MW of proposed renewable energy projects identified by the Australian Energy Market Operator in NSW alone⁹. We recommend that federal and state governments establish mechanisms to drive investment in dispatchable renewable energy generation such as solar thermal with storage and off-stream pumped-hydro in order to boost competition in the energy market and grid reliability.

We also suggest that targeting renewable energy developments in coal-affected regions will help to minimise dislocation in these communities. Liddell power station, for example, already has a trial solar-thermal plant.

Matters relating to individual coal fired power stations in NSW

Liddell

Liddell power station is located in Muswellbrook in the Hunter Valley and is slated for closure in 2022. Liddell's main customer - the Tomago aluminium smelter, could close as early as 2016/17, causing the power station to close much earlier. Clearly a plan for Liddell's closure needs to be completed as soon as possible, including ensuring that rehabilitation of the toxic fly ash dam is well-managed. A solar-thermal plant already exists at Liddell. Scaling up this plant, along with timely site rehabilitation, could be an important part of creating jobs in the region.

Bayswater

Bayswater power station is also located in Muswellbrook in the Hunter Valley and is slated for closure in 2035 when the plant will be 50 years old. Bayswater has the highest levels by far of sulfur dioxide and nitrous oxide emissions of any Australian coal plant, which have serious impacts on human health as far away as Sydney. AGL have also had three penalty notices issued in the last year for polluting water at the Bayswater power station.

Ering

The Eraring power station is the largest electricity generator in NSW at 2880MW and is run by Origin Energy on Lake Macquarie, a densely populated region with over 200,000 residents in the Lake Macquarie local government area. The Eraring power station is the biggest point source of fine particle emissions in NSW.

⁹ Australian Energy Market Operator, National Electricity Market Electricity Statement of Opportunities, August 2016, available at: <https://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Planning-and-forecasting/NEM-Electricity-Statement-of-Opportunities>

Vales Point

The Vales Point power station was privatised in 2015, bought by Sunset Power for \$1 million, less than the average price for a house in Sydney. It is slated to close in 2022 if, according to the owners, coal-fired power generation continues to be required in NSW, although the low purchase price indicates that the owners anticipate that it could become unviable at any time.

Mount Piper

The Mount Piper coal-fired power station near Lithgow has been owned by Energy Australia since 2013 and has a planned closure date of 2050. The plant is a major emitter of pollutants, including over 36 million kilograms per year of sulfur dioxide and 24 million kilograms per year of nitrogen oxides (National Pollutant Inventory, 2014-15), both of which cause respiratory and cardiovascular disease.

Summary of Recommendations

It is essential we plan now and resource a just transition for coal communities in the Hunter Valley, Central Coast and Lithgow regions of NSW to contribute to the global agreement to limit warming to 1.5°C. To this end we call on the Committee to recommend:

1. A timeline for phasing out all coal-fired power stations by 2030 at the latest.
2. Actively supporting and taking up renewable energy growth opportunities in these regions, especially projects that improve grid reliability such as pumped-hydro and solar-thermal projects.
3. A independent health impact assessment of each coal-fired power station.
4. The true rehabilitation costs be assessed and financial assurances are increased as necessary to ensure comprehensive rehabilitation.
5. Transition planning bodies are established and there are resources support workers to transition to alternative secure, meaningful, well-paid employment, and for communities to harness new opportunities for regional growth and employment.