CLIMATE COUNCIL

CLEAN COAL: FACTSHEET

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Clean Coal: Factsheet

COAL IS ALWAYS POLLUTING

Building new fossil fuel power plants is expensive, polluting and damaging for community health.

FACT CHECK ON PRIME MINISTER

Our energy system needs overhauling.

Australia's energy system is ageing, inefficient and polluting. It is not coping with escalating extreme weather, like heatwaves and storms. It is not adequately adapted to 21st century, smart technology.

In addressing this major issue Prime Minister Malcolm Turnbull says our new energy system must achieve three objectives:

1. Be clean (low emissions)
2. Affordable
3. Reliable

THE PROBLEM

Coal power doesn't meet any of these criteria. Yet the Federal Government is misleading the public by promoting "clean coal" as the way forward.

HERE'S WHY

1. There is no such thing as "clean" coal.

When dug up and burned, coal pollutes the environment and damages our health. Burning coal for electricity emits toxic and carcinogenic substances into our air, water and land, severely impacting on the health of miners, workers and communities.

The Australian Academy of Technological Sciences and Engineering estimated coal's health impacts cost taxpayers $2.6 billion every year.

More efficient coal plants labelled "ultra supercritical" (what the Federal Government calls "clean coal") emit significant greenhouse gases.

A new high-efficiency coal plant run on black coal would produce about 80% of the emissions of an equivalent old plant (Figure 1), while renewables (eg. wind and solar) emit zero emissions.

So-called "clean coal" does not help Australia meet its obligations to reduce its emissions 26-28% by 2030 below 2005 levels.

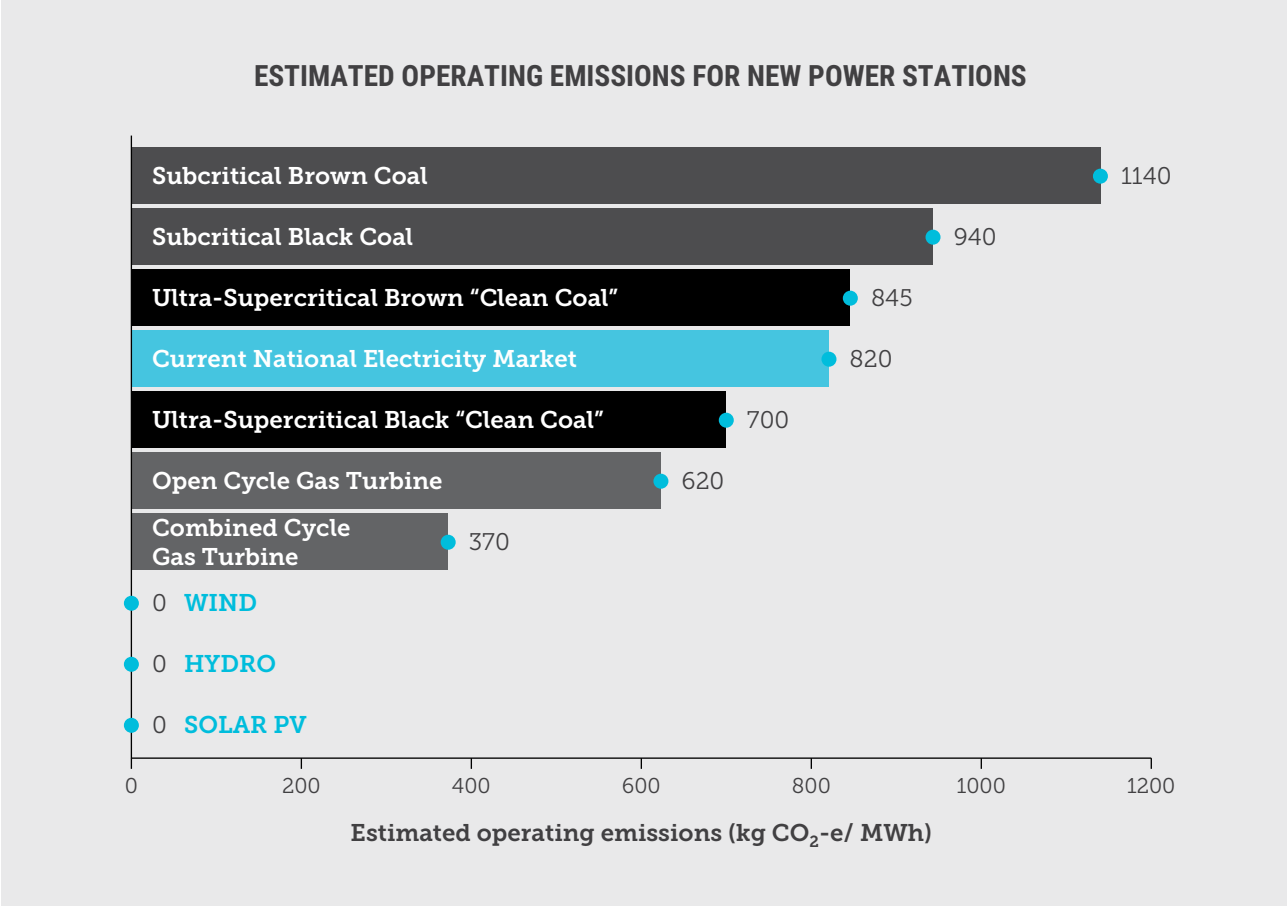

Figure 1: Estimated operating emissions for new power stations. **Sources:** Commonwealth of Australia 2016; The Climate Institute 2017.

This begs the question:

Is the Federal Government serious about meeting its Paris Agreement commitments?

2. Secure power requires smart solutions.

One of the largest long-term risks to energy security is escalating extreme weather, driven by climate change. We have seen the impact of extreme weather on power systems in the last six months in Australia. In September 2016, an extreme storm knocked down 23 transmission towers in South Australia causing a blackout. New South Wales and Queensland have experienced record high electricity demand during extreme heatwaves in January and February 2017.

Infrastructure relying on long distances and single massive sources of power, like a coal power plant with a long grid, is more vulnerable to extreme weather than a distributed grid with a number of sources of power. Cities that have experienced severe damage to their electricity infrastructure from extreme weather, like New York, have diversified the sources and location of power generation. Modern renewable energy means that power can be generated and stored where it is needed. This can reduce risks for critical infrastructure of grid failure.

The Australian grid has been built for coal fired generation, it must be modernised as new power sources come online. Massive coal fire generation will not be the future. It is simply too expensive, too risky an investment (Energy Council of Australia 2017), and too polluting.

New coal is no more secure than other power plants - these large generators are vulnerable to fires (The Australian 2014), floods (The Age 2012), water supply concerns (RenewEconomy 2012; ABC 2016), and mine subsidence (State Government Victoria 2014).

Power security can be improved by, for example:

1. Greater interconnection.
2. Diverse renewable technologies which provide continuous power (like hydro and solar thermal).
3. More household-level battery storage and large-scale energy storage.
4. Improved energy efficiency, demand management and a smarter, more flexible grid.

3. New coal is more expensive.

Building new coal plants is far from the cheapest option for replacing Australia's ageing, inefficient coal fleet.

New wind and solar plants both in Australia and overseas are beating new coal, gas and nuclear plants hands down on price. **AGL's Silverton Wind Farm will deliver power to the grid at a price of $65 per MWh compared to new coal potentially costing as much as $160.**

Recent analysis (eg. Jotzo 2017 and Molyneaux 2017), estimate that ultra-supercritical coal plants are expected to generate electricity at A$80 per megawatt-hour, according to the Australian Power Generation Technology Report, while others (e.g. Bloomberg New Energy Finance) estimates that electricity prices from new coal power stations could rise to A$160 per megawatt hour. This is nearly three times the wholesale cost of electricity recorded last year.

These costs eventually get passed on to us, through electricity bills, which rules out the Federal Government's proposal of "clean coal" as affordable.

By comparison, wind farms now get built at an average cost of A$75 per megawatt-hour, and solar parks at around A$110. Both are expected to come down to perhaps A$50 by 2025. New coal plants take many years to prepare and build, so 2025 is the relevant comparison.

New coal power stations are too risky for private investors and too expensive for energy users. The Climate Institute (2017) calculated that new coal plant would only get built with a government-guaranteed subsidy of around $27-44 billion, because:

- New coal stations will need electricity prices up to four times higher than today to earn sufficient revenue;
- They are likely to be obsolete by the time they are built, typically in seven to ten years;
- The power plants under discussion aren't "clean" - without even more expensive carbon capture and storage, they have higher emissions than the dirtiest gas power plants;
- New coal is incompatible with Australia's climate commitments, which require no conventional coal in the electricity mix by 2035.

There are also short-term issues, such as the closure of the Hazlewood coal-fired power plant and the need for much stronger

demand management in Victoria and elsewhere. Furthermore, with electricity prices continuing to rise, energy efficiency is important.

4. Fossil fuels drive climate change.

Fossil fuels drive climate change, and that is bad news for all us. It means more extreme weather events such as catastrophic bushfires, severe storms and deadly heatwaves. Climate change endangers homes, our businesses, communities and us. It even led to an entire state being plunged into darkness when storms in South Australia took out over 20 transmission towers.

This is why the whole world is moving away from coal. They are shutting down existing coal-fired power stations, and embracing renewable energy.

5. Peoples' choice: Renewables NOT coal.

A Climate Institute survey found that Australians overwhelmingly support renewable energy both in terms of emission reduction and in ideal energy mix. Solar, wind and hydro are the preferred energy sources. Coal was ranked last, behind nuclear (The Climate Institute 2012).

6. What is the Federal Government doing?

Our Federal Government has promised the public it will take a "clear eyed, pragmatic and objective" approach to energy policy, not one "driven by ideology".

The Federal Government has also promised we will meet our commitment to reduce emissions as agreed under the Paris Agreement.

In keeping that promise Australia must rapidly phase out the use of fossil fuels like coal and gas.

The power stations we build now will determine our emissions, electricity costs and health outcomes for the next 30-40 years.

It is clear, the federal government's climate and energy policies are failing. Emissions continue to rise, particularly the highest source of pollution – the electricity sector. Worse still, the Federal Government is compounding this abject climate policy failure by talking up "clean coal".

The Federal Government regards "clean coal" as the use of "ultra-supercritical coal-fired power plants". But this is pure fantasy. Coal is a fossil fuel. It pollutes and is not clean.

Major Australian energy companies have ruled out building new coal plants. The Australian Energy Council sees them as "uninvestable". Banks and investment funds are not interested. Only government subsidies could do it, at a massive expense to taxpayers when the Federal Government's mantra is to provide affordable electricity to Australian households.

These new coal plants would ultimately be more expensive than renewables and carry a huge liability through the carbon emissions they produce.

7. "Clean coal" score card.

1. Be clean (low emissions)	FAIL
2. Affordable	FAIL
3. Reliable	FAIL

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