Briefing paper on Victoria's climate challenge
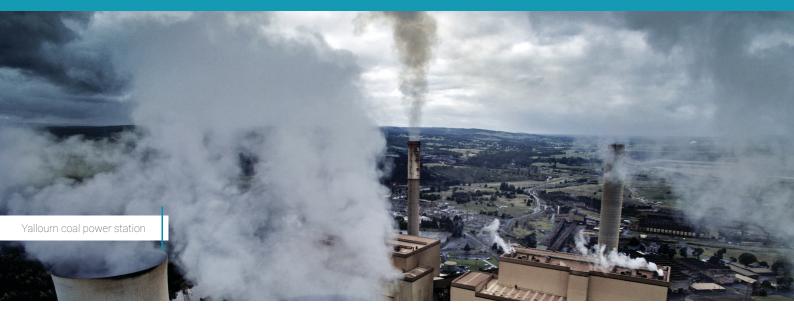
An assessment of sector-by-sector emissions projections for 2016-2020

Yallourn coal power station

Victoria's emissions at a glance[1]

- **In 2020, Victoria's greenhouse gas emissions are projected to be 104.5 million tonnes of CO2-e.** This is 9% lower than they were in 2016 and 18% lower than they were in 2005. This means we will achieve the Andrews government's target of 15-20% reduction on 2005 levels by 2020.
- **On current trajectories, the electricity sector will be responsible for 95% of the reduction between 2016 and 2020.** The closure of Hazelwood power station alone was responsible for 75% of Victoria's emission reductions.
- **Coal-burning power stations remain the largest single source of greenhouse gas emissions in Victoria.**
- **Emissions in Victoria's other sectors are stubbornly and dangerously high**, decreasing by less than 1%, with several sectors increasing.

Policy implications

- **There is a need to find ways to urgently reduce emissions from coal-burning power stations** if we are to contribute to global efforts to keep warming to 1.5 or 2 degrees.
- **As a first step, the Andrews government should use the Environment Protection Authority's (EPA) current review into the licences of Victoria's three coal power stations as an opportunity to place immediate limits on greenhouse gas emissions**. This would end the absurdity that our biggest climate polluters currently face no limit on how much carbon pollution they can dump into our atmosphere, and would help drive down emissions without waiting for the next power station to close.
- **The Victorian government needs to implement programs that will reduce emissions across the entire economy,** where effectively no progress has been made. Continued emissions growth in transport and agriculture is particularly problematic.

Context for this briefing paper

In October 2018, the Victorian government released the *Victorian Greenhouse Gas Emissions Report*, just one day before the pre-election caretaker period commenced.

This report is released annually as a requirement under the *Climate Change Act 2017*. However, coming out just moments before a state election, the important findings of this report went largely unnoticed.

This briefing paper provides a snapshot of the status of Victoria's greenhouse gas emissions and analysis on the policy implications of the data.

The EPA's review into the licences of Victoria's coal power stations, to be concluded in the next month, provides a timely opportunity to act on the implications of this report.

Victorian emissions data

Electricity is the only bright light of emissions reductions in Victoria

Electricity – Decreasing

- This sector is Victoria's largest source of emissions, responsible for 52% of the state's emissions (until the closure of Hazelwood power station).[2]

- Emissions from electricity increased in the 1990s and early 2000s, but flat-lined in the mid-2000s as renewable energy increased and energy efficiency improved.

- Electricity emissions are projected to decrease by 25.2% between 2016 and 2020 – which represents 95% of all emissions reductions in Victoria. This fall is overwhelmingly due to the closure of Hazelwood, and accounts for three quarters of the emissions reduction in the electricity sector. The remaining reduction is due to an increase in renewable energy.

Victoria's Stubborn Sectors

Transport – Increasing

- This is Victoria's second largest source of emissions, responsible for 19.5% of emissions in 2016.

- Transport emissions increased by 39% between 1990 and 2016 and are projected to grow by a staggering 10.5% between 2016 and 2020.

- Cars and trucks are the primary source of transport emissions, responsible for 90% of transport emissions.

Direct combustion – Stable

- Direct combustion is Victoria's third-largest source of emissions, responsible for 16.2% of emissions in 2016

- Direct combustion emissions increased by 23% between 1990 and 2016 and are projected to remain stable, decreasing slightly by 0.9% between 2016 and 2020.

- Households burning gas for heating and cooking are responsible for 34% of these emissions, while manufacturing and industry are responsible for 32%.

Agriculture – Increasing

- Agriculture was responsible for 12.2% of Victoria's GHG emission in 2016.

- Agriculture emissions fluctuated between 1990 and 2016, and are currently 7% below 1990 levels. However, emissions are projected to increase 10% from 2016 to 2020.

- Emissions from ruminant animals such as cows and sheep are the largest source of agricultural emissions, responsible for 68% of Victoria's agriculture emissions.

Industrial Processes – Stable

- Industrial Processes were responsible for 3.6% of Victoria's emissions in 2016.

- Emissions from industrial processes grew by 50% between 1990 and 2016 and are projected to increase by a further 2% by 2020. However, this will have a small impact on the State's carbon budget due to the relatively small size of industrial emissions.

- These emissions come from industrial processes that are not for the purpose of producing energy (which is captured elsewhere). Examples include production of chemicals and metals.

Waste – Stable

- Waste was responsible for 2.2% of the State's emissions in 2016.

- These emissions declined by 50% between 1990 and 2016 and are projected to decrease by 4% by 2020, but this will have an insignificant impact on the State's carbon budget due to the small size of waste emissions.

Fugitive emissions – Decreasing

- Fugitive emissions were responsible for 2.8% of the State's emissions in 2016.

- Fugitive emissions declined by 16% between 1990 and 2016 and are projected to further decrease by 15.6% by 2020. However, this will have an insignificant impact on the State's carbon budget due to the small size of fugitive emissions.

- 60% of fugitive emissions come from losses in the transmission, storage and distribution of natural gas. The remaining emissions are primarily produced through oil and gas exploration.

Land Use, Land-Use Change and Forestry (LULUCF) - Increasing

- LULUCF has shifted from a net source of emissions in 1990 to being a net carbon sink in 2016. The sector sequestered 8.5% of Victoria's emissions in 2016.

- It is projected that the amount of carbon sequestered by the land sector will fall to 7% by 2020, which is a 25.3% reduction in the emissions sequestered by the sector.

- This reduction in sequestration is due to an increase in plantation harvesting and low rates of plantation establishment.

Policy Implications

According to government figures, the closure of Hazelwood power station will be responsible for 75% of the emissions reduction achieved in Victoria between 2016 and 2020.

The remaining emissions reduction will result primarily from renewable energy displacing fossil fuels.

This means that the closure of one power station overshadows all other actions taken in Victoria to reduce emissions, and without Hazelwood's closure, Victoria would be nowhere near meeting our 2020 emissions target of 15 to 20 percent below 2005 levels.

Key conclusions and next steps:

1. Cutting greenhouse gas emissions from coal is the fastest way to achieve emission reductions

Victoria's three remaining coal-burning power stations (Yallourn, Loy Yang A and Loy Yang B) are responsible for almost 40% of the state's climate pollution.[3]

Achieving Victoria's long-term climate commitments, and any credible medium-term targets, will require completely phasing out coal power. Government planning for the electricity system needs to be working towards this outcome. On the back of the Intergovernmental Panel on Climate Change's report on staying under 1.5 degrees of warming, released in 2018, developed countries should have phased out coal power by 2030 at the latest.

2. Victoria's Environment Protection Authority (EPA) should limit greenhouse emissions from coal-burning power stations

While it is clear that a phase-out of coal power is critical to tackling climate change, policy makers should ensure that emissions from coal-burning power stations are reduced while they remain open.

The EPA is currently reviewing the licences of the state's three coal-burning power stations. Their final decision is expected in the next month. This is the perfect opportunity to place limits on how much greenhouse gas each power station can produce each year.

The EPA already does this for toxic air pollutants like sulphur dioxide, but they have ignored the greenhouse gas emissions from the same power stations. The annual tightening of these limits could initially be set to correspond with Victoria's emission reduction targets – which is to reduce emissions by 15 to 20 percent on 2005 levels by the year 2020 and to reach net zero emissions by 2050.

Until interim emissions reduction targets for 2025 and 2030 are set, coal generators should be required to reduce greenhouse gas emissions by 3% a year – the absolute minimum linear trajectory if we're to meet the legislated target of net zero emissions by 2050. However, the scale and imperative of climate change warrants much faster reductions in emissions from coal.

3. Much more needs to be done to reduce emissions in other sectors

Beyond the electricity sector, Victoria is making little progress in reducing its emissions and is even going backwards in a number of areas. Getting to net zero emissions by 2050 and meeting credible interim targets will require deep cuts across all sectors.

The Climate Change Act requires government Ministers to develop emissions reduction goals across key sectors of the Victorian economy by March 2020. Ministers must also identify actions that can be taken by government to achieve these goals. Given that sectors outside of electricity are performing so poorly, it is clear that more departmental resources need to be committed to the process of developing these emissions goals, to ensure targets are ambitious and implemented immediately.

4. Victorian emissions data needs to be made available faster

The government's report released in October 2018 only contained data up until the end of 2016 – almost two full years after the fact.

Emissions data should be collected, analysed and made public much faster than this. This would allow for quicker feedback to decision-makers on the effectiveness of emissions reduction policies, as well as ensuring better public transparency on government efforts to tackle the climate crisis.

Endnotes

1. This briefing paper summarises the Victorian Greenhouse Gas Emissions Report 2018. This report is published by the Victorian Government, and draws on National and State datasets. *The original report can be found at https://www.climatechange.vic.gov.au/__data/assets/pdf_file/0033/395079/Victorian-Greenhouse-Gas-Emissions-Report-2018.pdf*
2. Comprehensive emissions data for the year since Hazelwood's closure has not been released, but electricity is likely to now be responsible for approximately 40% of Victoria's greenhouse gas emissions.
3. Loy Yang A, Yallourn and Loy Yang B were responsible for 43,583,486 t CO2-e in 2016-17, equivalent to 38% of Victoria's total emissions, according to data from the Clean Energy Regulator (http://www.cleanenergyregulator.gov.au/NGER/National%20greenhouse%20and%20energy%20reporting%20data/electricity-sector-emissions-and-generation-data/electricity-sector-emissions-and-generation-data-2016-17) and the National Greenhouse Gas Inventory (http://ageis.climatechange.gov.au/).