

# Enough Scope

## Coal mines, scope 3 emissions and NSW climate policy

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*Coal mined in NSW causes more emissions than the UK or France and nearly four times more than directly emitted from NSW itself. NSW climate policy aims for net zero emissions by 2050. Yet in the midst of a bushfire crisis, under coal lobby pressure, the NSW Government seeks to abolish the legal requirement to consider emissions from coal exports.*

Discussion paper

Tom Swann

Rod Campbell

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Level 1, Endeavour House, 1 Franklin St

Canberra, ACT 2601

Tel: (02) 61300530

Email: [mail@tai.org.au](mailto:mail@tai.org.au)

Website: [www.tai.org.au](http://www.tai.org.au)

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# Summary

Scientists have warned for decades that increasing greenhouse gas emissions will lead to more extreme bushfire conditions. NSW has been ravaged by unprecedented bushfires and much more is still to come. At the same time, the NSW Government has introduced legislation that seeks to weaken legal protections against increased emissions from NSW's largest source of greenhouse gas emissions: coal mining.

The legislation follows coal industry backlash over three recent independent planning decisions about coal mines in NSW: Rocky Hill, United Wambo and Bylong. While climate change was a small part of these decisions, they each considered more closely than usual the 'scope 3' emissions – emissions 'downstream' from the mines, when the coal is burned.

The need to consider these emissions is clear when we look at their vast scale. Emissions from NSW coal mining are larger than domestic emissions from the UK or France. NSW coal mining emissions are nearly four times larger than all direct emissions from within NSW itself and nearly as large as all of Australia's domestic emissions.

The NSW Government has a climate policy that supports the Paris Agreement on climate change and targets net zero emissions by 2050.

This policy is undermined by the proposed legislation and its potential to facilitate new coal mines. The Paris Agreement sets global goals and encourages actions towards them. Preventing consideration of scope 3 emissions has nothing to do with the letter of the Paris Agreement, and is against its spirit. Moreover, coal mines are highly emissions intensive. Fugitive emissions directly from coal mines make up 10% of NSW's total emissions, and coal mining also uses a lot of diesel. New coal mines undermine the climate policy and require bigger cuts from other industries.

The coal industry has criticised independent planning decision makers by saying they have "no legal obligation to abide by any of the policies of the elected government of the day". Contrary to that claim, decision makers are required to consider government policies, including NSW climate policy. NSW climate policy was a key reason why the Bylong coal mine decision found the economic benefits of the mine to be "uncertain".

The NSW Government highlights "Net-zero emissions is consistent with strong economic growth". This is well supported by a large economic literature. The Government also notes

**Net-zero emissions by 2050 is consistent with the approach of leading Australian corporations... Aligning with leading corporations will improve collaboration and improve investment certainty.**

Stopping consideration of scope 3 emissions would put the NSW government out of line with increasing corporate expectations. Major Australian and international banks will no longer lend money to fund new coal mines and insurance companies will not underwrite thermal coal projects. Major climate investor initiatives include disclosure and target setting for scope 3 emissions. BHP recently started reporting scope 3 emissions and says it will set targets for reducing them. Many mining executives see scope 3 emissions as a rising risk to mining's social license and sector leaders predict regulation on scope 3 emissions.

It is not in the state's interest for the NSW Government, under pressure from coal lobby groups, to weaken the legal consideration of the state's biggest cause of climate change. NSW would be better served by aligning coal mining policy with climate policy to stop the construction of new mines.

# Introduction

In September 2019 the NSW Independent Planning Commission (IPC) rejected the Bylong coal mine proposal, in the Bylong Valley, between Muswellbrook and Mudgee. The Bylong decision followed a judgement earlier in the year by the Chief Justice of the NSW Land and Environment Court (LEC), that refused the proposed Rocky Hill open cut mine. A later decision by the IPC placed restrictions on its approval of an extension of the United Wambo mine in the Hunter Valley.

These three decisions drew outrage from the coal industry and various NSW politicians, due to how they considered climate change. Climate change was in fact a small part of each decision, with most of the decisions relating to other matters like impacts on water resources, visual amenity and social impacts. However the coal industry backlash has focused entirely on how the decisions treated ‘scope 3’ emissions.

Scope 3 emissions are greenhouse emissions caused not by the mines directly, but ‘downstream’ from the mine when the coal is burned. Coal mines themselves directly emit large amounts of greenhouse gases in their operations (scope 1 and 2 emissions), but their overwhelming source of emissions are scope 3 emissions caused by burning the coal.

The coal industry dismisses concerns about scope 3 emissions by arguing ‘if we don’t sell it, someone else will’. The argument is often criticised by calling it the ‘drug dealer’s defence’, although this is misleading. While coal exporters use the argument as a legal defence for exporting more coal, drug dealers cannot use it as a legal defence in court.

This defence was explicitly rejected in the Rocky Hill LEC judgement:

The potential for a hypothetical but uncertain alternative development to cause the same unacceptable environmental impact is not a reason to approve a definite development that will certainly cause the unacceptable environmental impacts.<sup>1</sup>

Instead of contesting the evidence and arguments in the decisions, the NSW Minerals Council (NSWMC) has been engaged in advertising and lobbying efforts to change the law. Following this pressure, the NSW Government has introduced new legislation, which, according to Deputy Premier John Barilaro, seeks to prevent “the regulation of overseas, or scope-three, greenhouse gas emissions” when assessing the coal projects.<sup>2</sup>

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<sup>1</sup> *Glouster Resources Limited v Minister for Planning* (2019) NSWLEC [86], (par 545)  
<https://www.caselaw.nsw.gov.au/decision/5c59012ce4b02a5a800be47f>

<sup>2</sup> Cox (2019) *NSW moves to stop mine projects being blocked because of their overseas emissions*,  
<https://www.theguardian.com/environment/2019/oct/22/nsw-to-try-to-stop-mine-projects-being-blocked-because-of-their-overseas-emissions>

This report estimates the emissions from NSW coal mines and argues that action in line with existing NSW climate policy should seek to limit new coal mines, not promote them.

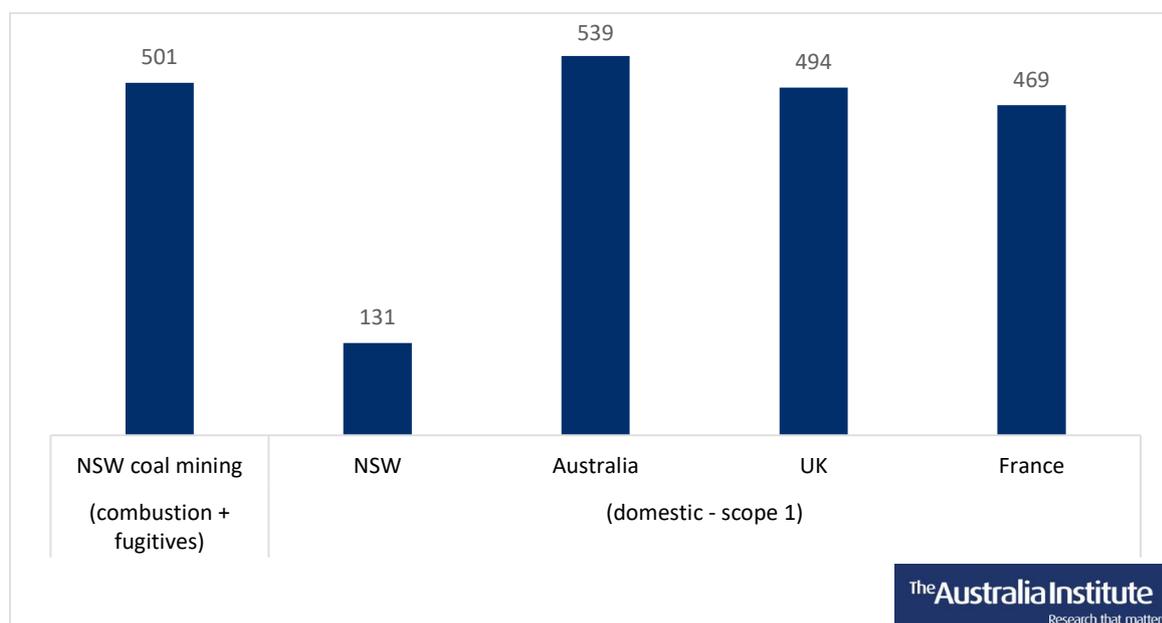
# NSW coal emissions

The topic of scope 3 emissions has until recently been virtually taboo in mining, planning and government circles. The problem with this is clear if we consider the scale of Australia’s scope 3 emissions. Australia exports more fossil fuel CO2 than any other country except Saudi Arabia and Russia.<sup>3</sup> Most of this is from exported coal.

Emissions embedded in the coal mined in NSW are by far the state’s largest source of emissions. Most of this coal is for power stations, as opposed making steel. Most of the state’s coal is exported. NSW’s power system is still heavily based on coal, with 79% of its consumption being met by coal power stations in NSW.<sup>4</sup>

Coal mined in NSW is responsible for around 500 million tonnes of CO2e. This includes the emissions from burning the coal (488 Mt CO2e) as well as the fugitive emissions. As most of the coal is exported, most of these emissions physically occur overseas, but are the direct consequence of coal mining in NSW. References and calculations are in the appendix.

**Figure 1: NSW coal mining emissions in context (Mt CO2e)**



Source: calculations and references in Appendix

Emissions from coal mining in NSW are larger than domestic emissions from the UK and France, nearly four times larger than emissions from within NSW itself and almost as big as all of Australia’s domestic emissions.

<sup>3</sup> Swann (2019) *High Carbon from a Land Down Under: Quantifying CO2 from Australia’s fossil fuel mining and exports*, <https://www.tai.org.au/content/new-analysis-australia-ranks-third-fossil-fuel-export>

<sup>4</sup> OpenNEM (2019) *NSW* <https://opennem.org.au/energy/nsw1/>

# NSW climate policy

In 2016 the NSW government adopted the *NSW Climate Change Policy Framework (CCPF)*.

The CCPF starts with a clear acknowledgment of the Paris Agreement as “a commitment to achieve net-zero emissions, globally, by the second half of the century” and with countries like Australia reducing emissions “sooner than developing nations”.<sup>5</sup> It also notes the Paris Agreement includes “a five year review and ratchet process which is likely to lead to more ambitious commitments from countries in the future”.<sup>6</sup>

On this basis, the CCPF states

The NSW Government endorses the Paris Agreement and will take action that is consistent with the level of effort to achieve Australia’s commitments to the Paris Agreement.<sup>7</sup>

As a result, the NSW government has adopted an emissions target:

The NSW Government’s objective is to achieve net-zero emissions by 2050.<sup>8</sup>

While “aspirational”, the target “sets a clear statement of government’s intent, commitment and level of ambition and sets expectations about future emissions constraints that will help the private sector to plan and act”.<sup>9</sup>

## SCOPE 3 AND PARIS

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The NSW Government has tabled legislation that aims to prevent planning decisions considering impacts occurring outside of Australia or impacts on NSW due to developments overseas.<sup>10</sup> The NSWMC says this legislation will ensure “project assessments in NSW remain consistent with the emissions accounting approach of the Paris Agreement.”<sup>11</sup>

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<sup>5</sup> Office of Environment and Heritage (2016) *NSW Climate Change Policy Framework*, p. 3, <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/nsw-climate-change-policy-framework-160618.pdf>

<sup>6</sup> Ibid.

<sup>7</sup> Ibid. p.4

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> *Environmental Planning and Assessment Amendment (Territorial Limits) Bill 2019*, <https://www.parliament.nsw.gov.au/bills/Pages/bill-details.aspx?pk=3717>

<sup>11</sup> Caruana (2019) *NSW government pledges 'Scope 3' reform* <https://www.miningmonthly.com/sustainability/international-coal-news/1374110/nsw-government-pledges-%E2%80%98scope-3%E2%80%99-reform>

No part of the Paris Agreement prohibits consideration of scope 3 emissions. Countries are required to set targets for domestic emissions and to consider increasing them over time. Beyond this, the Agreement encourages cooperation between countries beyond domestic targets to achieve the global goals. The global goals include a limit on global temperature increases, as well as “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development”.<sup>12</sup>

Stopping consideration of scope 3 emissions has nothing to do with the letter of the Paris Agreement, and contradicts its intent.

## CONSEQUENCES OF THE POLICY

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The NSWMC has criticised the decisions from the IPC, by stating the IPC has “no legal obligation to abide by any of the policies of the elected government of the day”.<sup>13</sup>

Contrary to the NSWMC’s claims, the IPC is legally required to consider government policies. In fact the IPC specifically considered the government’s climate policy when considering the Bylong coal mine.

The IPC is established and bound by the *Environmental Planning and Assessment Act (1979) (EPA Act)*.<sup>14</sup> Section 4.15(1)(a) of the EPA Act requires the decision maker to consider environmental planning instruments, including the State Environmental Planning Policies (SEPPs). The Mining SEPP, requires the decision-maker to consider “downstream emissions” and “any applicable State or national policies” (s14(2)).<sup>15</sup>

This is why, in the Bylong decision, the IPC considered downstream emissions and NSW climate policy. The IPC was legally required to do so.

Consideration of the CCPF led the IPC to reject the proponent’s economic assessment of the claimed benefits of the mine as “uncertain”. The proponent had only considered coal demand scenarios that entailed failure under the Paris Agreement, when they should have also considered a scenario consistent with the Paris Agreement, such as the International Energy Agency (IEA)’s Sustainable Development Scenario (SDS). The IPC stated:

The SDS presents the changes to the energy sector that would be needed to deliver the internationally agreed objectives of the Paris Agreement on climate change. The

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<sup>12</sup> UNFCCC (2015) *Paris Agreement* Art. 2.1c [https://unfccc.int/sites/default/files/english\\_paris\\_agreement.pdf](https://unfccc.int/sites/default/files/english_paris_agreement.pdf)

<sup>13</sup> NSWMC (2019) *Bylong decision shows the utter failure of the NSW planning system*, <http://www.nswmining.com.au/menu/media/news/2019/september/bylong-decision-shows-the-utter-failure-of-the-nsw>

<sup>14</sup> *Environmental Planning and Assessment Act 1979* [http://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol\\_act/epaaa1979389/](http://www8.austlii.edu.au/cgi-bin/viewdb/au/legis/nsw/consol_act/epaaa1979389/)

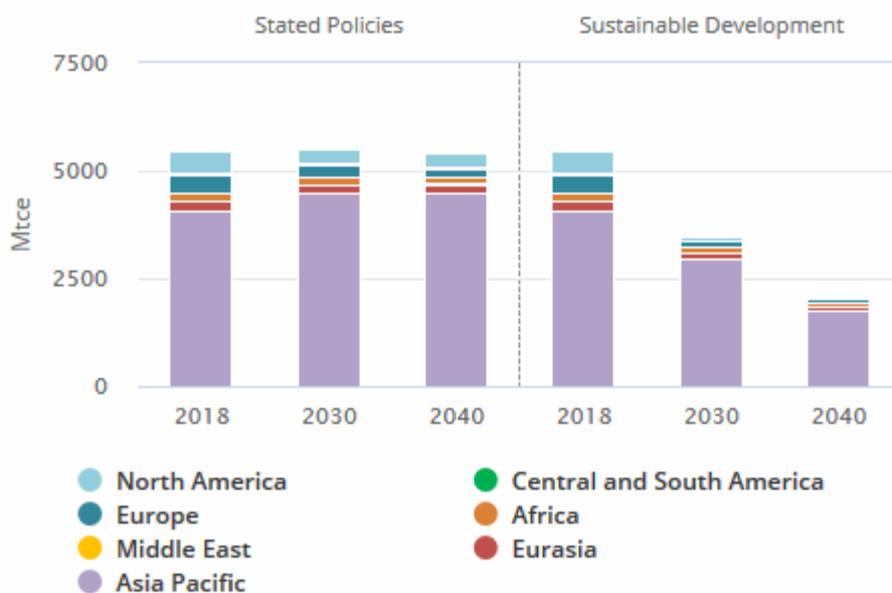
<sup>15</sup> *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* <https://www.legislation.nsw.gov.au/#/view/EPI/2007/65>

Paris Agreement is referred to in the NSW Climate Change Policy, which is a relevant consideration for this project.

...the commission therefore considers that the SDS represents a market scenario that should have been considered.<sup>16</sup>

The IEA's SDS considers policies delivering economic growth, universal energy access and success on climate change. In the SDS coal use goes into immediate and sustained decline. Even in the IEA's *Stated Policies Scenario*, based on current policies that are insufficient to meet the Paris Agreement goal, global coal use is flat.

**Figure 2: IEA coal demand projections**



Source: IEA (2019) *World Energy Outlook 2019*, <https://www.iea.org/weo2019/fuels/>

By not considering scenarios consistent with the Paris Agreement goals, the proponent had produced an economic assessment that was uncertain. The uncertainty of benefits was important when “weighing up the acceptability of GHG emissions” and other impacts.

<sup>16</sup> IPC (2019) *Bylong Coal Project: Statement of Reasons For Decision*, par 780  
<https://www.ipcn.nsw.gov.au/resources/pac/media/files/pac/projects/2018/10/bylong-coal-project/determination/bylong-coal-project-ssd-6367--statement-of-reasons-for-decision.pdf0>

# Coal fugitive emissions

While the current controversy relates to scope 3 emissions from exported coal, it is also important to consider domestic emissions from coal mines. Mining coal is very emissions intensive, in particular due to fugitive emissions directly from mines. This is a small part of overall emissions associated with NSW coal mining but is a significant threat to NSW's climate policy.

In 2017 fugitive emissions from “solid fuels”, that is from coal and coal mines, was 10% of NSW emissions.<sup>17</sup>

For context, the scale of NSW coal mine fugitive emissions is larger than the net emissions sequestered in the land sector (e.g. forestry and on farms).

Coal mining also uses a lot of diesel for transport and other machinery, as well as using significant amounts of electricity. These emissions are not included above.

Continuing to construct new coal mines and extensions will produce additional direct emissions for many decades. This directly undermines the NSW Government target of net zero emissions.

If mines are approved producing additional emissions, these emissions will need to be offset by larger emission reductions elsewhere. This could be avoided by requiring the mines to fully offset their emissions. Note this would be required simply to stop emissions from increasing and it could make it more costly for the rest of NSW to meet the net zero target. From the perspective of emissions policy, it is preferable to prevent the construction of new mines and the fugitive emissions they create.

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<sup>17</sup> Department of the Environment and Energy (2019) *State and Territory Greenhouse Gas Inventories 2017* <https://www.environment.gov.au/system/files/resources/917a98ab-85cd-45e4-ae7a-bcd1b914cfb2/files/state-territory-inventories-2017.pdf> page 29

# Economic benefits of reducing emissions

While the coal industry has claimed that decisions to restrict coal mines threaten the NSW economy, the NSW Government itself emphasises the economic benefits of cutting carbon. A Government factsheet notes:

Leading businesses and investors are also committing to action to reduce their emissions and diverting investment to clean technology. Net-zero emissions by 2050 is consistent with the approach of leading Australian corporations such as AGL, Amcor, Wesfarmers and Telstra. Aligning with leading corporations will improve collaboration and improve investment certainty.<sup>18</sup>

Conversely, failing to align with leading corporations, divert investment to clean energy or reduce emissions will undermine investment certainty.

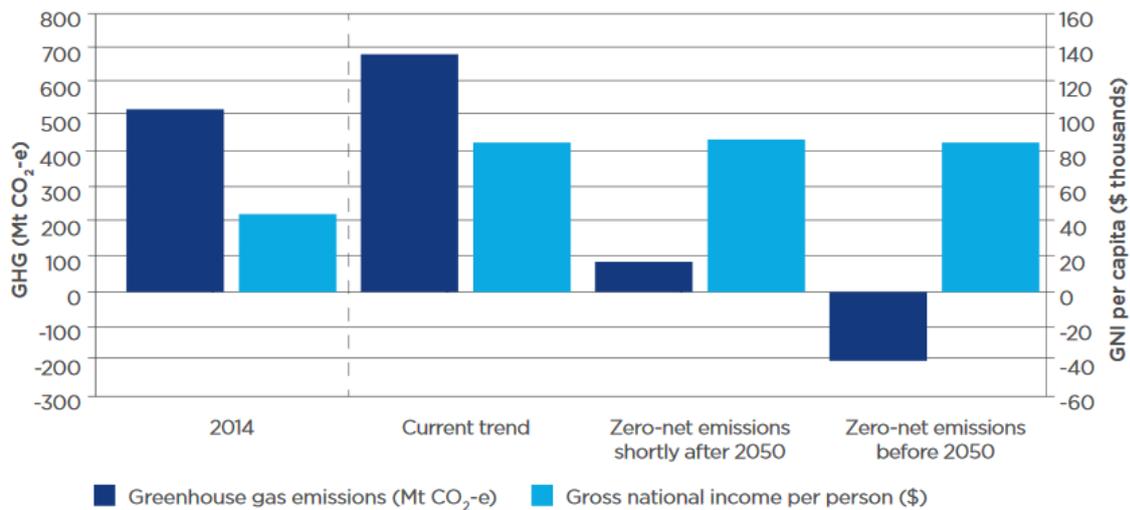
The Government emphasises that “Net-zero emissions is consistent with strong economic growth”. It cites a 2015 CSIRO study showing economic growth is not only possible with deep cuts in emissions, but that achieving the cuts earlier with proactive policies can increase growth (see Figure 2). The CSIRO study concludes “Australia is ‘free to choose’ economic growth and falling environmental pressures”.<sup>19</sup>

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<sup>18</sup> NSW Department of Environment (2016) *Fact Sheet: Achieving Net-Zero Emissions By 2050*  
<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/achieving-net-zero-emissions-by-2050-fact-sheet-160604.pdf>

<sup>19</sup> Hatfield-Dodd et al (2015) *Australia is ‘free to choose’ economic growth and falling environmental pressures*  
<https://www.nature.com/articles/nature16065>

**Figure 3: NSW Government factsheet showing decarbonisation with strong growth**



Source: figure from DoE (2016) *Fact Sheet: Achieving Net-Zero Emissions By 2050*; data from Hatfield-Dodds et al (2015) *Australia is 'free to choose' economic growth and falling environmental pressures*,

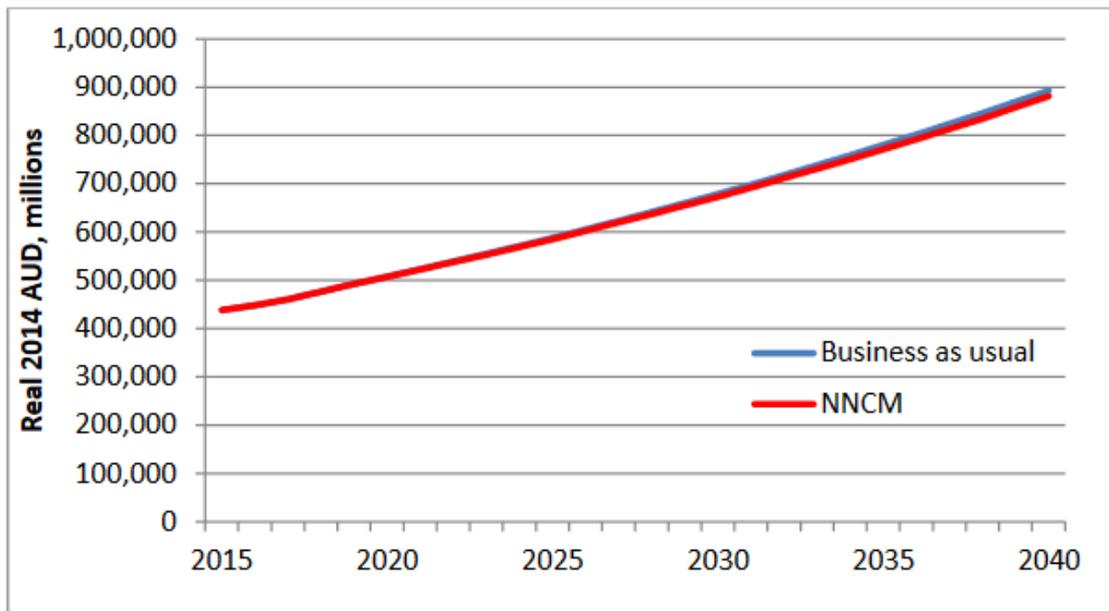
This is consistent with a large economic literature showing that decarbonisation can be combined with strong economic growth. The Australia Institute analysed over 20 recent modelling reports on the ‘cost of action’ on emissions, including three from Commonwealth Treasury, CSIRO, ANU, UTS, UNSW, Frontier Economics, Reputex and others.<sup>20</sup> These reports find strong action to reduce emissions has little economic cost and many benefits. These results do not include the significant further benefits of avoided health and climate costs.

An earlier report from The Australia Institute presented detailed macro-economic modelling of a moratorium on new coal mines.<sup>21</sup> Stopping the construction of new mines, while allowing existing mines to operate, would redirect capital and allow planning for a transition over decades, resulting in very little economic impact. This result confirms the statement from the NSW Government.

<sup>20</sup> Swann (2019) *A Model Line-up* <http://www.tai.org.au/content/new-analysis-brian-fisher-modelling-climate-outlier>

<sup>21</sup> Denniss et al (2016) *Never gonna dig you up* <https://www.tai.org.au/sites/default/files/P198%20Never%20gonna%20dig%20you%20up%20FINAL.1.pdf>

Figure 4: NSW Gross State Product, business as usual vs no new coal mines



Source: CoPS model, in Denniss et al (2016) *Never Gonna Dig you Up*

Conversely, continuing to build new coal mines creates greater uncertainty for communities, greater risks of stranded assets, greater emissions and so greater climate impacts, and increases the disruption involved in the necessary transition.

# Corporate expectations on scope 3

While the NSWMC argues no NSW government policy or agency should consider scope 3 emissions, mining industry leaders and the wider finance sector understand the importance of scope 3 emissions.

Major Australian banks have formal policies limiting lending to coal mines. NAB will not fund new thermal coal mines.<sup>22</sup> Westpac will not fund mines below a quality threshold or in a new basin.<sup>23</sup> Many major international banks have similar policies.

All major investor initiatives on climate change include disclosure and target setting for scope 3 emissions. This includes the

- Taskforce on Climate Related Financial Disclosures (TCFD);<sup>24</sup>
- CDP;<sup>25</sup> and
- the Science Based Targets Initiative.<sup>26</sup>

The TCFD was set up by the Financial Stability Board of the G20. A key part of the TCFD recommendations is stress testing assets against climate change scenarios, including at least one 'Paris aligned' scenario consistent with limiting global warming to below two degrees. This includes scope 3 emissions. The IPC's decision on the Bylong coal mine in effect requires proponents to follow this recommendation.

BHP recently started reporting scope 3 emissions and says it will set targets for reducing them that are aligned with Paris.<sup>27</sup> BHP has been a key part of developing the TCFD.

BHP is a NSWMC member.

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<sup>22</sup> NAB (2017) *Update on Financing of New Thermal Coal Mining Projects* <https://news.nab.com.au/update-on-financing-of-new-thermal-coal-mining-projects/>

<sup>23</sup> Westpac (2017) *Climate Change Position Statement and 2020 Action Plan* <https://www.westpac.com.au/content/dam/public/wbc/documents/pdf/aw/sustainability/WestpacCCEActionPlan.pdf>

<sup>24</sup> FSB TCFD (2017) *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures* <https://www.fsb-tcf.org/wp-content/uploads/2017/06/FINAL-TCFD-Annex-062817.pdf>

<sup>25</sup> CDP (2019) *How can companies address their scope 3 greenhouse gas emissions?* <https://www.cdp.net/en/articles/companies/how-can-companies-address-their-scope-3-greenhouse-gas-emissions>

<sup>26</sup> SBTi (2019) *Science Based Targets* <https://sciencebasedtargets.org/>

<sup>27</sup> Toscano (2019) *BHP sets emissions cuts for customers in major carbon push* <https://www.smh.com.au/business/companies/bhp-sets-emissions-cuts-for-customers-in-major-carbon-push-20190723-p529wk.html>

Ernst and Young (EY), who are BHP's auditor, recently surveyed mining executives and found many see scope 3 emissions as a rising risk to mining's social license. EY global mining leader Paul Mitchell said, "miners will inevitably be expected to participate in reducing the carbon footprint of the end products" which could include regulation "hence the need to begin focusing on scope 3 emissions."<sup>28</sup>

Mitchell also said companies will be expected to consider which customers they sell to as part of reducing scope 3 emissions. This principle was seen already in an earlier IPC recommendation that the United Wambo mine be required to sell coal only to countries complying with the Paris Agreement.

Considering scope 3 emissions from coal mines is in line with increasing corporate expectations. Preventing consideration of scope 3 emissions would run counter to this trend, undermining the benefits of the long term emission reduction target.

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<sup>28</sup> Ker (2019) *Scope 3 accountability inevitable for miners, says EY*  
<https://www.afr.com/companies/mining/scope-3-accountability-inevitable-for-miners-says-ey-20191002-p52wzb>

# Conclusion

Scientists have warned for decades that increasing greenhouse gas emissions will lead to increased risks from extreme bushfires. NSW is battling unprecedented bushfires which could burn for months more.

At the same time, the NSW Government has introduced legislation, under pressure from the coal industry, seeking to force NSW decision makers to ignore NSW's largest source of greenhouse gas emissions: coal mining.

Excluding scope 3 emissions from consideration would be out of step with evolving corporate expectations and contrary to NSW government commitments to the goals of the Paris Agreement. Constructing new coal mines directly undermines the NSW government's net zero emissions. As the NSW government itself acknowledges, deep decarbonisation is an economic opportunity, possible while maintaining strong economic growth.

It is not in NSW's interest for the government, under pressure from coal lobby groups, to weaken the legal consideration of climate change. NSW would be better served by aligning coal mining policy with climate policy to stop the construction of new mines.

# Appendix

Table 1: NSW coal mining emissions in context

	Data	Units	Source
<b>National / state emissions (scope 1)</b>			
<b>Australia</b>	<b>539</b>	MtCO <sub>2</sub> e	Year to March 2019, total <sup>29</sup>
<b>NSW</b>	<b>131</b>	MtCO <sub>2</sub> e	2017, total <sup>30</sup>
<b>United Kingdom</b>	<b>494</b>	MtCO <sub>2</sub> e	2016, total, ex LULUCF <sup>31</sup>
<b>France</b>	<b>469</b>	MtCO <sub>2</sub> e	2016, total, ex LULUCF <sup>31</sup>
<b>NSW coal mining emissions (combustion and fugitives)</b>			
<b>coal mined</b>	197	Mt	Saleable, FY2019 <sup>32</sup>
(coking)	30	Mt	Saleable, FY2019 <sup>32</sup>
(thermal)	167	Mt	Saleable, FY2019 <sup>32</sup>
<b>combustion emissions</b>			
(coking)	80	MtCO <sub>2</sub>	IPCC emission factor <sup>33</sup>
(thermal)	408	MtCO <sub>2</sub>	IPCC emission factor <sup>33</sup>
<b>Total</b>	<b>488</b>	<b>MtCO<sub>2</sub></b>	
<b>NSW coal fugitives</b>	13	MtCO <sub>2</sub> e	2017, 'solid fuels' <sup>34</sup>
<b>TOTAL</b>	<b>501</b>	<b>MtCO<sub>2</sub>e</b>	Sum two figures above.

<sup>29</sup> NGGI (2019) *Quarterly Update of Australia's National Greenhouse Gas Inventory: March 2019* page 7, <https://www.environment.gov.au/system/files/resources/6686d48f-3f9c-448d-a1b7-7e410fe4f376/files/nggi-quarterly-update-mar-2019.pdf>

<sup>30</sup> Department of the Environment and Energy (2019) *State and Territory Greenhouse Gas Inventories 2017*, page 29, <https://www.environment.gov.au/system/files/resources/917a98ab-85cd-45e4-ae7a-bcd1b914cfb2/files/state-territory-inventories-2017.pdf>

<sup>31</sup> NB these countries are reducing emissions. Data is all Kyoto GHG, excluding LULUCF, 2016 Potsdam Institute data, accessed via WRI (2019) *Climate Watch*, <https://www.climatewatchdata.org/>;

<sup>32</sup> Office of Chief Economist (2019) *Resources and Quarterly Sept 2019* <https://publications.industry.gov.au/publications/resourcesandenergyquarterlyseptember2019/index.html>

<sup>33</sup> Converting default energy figures into mass, then mass into default emissions. IPCC (2006) *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, Table 1.2 [https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2\\_Volume2/V2\\_1\\_Ch1\\_Introduction.pdf](https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf)

<sup>34</sup> Department of the Environment and Energy (2019) *State and Territory Greenhouse Gas Inventories 2017*, page 29, <https://www.environment.gov.au/system/files/resources/917a98ab-85cd-45e4-ae7a-bcd1b914cfb2/files/state-territory-inventories-2017.pdf>