

Emissions from Onshore Gas in Victoria

The Victorian Government has decided to allow onshore gas mining based on an internal report that claims minimal climate impacts. However the report ignores up to 88% of greenhouse emissions from new onshore gas mining, appearing to ignore emissions from burning the gas.

Briefing Note

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March 2020

On 17 March 2020, in the middle of a global pandemic crisis, the Victorian Government announced a decision to overturn the existing moratorium on onshore gas mining, to allow 'conventional' onshore gas.

This decision was justified by reference to the Victorian Gas Program Progress Report No.4 (VGPPR4). The Victorian Gas Program is a program of research to assess the potential for onshore and offshore conventional gas in Victoria, undertaken by the Earth Resources branch of the Victorian Department of Jobs, Precincts and Regions.¹

A key claim in the report is that the emissions from onshore gas are low and do not threaten the state's climate targets.

The report claims emissions from onshore gas in a high production scenario would be 249,067 tCO₂e per year.²

¹ Victorian Government, Earth Resources, Victorian Gas Program webpage, <https://earthresources.vic.gov.au/projects/victorian-gas-program>

² Victorian Gas Program (March 2020), Op. Cit. Table 4.9 p.55

However, it is clear that combusting the gas from this development would produce a far larger amount of emissions. It appears that the VGPPR4 has ignored combustion emissions in its environmental assessment.

VGPPR4 finds "additional 128–830 petajoules of gas that could be produced in the state".³ Table 1 below shows greenhouse gas emissions from combustion of this amount of gas.

Table 1: Onshore gas emissions: VPG report vs max combustion emissions

	Units	Data	Reference
Reported max production (average per year)	t CO2/ y	249,067	VGP (2020) ⁴
Product schedule	years	26	VPG (2020) ⁵
Reported emissions	t CO2	6,475,742	
Max potential gas combustion	PJ	830	VGP (2020) ⁶
	TJ	830,000	
Emissions factor	kg CO2/ TJ	56,100	IPCC (2006) ⁷
Max combustion emissions	kg CO2	46,563,000,000	
	t CO2	46,563,000	
Ignored emissions		88%	

Source: Victorian Gas Program (March 2020) *Progress Report No 4*, https://earthresources.vic.gov.au/data/assets/pdf_file/0005/524489/VGP_PR04-120320-Low-Res.pdf
 IPCC (2016) *2006 IPCC Guidelines for National Greenhouse Gas Inventories V2 Energy*, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

The calculations above indicate that the Victorian government appears to have ignored combustion emissions that have the potential to create 46 million tonnes of CO2. The reported emissions appear to be only scope 1 and 2, that is, direct emissions from gas mining.

Combustion emissions make up 88% of the maximum total emissions from mining and burning the resource.

³ Victorian Gas Program (2020) *Victorian Gas Program Progress Report, Report #4*, p.6
https://earthresources.vic.gov.au/data/assets/pdf_file/0005/524489/VGP_PR04-120320-Low-Res.pdf

⁴ Victorian Gas Program (2020), Ibid. p.55

⁵ Victorian Gas Program (2020), Ibid. p.50

⁶ Victorian Gas Program (2020), Ibid. p.2

⁷ IPCC (2016) *2006 IPCC Guidelines for National Greenhouse Gas Inventories V2 Energy*, https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

These calculations are very conservative as the full lifecycle emissions are likely to be much higher as there are significant additional emissions from extracting and processing the gas including the intentional and unintentional leakage of methane to the atmosphere. Methane is a potent greenhouse gas. It has a much greater global warming potential in the short term because over time it breaks down into carbon dioxide. It traps up to 34 times as much heat in the atmosphere as carbon dioxide averaged over 100 years, and around 86 times over 20 years.⁸ As such, even a small amount of methane leakage can greatly increase the global heating impact of a gasfield.

The report states that gas consumption in the state would not be changed by the project going ahead.⁹ It is possible that this is why the report ignores combustion emissions.

The reasoning might be that gas not produced in Victoria will be substituted for an equivalent amount, displacing another gas that would be imported from elsewhere. This reasoning is not made explicit but it would be very problematic.

Fossil fuel companies and their economists have routinely sought to ignore emissions of new fossil fuel developments on the basis that the exact same amount fossil fuel could simply be supplied from elsewhere. Known as the “market substitution” argument, this argument has been discredited, perhaps most succinctly in the decision of *Gloucester Resources Limited v Minister for Planning*. In that judgement, Chief Justice Preston of the NSW Land and Environment Court found that

if a development will cause an environmental impact that is found to be unacceptable, the environmental impact does not become acceptable because a hypothetical and uncertain alternative development might also cause the same unacceptable environmental impact.¹⁰

If new onshore Victorian gas displaces other gas, some or all of that other gas from existing ‘locked in’ infrastructure is likely to be burnt elsewhere, either in another state or overseas. Ignoring such emissions is disingenuous as where the gas is burned is irrelevant to its impact on climate change.

⁸ IPCC (2013) *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, <https://www.ipcc.ch/report/ar5/wg1/>

⁹ Victorian Gas Program (2020), Op.Cit. p.55

¹⁰ New South Wales Land and Environment Court (2019), *Gloucester Resources Limited v Minister for Planning*, S.545, <https://www.caselaw.nsw.gov.au/decision/5c59012ce4b02a5a800be47f>

Strangely, while finding new onshore gas mining in Victoria would have no impact on consumption, the VGP report also finds it would have no impact on wholesale gas prices. The latter finding has some justification on its own terms. Given that prices have escalated greatly even with massive increases in supply, it is clear prices in east coast gas markets have been predominantly determined by demand for exports, not levels of domestic supply. However, given the report finds no impact on price, from an economic perspective it is unclear how market substitution effects are assumed to occur.

Given the Victorian Government based its decision to allow onshore gas development on “the science” in this report, it is essential that the Victorian Gas Program explain why their estimate of emissions is a fraction of the combustion emissions implied by their own production estimates.

If the Government is relying on a report that claims the development would lead to no impact on gas consumption or prices, the Victorian Government should explain why it is worth proceeding with it.

The Victorian Government should also explain why it is considering onshore gas in isolation from alternatives, such as programs to accelerate electrification to reduce current gas demand and save money.