

13 October 2021

## Gas terminals vs reducing demand

Options for addressing Victoria's winter gas shortfall





General:

- There are two proposals for floating gas terminals in Geelong – technically they're called Floating Storage and Regasification Unit, or FSRU
- This is a photo of what one looks like. It would be a huge ship, permanently moored in the Bay. The ship itself would be 300 metres long, that's almost as long as Cunningham pier.
- Gas would be imported in huge tanker ships, also about 300 metres long.
- The gas is imported at minus 160 degrees. To reheat the gas, the FSRU sucks in sea water. Chlorine is added to kill all life so it doesn't foul the pipes. This chlorinated wastewater is released back into the bay – hundreds of millions of litres per day
- Huge environmental impacts and the Victorian

government recently rejected AGL's plan for a similar gas import terminal in Westernport Bay due to 'unacceptable risks' on wetlands

- There are two proposals – Viva Energy in Corio and Vopak near Avalon
- Question: why import gas to Victoria?

Further notes if questions:

Vopak:

Offshore facilities in Avalon

Pipelines would go under Melbourne Water

Aims to have first imports after 2024

Hopes to submit a proposal to Vic in the ¾ of 2021

Capacity: Up to 50 LNG cargoes a year

Open access to LNG suppliers and gas buyers model

Viva Energy:

Adjacent to Geelong Refinery and Refinery pier

Total pipeline length around 6.5KM

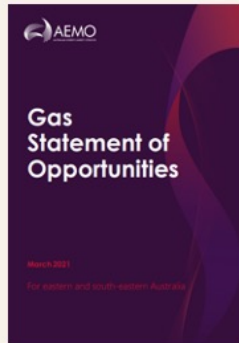
Aims to make a FID by 2024

Would deliver up to 140 PJ per year

Plans to operate in an open loop mode

This project is currently undergoing an EES process.

## Why? The Vic 'gas shortfall'



Bass Strait gas fields declining

But new gas terminal proposed at Port Kembla in NSW

Means gas 'shortfall' deferred to at least 2026 or even 2029 with minor upgrades

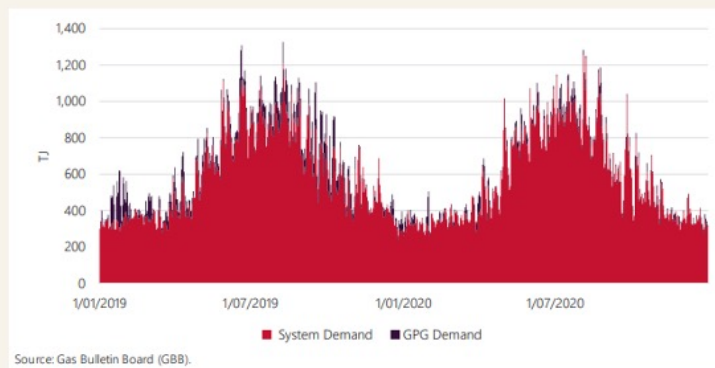
- All of these proposals to create gas import terminals have a single justification: a supposed 'gas shortfall' in Victoria.
- Essentially, the legacy gas fields in Bass Strait are depleting. Australia is actually the world's largest exporter of gas, but a lot of it is produced in the north of the country and then sent overseas through long-term contracts. Meanwhile Victoria has a high demand for gas during winter.
- For a few years now, Australian Energy Market Operator, AEMO, has forecast a gas shortfall in Victoria. Their most recent report forecast a gas shortfall in Victoria by 2026 – it was pushed back because another gas terminal has already been approved in NSW.
- So essentially we've got 5 years to do something about gas before this shortfall hits.

### Rai's notes:

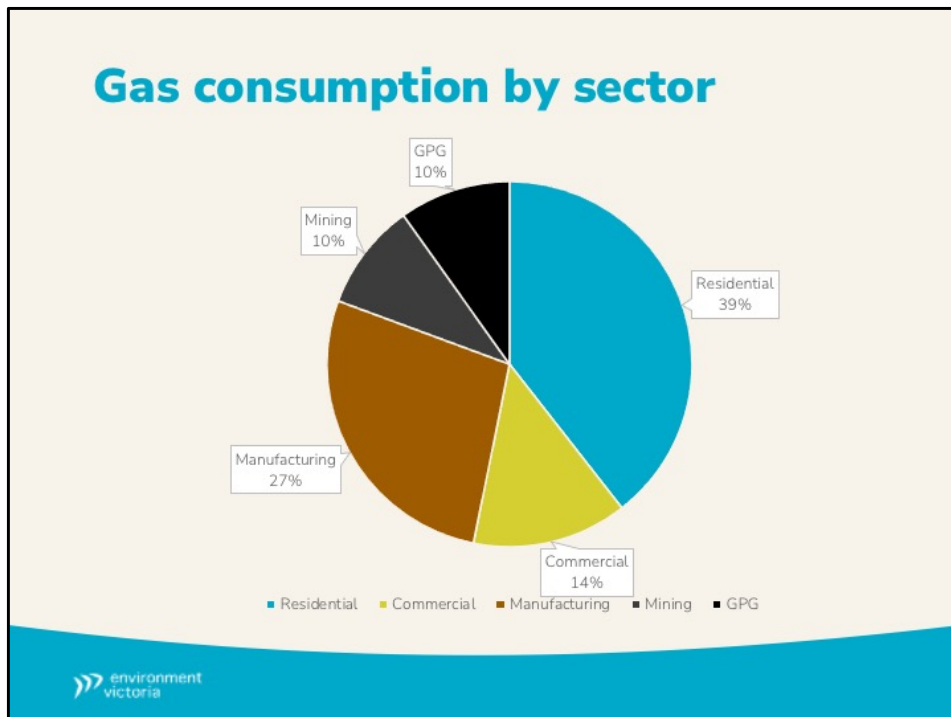
The main reason behind the pressure to open new sources of gas supply in Victoria is the rapid decrease of supply sources in Victoria, legacy gas fields in the Bass coast are depleting even faster than previously reported (without Port Kembla the projected shortfall would have happen by winter 2023 instead of 2024). But thanks to Port Kembla there will be enough gas in Victoria until 2026.

This decrease in production has been foreseen for a while but just recently the Vict Govt has started seen energy efficiency and electrification as a way to increase energy security.

## The challenge is cold winter days



- So what is a 'gas shortfall'? Let's dig into the data.
- Something important to understand is that when we talk about shortfalls we are only talking about cold winter days (when gas consumption would peak in Victoria).
- Victorian gas demand is extremely seasonal due to the high use of gas heaters. Gas consumption in winter is around 3 times that of summer. This chart on screen shows gas use peaking during each winter.



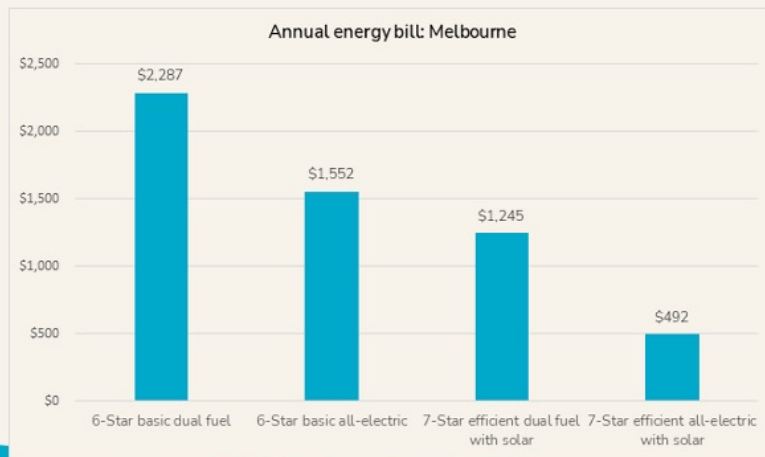
- Let's look into it some more. A lot of people hear about gas and think of gas-fired power stations and the electricity grid.
- But actually, in Victoria gas-fired power is only 10% of gas consumption – the black wedge of the pie chart. Residential and commercial consumers use more than 50% of total gas consumption – the blue and green wedges. This is largely used for space heating.
- So in other words, we're burning a lot of gas to heat homes and businesses, and to heat hot water.
- This is what we can target to avoid a gas shortfall. This gas consumption could be phased out effectively and by doing so we would eliminate the pressure to find new sources of gas supply. It also effectively targets gas use in winter, reducing peak demand, which is the biggest problem.

## Don't trust those who believe the transition is impossible

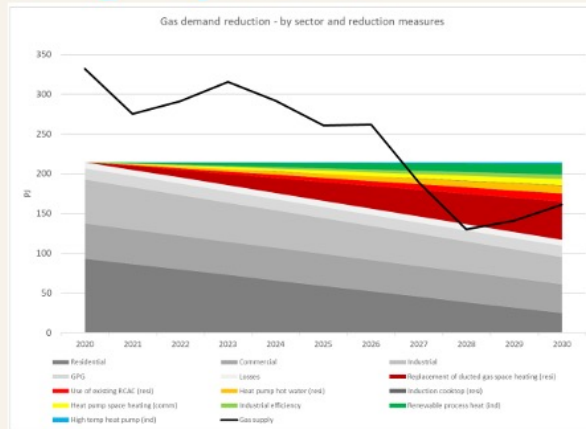
	2017	2018	2019	2020	2021	2022	2023	2024	2025
DTS system consumption	201	192	196	201	197	195	192	189	187
DTS GPG consumption	15	10	20	7	3	2	2	2	1
Total DTS consumption	216	202	216	208	200	197	194	191	188
Non-DTS consumption	23	16	16	12	7	5	5	4	3
Total Victorian consumption	239	218	232	220	207	202	199	196	192



## The solution is not only good for the planet, is also better for our pockets



# And it could be far faster with the right policies.



## Reducing gas demand is a better alternative



**Demand is already dropping.** AEMO says existing policies will reduce gas consumption by 12% over the next 5 years, and peak demand will reduce by 40 TJ/day by 2030



**Vic gas heater rebate program** would reduce gas consumption enough to avoid most common winter shortfall in 2024



**Switching more households from gas to electric** would drastically reduce our gas consumption. We can even avoid shortfall created by the worst cold snaps (1 in 20 year events).

- In summary, Environment Victoria believes the best way to solve this problem isn't increasing gas supply, but reducing gas demand.
- Gas demand is already dropping – AEMO says existing policies will reduce gas consumption by 12% over the next 5 years. We just need to encourage this to happen faster.
- Here's an example of just one good policy – The Victorian government has announced a program to replace 250,000 residential heaters over the next four years, among a range of other energy efficiency and electrification policies.

- Our calculations show this heater replacement program alone will reduce gas consumption by 33-34 TJ/d – enough to avoid the most common winter gas shortfalls (1-in-2-year events) in 2024
- There are other opportunities too. Victoria has 600,000 ducted gas heating units that are more than 20 years old. Incentives to replace these with efficient electric heating would decrease our gas consumption, and when combined with other energy efficiency measures we can drastically reduce gas consumption and avoid a gas shortfall even in rare cold snaps (1 in 20 year events).
- Ultimately, if we reduce gas demand enough then we don't need new supply projects like these terminals in Geelong