

Submission to the Viva Energy Gas Terminal Project EES Draft Scoping Requirements

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Healthy planet, healthy people

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<https://engage.vic.gov.au/viva-energy-gas-terminal-project-ees-draft-scoping-requirements>

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Doctors for the Environment Australia (DEA) is an independent, self-funded, non-government organisation of medical doctors in all Australian States and Territories. Our members work across all specialties in community, hospital, and private practices to prevent and address the diseases - local, national and global - caused by damage to our natural environment. We are a public health voice in the sphere of environmental health with a primary focus on the harms to health from pollution and climate change.

Doctors for the Environment welcomes the opportunity to comment on the Draft EES Scoping Requirements for the proposed Viva Energy Gas Import Terminal at the Geelong Refinery and Refinery Pier in the City of Greater Geelong.

Description of project

The project comprises dredging of a channel to accommodate large gas tankers, extension to the existing Refinery Pier to facilitate the continuous mooring of a floating storage and regasification unit (FSRU), the construction of nitrogen and odorant injection facilities and construction of a 6.5km pipeline from the gas import terminal to Lara.

The project life is estimated to be a minimum of 20 years.

The key approvals required under Victorian legislation are a Development Licence under the *Environment Protection Act 2017*, a pipeline licence under the *Pipelines Act 2005*, an approved cultural heritage management plan (CHMP) under the *Aboriginal Heritage Act 2006* and consents required under the *Marine and Coastal Act 2018*.

Doctors for the Environment proposes that another key requirement is that the project is in accordance with Victoria's recently announced RETs which has set Victoria's RET at 40% by 2025 and 50% by 2030 under the *Renewable Energy (Jobs and Investment) Act 2017 (Vic)*.¹

¹ Victoria's renewable energy targets. April 2021. <https://www.energy.vic.gov.au/renewable-energy/victorias-renewable-energy-targets>

Further recommendations for the scoping requirements of the Viva Energy EES

- More comprehensive and detailed consideration and quantification of the greenhouse gas (GHG) emissions associated with the entire life cycle of the project.
- The consideration of both upstream and downstream emissions associated with imported gas, and comparison with project alternatives.
- Fully consider the Victorian government’s recent commitment to new Renewable Energy Targets (RETs), including the quantification of analysis of the GHG emissions associated with two decades future gas supply to the Victorian market.
- The need for project approval under the *Renewable Energy (Jobs and Investment) Act 2017 (Vic)*.
- That the fugitive emissions associated with the project be estimated and evaluated against alternatives.
- A full explanation of the rationale of the project when alternatives are available, bearing in mind that Victoria’s gas requirements are likely to diminish with time as RETs are met.
- Full consideration of the fiscal costs and other tolls of externalities – costs borne by communities – resulting from health costs of indoor gas use, other health impacts, environmental loss, climate impacts, and loss of social amenity.

Matters to be addressed by the EES

4.6 Waste management

Greenhouse Gas emissions

Draft - Page 6 – “The EES is also to incorporate an integrated assessment of the broader environmental effects of greenhouse gas (GHG) emissions from FSRU operation.”

Draft - Page 21 – Evaluation objective: “... accounting for direct and indirect greenhouse gas emissions” and “Potential for emissions of GHGs to result from the project, including embedded emissions due to construction materials and processes as well as direct and indirect emissions from construction and operation.”

Doctors for the Environment believes that the scoping requirements for the EES inadequately outline the process for a full evaluation of the GHG emissions associated with the project.

The EES must include the impact of this project's carbon footprint over its entire life cycle, including both upstream and downstream emissions. The EES should consider the GHG emissions associated with the liquefaction of fossil gas, transport and shipping, as well as its regasification at the FSRU. The EES should be required to identify where the imported fossil gas may come from, its life cycle profile, and its cost and impact on national and international emissions. All carbon emissions contribute to global warming, regardless of where the fossil fuels are mined or burned. Shipping fossil gas as LNG significantly increases its GHG footprint. Cooling gas to the very low temperatures needed to turn it into a liquid (LNG) requires large energy inputs. Overall, using fossil gas as LNG adds around 25% more CO₂ emissions, on top of those from burning the gas for energy.^{2,3}

The EES should give full consideration of, and accounting of GHG production for materials and energy used in the construction and maintenance of the project, including road, jetty and pipeline construction and upgrades, channel dredging, the project's operation and its subsequent decommissioning and rehabilitation.

Importantly, the EES does not include downstream emissions associated with the consumption of fossil gas within Victoria. By discounting downstream emissions, the EES is grossly underestimating the impact of the project. The EES must consider the carbon costs of 'locking in' a Victorian gas supply for the lifetime of the project (estimated at more than 20 years). Estimates of the emissions associated with the commercial and residential end use of fossil gas should be included by the EES in order to evaluate the impact on Victorian and national GHG emissions and give valid comparison with alternative scenarios such as reducing domestic demand for gas, and increasing the use of electricity from low-carbon sources or green hydrogen for industry.

The import of fossil gas into Victoria is contrary to Victoria's updated Emission Reduction Targets and current energy policy. In April 2021, the Victorian Government committed to Victorian renewable energy generation targets of 50% by 2030 and net zero emissions by 2050.⁴ Evidence is accruing that even these targets are not sufficiently ambitious to achieve

² AEMO Projections of gas and electricity used in LNG. 19 Dec 2017. https://www.aemo.com.au/-/media/Files/Gas/National_Planning_and_Forecasting/GSOO/2018/Projections-of-Gas-and-Electricity-Used-in-LNG-2017-Final-Report-19--12-17.pdf

³ Pavlenko, N., et al. "The climate implications of using LNG as a marine fuel." International Council on Clean Transportation. Working Paper 2020-02. https://theicct.org/sites/default/files/publications/Climate_implications_LNG_marinefuel_01282020.pdf

⁴ Victorian State Government. Victoria's Renewable Energy Targets April 2021. <https://www.energy.vic.gov.au/renewable-energy/victorias-renewable-energy-targets>

stabilization of global warming and climate change.⁵ Expanding fossil gas developments and facilitating ongoing gas use, is counterproductive and counterintuitive to Victoria's goal of significantly reducing GHG emissions.

The scoping requirements for the EES does not mention fugitive emissions or outline any process for monitoring or estimating fugitive emissions associated with the project. Doctors for the Environment considers this a serious omission. Fugitive emissions are the direct loss of methane gas into the atmosphere through leakages, spills, accidents, normal wear and tear and improperly constructed infrastructure at all stages of extraction, production, processing, transport, storage, de- and re-gasification and distribution of gas.⁶ Monitoring of fugitive methane emissions through of all these steps is difficult and the problem cannot be fully quantified, so is often dismissed by the gas industry. Globally methane emissions have soared⁷, and in Australia fugitive emissions from oil and gas production are estimated to account for about 6.0% of GHG emissions.⁸ Because methane is a powerful GHG, having 86 times the climate forcing capacity of CO₂ over a 20-year time frame, the quantity and duration of fugitive methane emissions should be estimated by the EES.

The EES's full evaluation of the GHG emissions of the project should also include the potential significance of large-scale methane emitting accidents and leakages that are difficult to stop quickly, and the excess emissions from unexpected or emergency events that require venting of methane from either the pipeline or the FSRU.

Australia's per-capita GHG emissions are exceedingly high and second only to those of Saudi Arabia.⁹ To reach net-zero emissions by 2050 or earlier requires all business, industry, governments and communities to honour the scientific and ethical imperatives to reduce emissions as soon as possible. Many industries are now committing to markedly reducing fossil-fuel emissions and switching to ambitious renewable programs in order to fulfill their moral obligations.

⁵ <https://www.climatecouncil.org.au/wp-content/uploads/2021/04/aim-high-go-fast-why-emissions-must-plummet-climate-council-report.pdf>

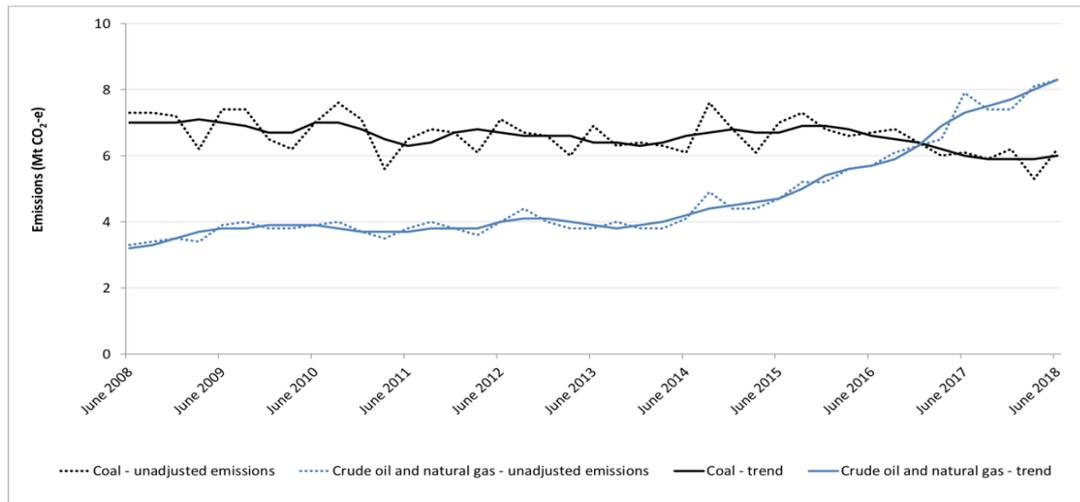
⁶ Moser C., Thaker N. and Lee-Ashley M. (2014) Reducing Methane Pollution. *Centre for American Progress*. Available at: <https://www.americanprogress.org/issues/green/reports/2014/10/06/98326/reducing-methane-pollution-from-fossil-fuel-production-on-americas-public-lands/>

⁷ <https://phys.org/news/2020-07-global-methane-emissions-soar-high.html>

⁸ CSIRO/GISERA Fugitive Emissions Factsheet <https://gisera.csiro.au/factsheet/fugitive-methane-emissions-factsheet/>

⁹ <https://worldpopulationreview.com/country-rankings/co2-emissions-by-country>

Figure 15: Fugitive emissions by quarterly, sub-sector, unadjusted and trend emissions, Australia, June 2008 to June 2018



Source: Department of the Environment and Energy

Quarterly Update of Australia’s National Greenhouse Gas Inventory: March 2018, Commonwealth of Australia 2018 ¹⁰

4.2 Biodiversity

Human health is indivisible from the health of the natural world. Healthy ecosystems are essential for the fundamentals of good health - access to clean water, clean air, nutritious food and a stable climate, and biodiversity is an essential requirement for healthy ecosystems. Projects that impact on ecological character and biodiversity of protected and sensitive environments have state and national significance.

Works associated with the project such as dredging, disposal of dredged material and marine discharges during operation have the potential for significant environmental effects and risk the ecology and habitat values of a nearby Ramsar site and the Western shoreline of Port Phillip (Draft Scoping Page 15). The scoping requirements detail “Likely effects” and the need to avoid, minimise or offset potential adverse effects on the environment and fauna and flora. However, the scoping requirements do not clarify how those potential risks will be assessed, who will be contracted to make those assessments and how assessments can be made when variables such as the composition of material from channel dredging is unknown. No risks can be fully mitigated or prevented, and emergent risks may lead to environmental damage at any stage of the project.

¹⁰ Australian Government National GHG Inventory March 2018 <https://www.industry.gov.au/data-and-publications/national-greenhouse-gas-inventory-march-2018>

All environmental risks, but especially the potential impacts on threatened and migratory species listed under the EPBC Act, Flora and Fauna Guarantee Act or DEWLP advisory lists, must be assessed against alternative or “no-project” scenarios. The EES needs to fully explain how those risks will be assessed and on what basis assumptions will be made about the degree of risk and the effectiveness of mitigation measures.

Health costs of indoor gas use

There is a growing body of evidence documenting health harms associated with indoor gas use.¹¹ All gas-burning appliances produce pollutants that can reduce indoor air quality, especially when the appliance is poorly maintained or where there is inadequate ventilation. A recent study showed that 12% of childhood asthma is associated with indoor gas use.¹² Other effects may include reduced lung function, respiratory tract infections, and changes in neurological development and behaviour. These health effects, which can have greater impact in low-income households, and disproportionately affect children and adolescents¹³, must be quantified and their impacts in terms of disability-adjusted life years considered by the EES. Alternative scenarios such as a transition to all-electric homes would lessen the health burden and reduce health costs. It is important to note that the health costs associated with ongoing indoor gas use are met by the community and the health care system, not the proponents of the project. Many health organisations, including Doctors for the Environment are recommending reforms to mandate non-gas appliances in all new homes, and the transition away from use of indoor gas appliances to improve health outcomes.

High impact accidents

The EES must clearly document all project risks. This should include addressing the implications, the management and responsibilities incurred from low-risk but high-impact methane-emitting accidents, oil spills, leakages, pipeline breaches, fires and marine accidents (collisions, rollovers and strandings) that would be of significant or catastrophic impact.

¹¹ DEA Factsheet Home Appliances and your Health. 2020 <https://www.dea.org.au/wp-content/uploads/2020/12/Home-gas-appliances-fact-sheet.pdf>

¹² Knibbs LD, Woldeyohannes S, Marks GB, Cowie CT. Damp housing, gas stoves, and the burden of childhood asthma in Australia. *Med J Aust* 2018;208(7):299-302, viewed 14 Jan 2020, <https://doi.org/10.5694/mja17.00469>

¹³ Climate Council. How gas is harming our health. 2021 <https://www.climatecouncil.org.au/resources/gas-habit-how-gas-harming-health/>

Such risks include those of severe weather events on the project's infrastructure, especially the FSRU and jetty and include appropriate modelling for storm tides, storm surges and severe heatwaves. Australia's warming climate is increasing the frequency and severity of extreme weather events. Globally, it is recognised that FSRUs and their associated infrastructure are susceptible to extreme weather. Gas import/export facilities in Asia and the Mediterranean are closing floating LNG terminals because of severe coastal weather making the operation of FSRUs too hazardous.^{14,15,16}

The project site is close to two schools and Geelong's northern suburbs, and prior planning of specific emergency strategies to deal with major accidents should be in place. The EES should also include clarity on the financial and environmental responsibility of dealing with a high-impact accident and its short-term and long-term consequences.

Similarly, the EES requires a full and thorough assessment and emergency planning for the impact of bushfires at or around the high-pressure gas pipeline and gas import facility.

Summary

Doctors for the Environment's overarching concern with this project is the clear evidence of the substantial and rising greenhouse gas footprint of Australia's expanding gas industry that threatens efforts to urgently reduce emissions and mitigate global warming. All GHG emissions count and because Australia's per-capita emissions are exceedingly high, ambitious approaches incorporating renewables over fossil-fuels must prevail. In addition, important ecosystems are already under great threat from climate change impacts and need greater protections rather than increased risks from development.

¹⁴ Plante L, Browning J, Aitken G, Inman M, Nace T. Gas Bubble: Tracking Global LNG Infrastructure. pp14 Global Energy Monitor Report July 2020. <https://globallnghub.com/articles/gas-bubble-tracking-global-lng-infrastructure>

¹⁵ <https://tankterminals.com/news/no-more-floating-lng-terminals/>

¹⁶ <https://timesofmalta.com/articles/view/no-gas-power-plant-during-storms.628757>