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Felicity Sands
Manager, Gas Reform | Energy Strategy
Department of Environment, Land, Water and Planning
8 Nicholson St,
East Melbourne, VIC 3002

2 August 2021

Dear Ms Sands

AER Submission: Victoria's Gas Substitution Roadmap Consultation Paper

The Australian Energy Regulator (AER) welcomes the opportunity to provide feedback to Victoria's Gas Substitution Roadmap consultation paper. Our submission focuses on the AER's role in the economic regulation of gas pipelines. We welcome the process and the extensive analysis and consultation being undertaken.

The AER and its role in gas regulation

The AER is the economic regulator of covered natural gas pipelines in eastern Australia. This includes the Victorian Transmission System (owned by APA) and three gas distribution networks in Victoria (AGN, Multinet and AusNet Services).

Covered pipeline service providers must submit an access arrangement proposal to the AER for approval. This sets terms and conditions for customer access to pipelines, including access (usage) prices. Access prices are set so as to allow the service provider to recover the efficient cost of providing pipeline services.

In deciding whether to approve or vary an access arrangement proposal (and the access price), we consider a number of factors relevant to the efficient cost, including:

- costs associated with capital investments, including the rate of return on the assets and the depreciation of the assets through time
- projected demand for natural gas, which drives capital expenditure to augment the system and accommodate new customer connections, as well as playing a role in determining access prices
- the age of existing infrastructure and likelihood of asset replacement
- operating and maintenance costs
- network reliability and safety standards, which influence the amount of capital expenditure or operating expenditure required to provide pipeline services.

Victoria's Gas Substitution Roadmap, and the Victorian Government's decarbonisation policies, will help inform our decisions in upcoming access arrangement reviews. In

particular, the future utilisation of gas pipelines, the useful life of assets, and the need for investment in new assets are likely to be influenced by a transition away from natural gas.

Potential impact of substitution on gas pipeline access prices

The price charged to access a gas pipeline is dependent on the efficient cost of providing the service. It is also dependent on the level of gas demand, as gas pipelines have high fixed costs, and greater throughput leads to lower prices per unit of gas delivered. Changing consumer preferences, government policies and initiatives, as well as emerging technologies in alternative energy sources introduce a high degree of uncertainty in future gas demand. Demand uncertainty presents particular challenges in determining the efficient costs of providing pipeline services into the future.

The cost of investing in pipeline assets, which have long useful lives, is shared between current and future gas users. This is done by depreciating the assets over their useful (economic) lives, and apportioning the depreciation cost over time. The longer an asset stays in use, the lower the depreciation cost born by customers each year. Uncertain future utilisation of the pipelines may put pressure on prices by shortening the economic lives of network investments.

It also has consequences for the amount of new investment undertaken. For example, demand uncertainty may warrant deferral of investment in long lived assets with increased operating and maintenance spending to meet safety and reliability targets.

Case study: Evoenergy

In response to the ACT Government's policy decision to phase out gas connections in the ACT and promote electric alternatives to gas, we accepted Evoenergy's proposal to shorten the asset lives for its new pipeline assets in its 2021-26 access arrangement. As noted earlier, shortening asset lives has the effect of increasing the depreciation cost in any given year, which, other things being equal, will increase the pipeline's efficient cost and access prices. This decision was taken to reduce the risk that these new assets may become stranded (that is, they are no longer capable of making an economic return, despite not being fully depreciated) and to protect customers from significant price increases resulting from a declining customer base in the future. In particular, we were concerned about intergenerational equity for gas consumers, as well as the lesser ability of vulnerable consumers to switch away from gas.

Falling gas demand and our decision to allow accelerated depreciation of gas assets has put pressure on gas prices in the ACT. In Evoenergy's case, operational costs and asset maintenance costs will not fall in line with demand, leaving fewer customers to share the costs. While there are some offsets from lower investment requirements, the overall impact of our Evoenergy decision is estimated to increase residential and small business consumer bills by 3.2 per cent and 3.5 per cent respectively over five years.

As customers switch from gas to electricity, significant new investment in Evoenergy's electricity network is required. The extent of these investments, and the extent of offsetting downward pressure on prices from increased electricity demand is not yet clear. Overall though there is a risk that the switch from gas to electricity will put pressure on both gas and electricity prices. Further, the pace of the transfer of gas demand to electricity creates reliability risk for the electricity network if not carefully managed.

AER's future of gas pipeline regulation work program

We are currently undertaking an internal review of the issues arising from the uncertainty in long-term gas demand within the economic regulatory context and we are considering the

toolkit we have to manage this uncertainty. A key objective of our review is to seek stakeholder feedback on the adjustments that we need to make to our regulatory decisions and/or to the regulatory framework to serve the long-term interest of gas consumers in light of uncertainty. We intend to publish an issues paper for public consultation in the fourth quarter of 2021.

We provide some further comments on the specific transition pathways identified in the Victoria's Gas Substitution Roadmap consultation paper in the Appendix. For further



Yours sincerely

A handwritten signature in black ink that reads "Jim Cox".

Jim Cox
Deputy Chair
Australian Energy Regulator

Sent by email on 02.08.2021

Appendix: The AER's comments in response to the consultation paper

We provide the following comments on some of the key transition pathways and issues identified in the Victoria's Gas Substitution Roadmap consultation paper.

Improving energy efficiency

Improving energy efficiency is generally seen as a 'no regrets' action by governments to reduce natural gas use. We take governments' initiatives to promote energy efficiency into account in gas demand forecast to determine prices. We need evidence and correct modelling of initiative uptake so that gas prices can be set at the correct level.

Electrification of gas demand

We consider the key risks associated with this transition pathway are the under-utilisation of gas networks earlier than necessary and the increasing upward pressure on gas and electricity prices.

The pace of the transfer of gas demand to electricity creates reliability risk for the electricity network if not carefully managed. Other developments such as the uptake of electric vehicles and hydrogen production could potentially compound the problem and add further stress to the electricity network.

If the transition from gas to electricity happens too quickly, there may be over-investments in the electricity network. This is because distributed energy resources have the potential to meet the additional demand from customers who switch from gas to electricity, if they become more cost effective and accessible over this transition period. There is also a risk that prevalent use of distributed energy resources may lead to under-utilisation of the electricity network in the future as well.

The potential of sustainable gas

The future utility of gas networks may depend upon the commercial viability of sustainable gases such as renewable hydrogen and biogas. These technologies appear to face a number of challenges to be cost competitive with existing technologies that can already substitute reticulated natural gas, such as distributed energy resources or electricity.

Also, given these gases could be produced at sources close to demand and may not require transportation over long distances, the utility of future gas networks remains highly uncertain, particularly for transmission gas networks.

If natural gas was to be replaced by renewable hydrogen, both gas networks and customers would need to make investments to replace their assets to be compatible with hydrogen. These additional costs may add upward pressure on sustainable gas prices, making them less attractive than other energy sources.

The commercial viability of sustainable gases will also depend on the level of existing and future gas demand. For example, if too many customers have already transitioned to full electrification by the time sustainable gases become available, it may be too late or too costly to remodel the gas networks to reticulate sustainable gases without the critical mass of customers.

The role for gas-fired power generation in the near to medium future

Given the weather-dependent nature of solar and wind power generation, gas-fired power generation will likely to continue to have a role in filling supply gaps and maintaining electricity reliability.

While gas powered generation output has reduced in recent years, it plays an increasingly important role in managing the variability of output from weather-dependant wind and solar plant. In the past, gas powered generation's critical role was to meet maximum summer demand, but it increasingly supports the market in winter when solar PV generation is lower and coal fired capacity tends to be withdrawn from the market for maintenance.¹

Underground gas storage is also a key part of the Victorian gas supply network and supports the reliability of electricity network. The costs required to install large-scale batteries or energy storage resources to deliver the same energy storage capacity as existing gas storage are likely to be significant. Until the cost of emerging battery technology decreases, gas-fired generation, coupled with gas storage is likely to have a competitive advantage in providing firming capacity.

Maintaining the reliability, affordability and safety of gas supply

There is a tension between ensuring reliability and safety of gas supply in the short term and ensuring gas affordability in the long term. New gas infrastructure investments and ongoing asset maintenance are necessary to ensure the reliability and safety of gas supply in the short term. However, this adds to the regulatory asset bases of gas network businesses, the cost of which will be recovered across a declining base of customers, pushing gas prices up for those customers. As alternative energy sources become more prevalent and cost-effective, the price elasticity of gas demand will increase, making consumers more inclined to leave the gas network when prices go up, which exacerbates the affordability of gas supply.

Managing uncertainty in the transition

In making our regulatory decisions for gas network businesses, the AER will need to balance the needs of current and future consumers. This will require continuing assessment as community views, government policies and the cost of alternative technologies continue to develop. In particular we are concerned to avoid a situation where vulnerable or captive customers who may not be able to switch from gas face sharply increasing gas prices while other customers leave the gas networks.

The rate at which gas customers leave the gas networks and the location of these customers have implications for the effective and efficient management of the networks, and therefore the costs to shut down or maintain the networks. Absent any coordination between governments, regulators, network businesses and customers to facilitate an orderly transition from natural gas to alternative energy sources, gas access prices would be subject to high uncertainty and potential volatility.

¹ AEMO, Gas statement of opportunities 2021, p. 37.