



APA Submission

Better integrating gas into the ISP rule change

July 2024





Ms Anna Collyer
Chair
Australian Energy Market Commission

Lodged online – project code ERC0395

23 July 2024

RE: APA Submission to Enhancing the Integrated System Plan (ISP) to support the energy transition consultation

Dear Ms Collyer,

Thank you for the opportunity to comment on the Enhancing ISP to support the energy transition Consultation Paper (Consultation Paper). We have appreciated the engagement the Commission has undertaken to date and look forward to further engagement on these important issues.

APA is an ASX listed owner, operator, and developer of energy infrastructure assets across Australia. Through a diverse portfolio of assets, we provide energy to customers in every state and territory. As well as an extensive network of natural gas pipelines, we own or have interests in gas storage and generation facilities, electricity transmission networks, and 692 MW of renewable generation and battery storage infrastructure.

We recognise that the proposed rule change on better integrating gas into the ISP provides more opportunities for AEMO to model, and plan for, the least cost pathway to net zero. Gas infrastructure and gas-powered generation (GPG) have a vital role in the energy transition. It is therefore critical that the ISP accurately reflects how much capacity and investment the market needs across the gas value chain throughout the transition.

We strongly encourage the Commission to reconsider characterising gas market investments as an 'alternative' or 'tradeoff' for electrification and other storage solutions. Gas and electricity markets are closely connected, especially given GPG will provide an essential backup to renewable energy as we head towards a net zero economy. We are of the view AEMO should not be responsible for picking one set of projects, or energy solution, over the other in the ISP. The market should be left to decide the best way for Australia to reach net zero at least cost.

Our submission below provides responses to the issues raised in the Consultation Paper and we would welcome the opportunity to discuss our views in more detail. Should you have any questions or queries, please contact John Skinner on 02 9693 0009 or john.skinner2@apa.com.au.

Regards,

A handwritten signature in black ink, appearing to read 'Beth Griggs'.

Beth Griggs
General Manager Economic Regulatory and External Policy

1 Submission

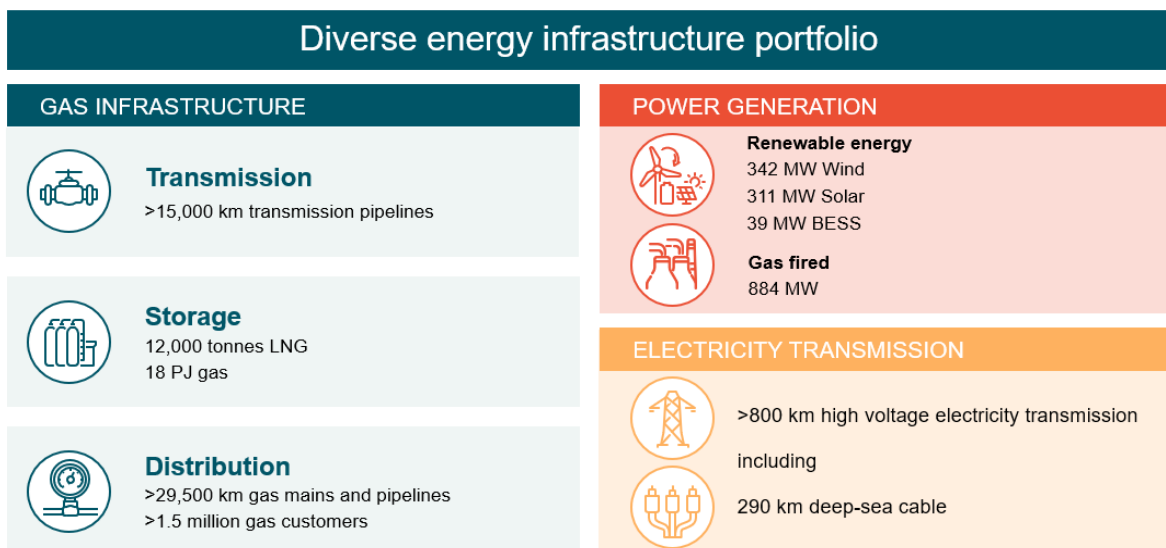
Key points

- Gas infrastructure and GPG have a vital role in the energy transition.
- AEMO’s ‘gas development projections’ should enable the market to decide the best outcomes, not dictate them.
- GPG forecasts in the ISP should be aligned with the Gas Statement of Opportunities (GSOO) to ensure greater accuracy, and timely information gathering from market participants.
- While we support information collected under the National Gas Rules (NGR) being included in the ISP, there must be some rigour around what information is collected and how AEMO can utilise this data.
- GPG should be included in a capacity mechanism to support the investment required.
- Gas and electricity markets are closely connected – one is not a ‘tradeoff’ for the other.

1.1 APA as a partner of choice in Australia’s energy transition

APA is a leading Australian Securities Exchange (ASX) listed energy infrastructure business. Consistent with our purpose to strengthen communities through responsible energy, our diverse portfolio of energy infrastructure delivers energy to customers in every Australian state and territory.

Figure 1: APA’s portfolio



Our 15,000 kilometres of natural gas pipelines connect sources of supply and markets across mainland Australia. We operate and maintain networks connecting 1.5 million Australian



homes and businesses to the benefits of natural gas. We also own or have interests in gas storage facilities and GPG.

We operate and have interests in 692 MW of renewable generation and battery storage infrastructure, while our high voltage electricity transmission assets connect Victoria with South Australia, New South Wales with Queensland and Tasmania with Victoria.

APA actively supports the transition to a lower carbon future. In August 2022, we published our inaugural Climate Transition Plan which outlines our commitments to support Australia's energy transition and pathway to achieve net zero operations emissions by 2050. In September 2023 we released our first Climate Report disclosing our progress against our Climate Transition Plan.

1.2 Gas infrastructure will continue to deliver energy where it's needed

This section addresses Question 1 in the Consultation Paper

In the east coast gas market, customer needs drive the amount, location and type of investment that takes place. This ensures that only prudent investment is undertaken and results in the efficient allocation of risk between parties. Investment only occurs based on what the market demands and for the cost and risk profile that the market accepts.

To date, the incremental expansion of existing infrastructure has been the most efficient, timely and lowest cost solution to ensure that gas is delivered when and where it is needed. Gas retailers coordinate with producers to ensure they secure gas supplies and with pipeline operators to ensure they can transport gas from gas fields to their end customers.

APA is the owner and operator of the East Coast Grid (ECG) – a broad gas pipeline system that spans across the east coast of Australia. The ECG will play a key role in accelerating the decarbonisation of the nation. The Future Gas Strategy, recently released by the Australian Government, supports this view.

The Future Gas Strategy recognised that the current infrastructure linking up northern supply to the southern markets is limited – and that more investment in pipelines and storage capacity is needed fast. This is because gas demand is likely to become increasingly 'peaky', particularly during periods of renewable energy 'drought'.

Since May 2021, APA has announced and delivered two expansions of the ECG. Over the last four years, APA has invested approximately \$700m in expanding the ECG and Victorian Transmission System ahead of actual demand.¹ These investments were undertaken for the specific purpose of ensuring there is sufficient capacity to manage increases in gas demand.

APA's ECG expansions have helped to shore up gas supply to NSW as Victorian gas supplies decline, allowing remaining Victorian production to be directed to meeting Victorian peak gas demand.

¹ APA, 'APA delivers capacity boost to the east coast gas grid' (Media Release, 3 July 2023) <<https://www.apa.com.au/globalassets/asx-releases/2023/apa-group---media-release---apa-delivers-capacity-boost-to-the-east-coast-gas-grid.pdf>>.

However, even with APA completing Stage 1 and 2 of our ECG expansion project pipeline, more is needed. AEMO forecasts this north-south transportation of gas will be increasingly relied on to meet southern gas demand, including for GPG.

1.3 'Gas development projections' can enable market opportunities, but should not dictate them

This section addresses Question 1 in the Consultation Paper

We agree that AEMO should not be responsible for developing an optimal development path for gas. History tells us that gas infrastructure has been efficiently delivered by industry and the contract carriage model is working well.

In contrast to the National Electricity Market (NEM), where investment is overseen by regulatory approvals and investment tests, investment in the east coast gas market (with the exception of the Declared Transmission System (DTS) in Victoria) is based on bilateral contracts between service providers and their customers. This is referred to as the contract carriage model. Customers choose the services and reliability best suited to their individual needs and service providers plan and deliver infrastructure based on those needs. This model has facilitated the efficient expansion of the east coast grid over the past 20 years (see section 1.2).

As stated in the Consultation Paper, the proposed definition of 'gas development projections' is as follows:

*A set of projects or developments that **span the gas value chain** (both in terms of gas demand, and **infrastructure investment to supply expected gas demand**) that AEMO considers most likely, consistent with the scenarios in the ISP.²*

At this stage, it is unclear how AEMO intends to interpret the above definition.

AEMO's GSOO already forecasts existing supply, infrastructure developments and constraints across the gas value chain. For instance the GSOO forecasts gas production with information provided by market participants, and commercial analysis of gas reserves and resources (e.g. 2P reserve and 2C resource categorisation), upstream developments, midstream infrastructure projects, storage and import terminal projects. In addition, the GSOO flags anticipated constraints based on location of supply and demand for gas. Therefore, it is unclear what additional analysis the proposed rule change would yield when it comes to forecasting gas supply, for the purpose of better understanding the 'infrastructure investment' considered 'most likely'.

Considering the above, any rule change must be limited to give effect to the following:

- AEMO should consider gas/GPG demand at greater granularity, to the extent it impacts factors relating to servicing energy supply under the ISP scenarios. This includes the impact of renewable droughts on gas Maximum Hourly Quantities (MHQ) and aggregated demand for GPG over extended periods, thereby understanding how this

² AEMC, 'Enhancing the Integrated System Plan to support the energy transition' (Consultation paper, 20 June 2024) 9.

might change the gas demand profile for GPG and essentially “stress testing” the system.

- AEMO’s ‘gas development projections’ will not entail a specific design of gas infrastructure projects considered most likely under different scenarios. This interpretation is informed by AEMO ruling out developing an optimal development path for gas infrastructure.
- Instead, developing ‘gas development projections’ has the aim of better understanding expected gas demand to realise the scale of investment required across the gas value chain. Following, the market will be expected to solve challenges in meeting any generation and infrastructure gaps, as it has successfully done via the contract carriage market.

The ISP is relied on by a wide range of stakeholders – including governments, market bodies, regulators, financiers, and market participants.

While the proposed definition of ‘gas development projections’ enables the above stakeholders to have better visibility over the important role of gas in the transition, it also risks dictating which projects the market should invest in and deliver. This is especially because governments may rely on AEMO’s ‘gas development projections’ to ‘pick winners’, as opposed to letting the market determine the best outcomes including the technology solutions and risk, market participants are prepared to take.

Dictating where the market should invest in the east coast gas market will distort the efficient allocation of risk between service providers and their customers, as it stands today. Similar to the case with fully regulated electricity assets, end customers would increasingly bear the risk associated with large infrastructure investment, particularly if that investment is being driven by parties other than the service providers and their customers. This may expose customers to additional risks and costs.

1.3.1 **Limiting further analysis on gas**

In addition, the Consultation Paper in question 1 proposes AEMO includes *further analysis of future gas demand and pricing*. Gas pricing is a market function dependent on supply and demand. There are many other factors that potentially impact pricing that are outside of Australia’s domestic control including demand in overseas markets, and geopolitical events.

Having AEMO conduct further analysis of gas pricing, beyond that already undertaken, could distort the market fundamentals or mislead market participants, particularly considering the time horizon of 20 years.

1.4 **GPG has, and will, ensure energy security and sufficient electricity supply**

The transition Australia faces in displacing ageing thermal generation with large volumes of renewable energy is not without its challenges. AEMO’s 2024 ISP confirms that renewables, firmed with storage and backed up by GPG is the lowest cost pathway to net zero.

As recent experience in South Australia has shown, periods of low wind and solar availability require significant volumes of long duration dispatchable resources to be available to support the reliability and security of the system. Without GPG providing long duration dispatchable

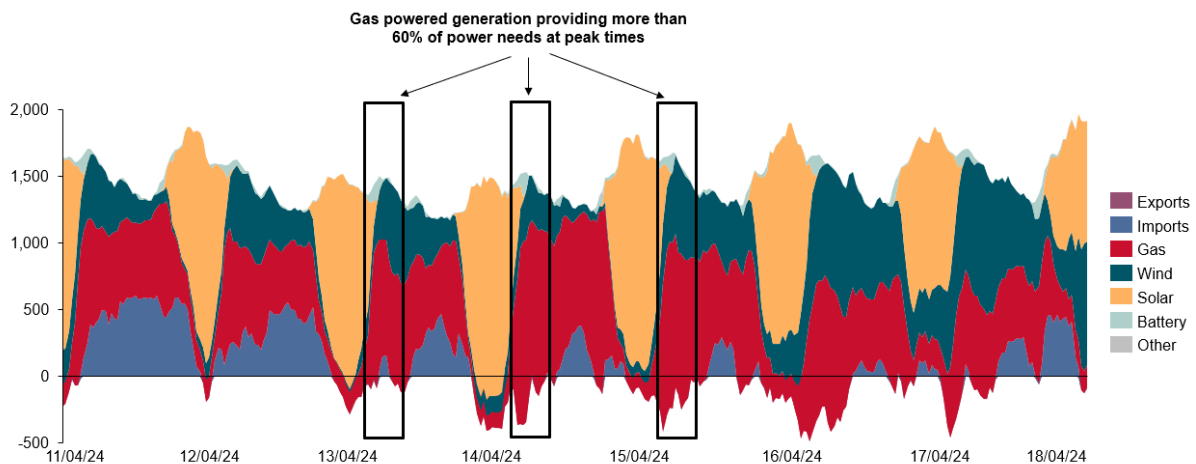
generation, South Australia is unlikely to have developed its renewable energy capacity to the extent that it has in such a short time frame.

Absent replacement dispatchable resources in other states, issues are likely to be experienced as coal power stations retire. The role of dispatchable generation such as GPG will become even more critical if there are delays in building the necessary electricity transmission and other forms of long duration storage to support renewable energy projects.

Despite the introduction of synchronous condensers [and short duration battery energy storage] in South Australia, GPG remains critical in ensuring sufficient electricity supply, including system strength and long duration firming, during periods of low wind and solar generation.

For example, Figure 2 shows that for three consecutive days in the middle of April there was little wind across South Australia. GPG stepped up to fill the gap, providing over 60 per cent of the state’s power needs at peak times when the sun went down and solar generation went to zero.

Figure 2: GPG supporting energy reliability in South Australia in April 2024



Source: OpenNEM

The gas network is a flexible, affordable, and safe store of energy, making it ideal to help support energy supply during extreme weather or periods of reduced supply.

Events in Queensland and Victoria over recent years have also demonstrated the flexibility and security offered by gas pipelines and GPG:

- **Flexibility and energy security**

On 25 May 2021, a failure of one of the generation units at Callide Power Station in Queensland caused 477,000 customers to lose power.

In mid-June 2021, Yallourn Power Station in Victoria reduced electricity generation to approximately 20% capacity due to the threat of floodwater from the Morwell River.

On 13 February 2024, Loy Yang A power station in Victoria tripped following the collapse of two electricity transmission towers.

Following these events, GPG stepped up to help provide crucial electricity generation in both Queensland and Victoria. The ability of gas turbines to quickly ramp up and provide long duration dispatchable generation shows they will be a critical part of the energy system for many years to come.

- **Addressing shortfalls through the gas network**

In mid-July 2021, the Longford gas plant in Victoria suffered a reduction in production due to technical problems, significantly reducing the amount of gas being supplied to the Victorian market. This led to AEMO issuing a notice of threat to system security.³

In response to this event, it was the flexibility of APA's 7,500 kilometres of interconnected gas transmission pipelines that form an East Coast Gas Grid that enabled APA to get gas from the north to the south, helping to rapidly address these shortfalls.

On this occasion, APA's customers were able to utilise their inventory position (known as 'Park') on the Moomba to Sydney Pipeline (MSP) to support supply to the markets through this event. Further additional capacity was available during this event should the market have required it. The recent MSP capacity upgrade has ensured additional flows from the MSP into southern markets can be accommodated should a similar issue arise.

The gas network is a flexible, affordable and safe store of energy, making it ideal to help support energy supply during extreme weather or periods of reduced supply. Locating GPG close to major demand centres also reduces exposure to electricity transmission capacity and frequency constraints often experienced by the overconcentration of renewable generation in common areas of the grid. This advantage may become critical if there are delays in building the necessary transmission investment to support renewable energy.

1.5 **Gas and electricity markets work together – one is not a 'tradeoff' for the other**

This section addresses Question 1 in the Consultation Paper

Gas and electricity forecasts should be better integrated to ensure more realistic outcomes and recognise the interaction between both markets. The ISP should encourage innovation and enable project proponents in both markets to find the most efficient location for their energy projects.

³ AER, 'AER gas weekly report – 20-26 June 2021' (Report, 14 July 2021) <<https://www.aer.gov.au/system/files/AER%20gas%20weekly%20report%20-%202020%20%E2%80%93%2026%20June%202021.pdf>>.

Therefore, APA supports gas forecasts being incorporated into the ISP however, the proposed rule change should be careful not to characterise the gas value chain as an ‘alternative’ or a ‘tradeoff’ for electrification, or for other storage solutions – see below extracts from the

*...” uncertainty around whether the NGR enables AEMO to use gas market information available to it in its gas role for the ISP. This uncertainty may be limiting **AEMO’s ability to comparatively analyse trade-offs of gas and electricity projects**, leading to less efficient investment decisions for the electricity sector.”*

Page 7, Consultation Paper

“The additional analysis will improve investment decisions and lead to better outcomes for electricity consumers by:

- *allowing AEMO to better consider whether **alternatives to gas investments (such as storage) might be more economically beneficial** for improving the ODP identified in the ISP...”*

Page 7, Consultation Paper

Consultation Paper.

As recognised by both the ISP and Future Gas Strategy, GPG will provide an essential backup to renewables in the transition to a net zero economy.

As above in section 1.3, the market should be left to decide what will best achieve net zero in a least cost and timely way.

1.6 Aligning the ISP and the GSOO ensures greater accuracy in gas supply and demand forecasting

This section addresses Questions 2(b), 3(b) and 4 in the Consultation Paper

Aligning the ISP with the GSOO will not only ensure there is greater accuracy in gas supply and demand forecasting, but will also ensure AEMO can obtain information from market participants efficiently.

APA has extensive experience preparing information required by AEMO for publishing in the GSOO. Given the significant resources, time and processes required in preparing this data, it is critical that AEMO considers the following:

1. Timelines in which the ISP and GSOO are prepared should be in sync, so that they are prepared in the same two-yearly periods.
 - a. This ensures that forecasts across the electricity and gas markets are aligned and cost imposts on industry are minimised.
 - b. We note that GSOO requests are currently provided by industry on 30 September each year. These requests are extensive and often take a month of work or more across the organisation to prepare, collate and assure. If the ISP timing is misaligned with this, there is risk of the data becoming out of date,

coupled with an increase in costs associated with updating out of date forecasts being incorporated in the ISP.

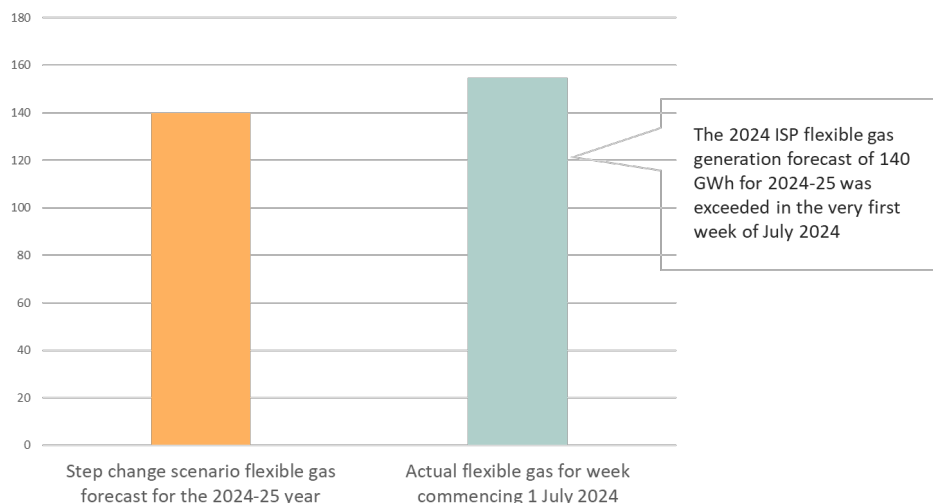
2. Data obtained (and the way AEMO requires it to be interpreted or reported) must be aligned so that market participants are not required to re-interpret the same data for the ISP and GSOO.
 - a. APA therefore supports what AEMO utilising the data it gathers under the NGR for the GSOO to be utilised in development of the ISP.

Greater accuracy in forecasting is essential. The current ISP under-estimates the importance of gas in the transition and consistently under forecasts the amount of GPG that is required in the NEM. Additionally, the ISP only looks at demand for GPG, not overall gas demand, which significantly underestimates future gas volumes.

Flexible gas in the ISP refers to both Open Cycle Gas Turbines (OCGT) and reciprocating gas. In contrast to Closed Cycle Gas Turbines (CCGT), OCGT and reciprocating gas have the ability to be quickly turned on an off to meet customer demand. As outlined in Section 14 above, these forms of GPG will be essential for maintaining a reliable energy system following the exit of coal.

We only need to look at the first few weeks of 2024-25 to see the importance of accurate GPG forecasts. The *step change* scenario of the 2024 ISP forecasts 140 GWh of flexible gas in 2024-25.⁴ As shown in Figure 3 below, this forecast was exceeded in just the first week of the 2024-25 financial year, with the week commencing 1 July 2024 seeing 154 GWh of flexible gas supplied in the NEM.⁵

Figure 3: Flexible gas generation: ISP forecasts v actuals



One option to better recognise the importance role of gas in the energy transition is to integrate AEMO’s gas forecasts from the Gas Statement of Opportunities (GSOO) into the ISP. AEMO publishes the GSOO on an annual basis and breaks down gas forecasts into individual sectors

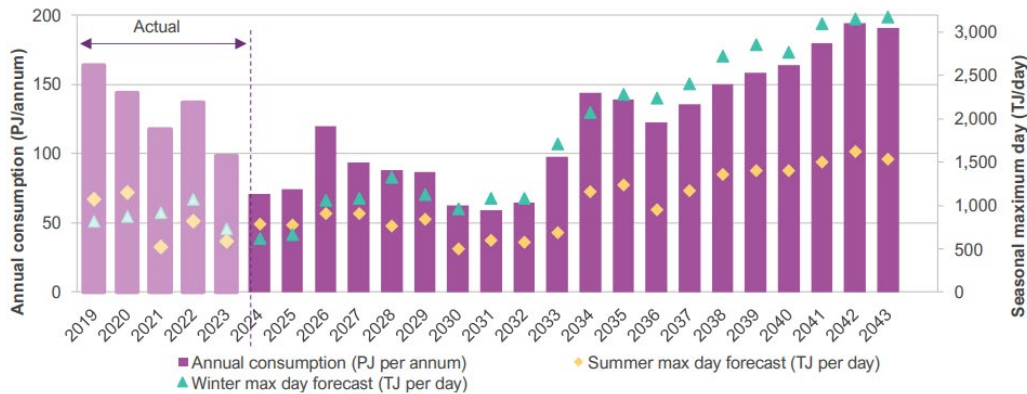
⁴ AEMO, '2024 ISP Results Workbook, CDP3 – Step Change least cost scenario' (Report, June 2024)

⁵ OpenNEM, NEM generation week commencing 1 July 2024 data.



to achieve greater forecast accuracy. Figure 21 from the 2024 GSOO, for example, shows actual and forecast gas consumption for GPG across the NEM.⁶

Figure 21 Actual and forecast NEM and Northern Territory gas generation annual consumption (PJ per year [PJ/y]) and seasonal maximum daily demand (TJ/d), Step Change scenario, 2019-43



While we recognise the final 2024 ISP has improved its mid-merit gas forecasts, more work is needed in reflecting GPG’s role in ensuring energy security in the NEM – this includes flexible gas forecasts. Better aligning gas forecasts from the GSOO with the ISP would go some way to achieve this.

1.7 Information obtained under the NGR should help develop the ISP, but not to the point it hinders market outcomes or competition

This section addresses Question 4 and 5 in the Consultation Paper

A wide range of information is already collected and analysed under the NGR – including but not limited to, gas capacity outlooks, actual gas flows, long term maintenance plans, utilisation, proposed gas and storage augmentations and investments. Where appropriate, and where the data cannot be de-identified, data aggregation or confidentiality requirements should be strictly observed.

The Commission may want to consider a threshold to publishing information, so that only information that does not lessen competition, or distort the bargaining power of contracting parties in the east coast gas market, can be published.

APA supports existing information provided under the NGR being utilised for the purpose of developing the ISP. This would include data as provided under:

- Part 10 and Part 18A information transparency
- Part 15 GSOO
- Part 19 Victorian Gas Planning Review (VGPR)
- Part 18 Gas Bulletin Board,
- Part 27 East Coast Gas System.

⁶ AEMO, 'Gas Statement of Opportunities' (Report, 21 March 2024) 39.

APA would propose however, that AEMO's powers are limited to formal information provision and not gas information it receives informally as part of its role as system operator of the Declared Transmission System (DTS). It's important to clarify that AEMO is the system operator of the DTS. However, operation of the gas systems, assets and investments outside of the DTS is owned and managed by facility operators and therefore data provision should be limited to formal requirements as outlined in the NGR.

In addition, APA supports AEMO utilising and analysing information it captures from managing the facilitated markets such as the Short Term Trading Market, Declared Wholesale Gas Market, Gas Supply Hub, Capacity Trading & Auction market.

As this information provided, analysed and represented in the GSOO and ISP is relied on by many different stakeholders, with the intent of influencing the future of energy infrastructure this ultimately impacts market participants' share prices, investments and market dynamics.

Due to this, it is critical that rigour and limits are specified in the NGR as to what information is collected and broadly how it is to be utilised by AEMO.

1.8 **Considering community sentiment in the ISP**

This section addresses Questions 11 and 12

For over 20 years APA has been operating in competitive markets, developing large scale infrastructure projects across Australia. Our experienced, in house team has first-hand experience managing the significant issues that arise when planning, building and operating linear infrastructure.

Our experience has shown that strengthening the role of social environment and community relationships is key to the success of a transmission project. Projects would more effectively contribute to long term and sustainable outcomes if communities and regions were better supported to develop clear priorities and long-term plans for development prior to commencement of a project within priority regions.

It is not clear how amending the ISP to require AEMO to consider known community concerns will improve community acceptance for ISP projects or help build a new national narrative on the importance of the energy transition. Such a requirement could create a real challenge for AEMO in developing the ISP.

1.9 **Government policy does not reflect the critical role of GPG**

It is well documented that the economics of thermal generation (coal and GPG) are under pressure due to the lower marginal cost of wind and solar generation and the reduced flexibility of such plant. This is leading to announcements about the closure of thermal assets:

- In February 2022 Origin submitted notice to AEMO for the potential early retirement (in 2025) of Eraring Power Station. Origin stated that this decision reflected the continuing, rapid transition of the National Electricity Market (NEM) as we move to cleaner sources of energy.⁷ The NSW has since negotiated an agreement with Origin to keep Eraring open for an additional two years.

⁷ Origin Energy, 'Origin proposes to accelerate exit from coal generation' (Media Release, 17 February 2022).

- In November 2022 AGL announced that it will close one of the ageing gas-fired Torrens Island power stations due to challenging economic conditions.⁸

As increasing volumes of renewable energy come online, the pressure on thermal power station operators is expected to increase. The completion of the NSW to South Australian interconnector (Project Energy Connect) and other interconnectors, which will increase the amount of energy that can be imported between jurisdictions, will compound the problem.

In contrast to thermal power (particularly coal fired), which is expected to retire from the system and not be replaced, OCGT peaking plants will become more important as coal power retires. As AEMO points out, this is because OCGT GPG will provide flexible and firm electricity supply, albeit less frequently than historically, but with greater importance to maintain reliability of the system.⁹

While governments are taking steps to incentivise the introduction of new renewable generation projects (such as through the Capacity Incentive Scheme), GPG is not being incentivised through similar mechanisms. This means that GPG operators will need to recover their costs and risk premium through high prices in the NEM. Often, this will involve bidding in capacity at the Market Price Cap (MPC), which as of 1 July 2022 is \$15,500/MWh. When the NEM dispatches capacity at the MPC, all capacity is dispatched at that price, regardless of whether the capacity is underwritten or not.

In its July 2022 Consultation Paper, the Energy Security Board (ESB) recognised that the NEM's energy only design and existing MPC may not be sufficient to encourage investment in enough generation to maintain a reliable system.¹⁰ The ESB's modelling suggested that the existing MPC is materially too low to give a high likelihood of meeting the current reliability standard.

Energy Ministers are encouraging more wind and solar through the Capacity Investment Scheme underwriting scheme. GPG however, will rely on the MPC to allow it to recover its costs. The dispatch profile of GPG is very uncertain, and many factors will impact on whether OCGT generators bid into the market, including:

- the weather
- outages at coal power stations
- the cost of gas
- delays in building electricity assets

It is unclear whether the MPC and energy only market will encourage sufficient new investment in GPG to maintain a reliable system as coal fired generation and their baseload generation exits the system. Consistent with the ESB's findings, Energy Ministers should consider

⁸ Sydney Morning Herald, 'AGL to close SA gas power plant in 2026 as renewables accelerate' (News Article, 24 November 2022).

⁹ AEMO, 'Gas Statement of Opportunities' (Report, March 2023) 23.

¹⁰ Energy Security Board, 'Capacity Mechanism, High-level Design Paper' (Report, June 2022) 13.



whether alternative arrangements, such as including GPG in the Capacity Investment Scheme or a new capacity mechanism, are required to ensure we maintain a reliable energy system.



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