

Summary Section			
Issue number	N/A		
Impacted jurisdiction(s)	Wholesale Gas Market		
Proponent	Jordan Daly	Company	AEMO
	jordan.daly@aemo.com.au		0422 572 874
Affected gas market(s)	GBB GSOO	Consultation process (ordinary or expedited)	Ordinary
Industry consultative forum(s) used	GWCF	Date industry consultative forum(s) consultation concluded	Friday, 12 August 2022
Short description of change(s)	Gas Transparency Measures		
Procedure(s) or	Gas Statement of Opportun	ities (GSOO) Procedures	
documentation impacted	Bulletin Board (BB) Procedu	res	
	BB Data Submission Guide		
	Guide to GBB Reports		
	BB Aggregation Methodolo		
	Application for Registration Guide	form – GBB and Part 24 and t	he supporting Application
	GBB Facility Registration For	m and the supporting Applica	ation Guide
Summary of the change(s)	The changes proposed in this Impact and Implementation Report (IIR) involve creating the Gas Statement of Opportunities (GSOO) Procedures and amending the Gas Bulletir Board (GBB) Procedures to take into account the National Gas Amendment (Marker Transparency) Rule 2022.		
IIR prepared by	Jordan Daly	Approved by	Meghan Bibby
Date IIR published	25 August 2022	Date consultation concludes	23 September 2022
Email address for responses	gwcf correspondence@aen	no.com.au	



## 1. DESCRIPTION OF ISSUE

### 1.1. Background

Energy Ministers endorsed the Gas Transparency Measures legislative and regulatory reform package in March 2020 and industry consultation on proposed amendments occurred across late 2020 and early 2021. The gas transparency measures address information gaps and asymmetries relating to gas and infrastructure prices, supply and availability of gas, gas demand, and infrastructure used to supply gas to end-markets. For further information, please see:

- The AEMC's page on <u>Gas rules made by the South Australian Minister</u>. The Rule itself is available <u>here</u>.
- The Department of Climate Change, Energy, the Environment and Water's page on <u>Regulatory amendments to increase transparency in the gas market</u>.

Key elements of the legislative and regulatory reform package include:

- The Natural Gas Services Bulletin Board (BB) provisions have been expanded to require information from new categories of reporting entities and expanded the information to be provided.
- The Gas Statement of Opportunities (GSOO) process has been strengthened to allow AEMO to conduct mandatory GSOO surveys and provide for AEMO to make new GSOO procedures to support the GSOO survey process.
- A new function for the Australian Energy Regulator (AER) to publish information about prices in gas markets and new powers to collect the information.
- A new function for the AER to monitor and review the performance of gas markets and provide advice on gas market performance to Ministers or AEMC.

The final rule made by the SA Energy Minister provides for a staggered implementation, with the rule taking full effect by 14 April 2023. AEMO has progressed system changes for extended BB rules which commence on 15 December 2022. This IIR marks the beginning of AEMO's consultation on revised procedures. For further information on the consultation and implementation timing, please see section 10 of this IIR.

## 1.2. Summary of the issue

Reviews carried out by the Australian Competition & Consumer Commission (ACCC), Gas Market Reform Group (GMRG) and Australian Energy Market Commission (AEMC) prior to the passing of the legislative and regulatory reform package identified a range of information gaps and asymmetries across the eastern and northern Australian gas markets that they consider are:

- hindering the ability of the market to respond efficiently to changing market conditions;
- impeding effective competition and the efficient trade of gas and infrastructure services; and
- resulting in inefficient decisions about consumption, production and the use of infrastructure services and longer-term investment decisions.





With regards to the BB, the 2020 GBB Biennial Report found that:

- Users agreed that the increase in the amount of information available (introduced in 2018) on the GBB has been beneficial, but the information can be hard to interpret.
- Many users have their own systems to bring in data and rarely use the GBB website.
- Two user types come to the GBB website
  - Ad hoc looking for a key piece of information such as LNG maintenance
  - Analytical those that are conducting a piece of analysis, e.g., consultants, on-sellers of information
- The layout of the data portal was considered poor and not user friendly.
- Two key pieces of information are used:
  - Historical gas flow data; and
  - Facility capacity outlook information (including LNG maintenance notices).
- The summary map was ranked highly in terms of features that users most liked; however, interrogation of data from the map was not seen as a high priority.
- Performance issues were slow to be addressed, but has improved.

### 1.3. Proposal

AEMO is proposing to update its Procedures, systems and associated documentation to take into account the National Gas Amendment (Market Transparency) Rule 2022. This is intended to address the following information deficiencies by adding reporting obligations for market participants.

Gas Market Segment	Information Deficiencies
Gas and infrastructure prices	Information on production costs, wholesale and retail gas prices.
Supply and availability of gas	Information on reserves and resources, contracted reserves, drilling activities and LNG imports.
Infrastructure used to supply gas to end-markets	Information on available capacity, infrastructure developments, compression service availability, and in relation LNG import facilities (if import terminals establish).
Demand	Gas use by LNG export facilities and large gas users.

AEMO is proposing changes to the Registration Procedures and the BB Procedures and to create the GSOO Procedures.



### 1.3.1. GSOO

AEMO's information-gathering powers have been strengthened as a result of the legislation.

The Northern Territory (NT) is proposed to be included in the GSOO, except NT facilities that only supply NT LNG trains are exempt.

The existing GSOO survey is now mandatory for GSOO reporting entities. This is reflected in the GSOO Procedures and GSOO survey approach.

### Content of the GSOO

The following elements of the GSOO will be affected by the GTM measures:

- Gas production and LNG import forecasts including contracting levels.
- Annual and peak day capacity of (and constraints affecting) gas processing plants or LNG import facilities.
- Production cost estimates.
- LNG exporters to report annual supply-demand balance.
- Information about wells drilled in the last year.
- Factors that may affect volume of gas supplied.

As the GSOO Procedures will only come into effect in March 2023, they will not be able to be used for the 2023 GSOO. AEMO proposes to conduct the first GSOO survey under these Procedures for the 2024 GSOO. AEMO will still be asking for information on a voluntary basis for the 2023 GSOO and requires additional time to develop the appropriate contacts for participants in the new NT GSOO jurisdiction, as well as forecasts for NT customers, and the relevant infrastructure. AEMO will discuss this with the AER outside of this consultation.

### 1.3.2. Registration & Reporting Changes

AEMO is proposing new registration requirements and associated activities as part of this consultation.

There are new registration categories:

- Large users (distribution and transmission) and their facilities
- Field operators and their fields
- Facility developers and their developments
- LNG facility operators and their facilities (import and export but excludes NT facilities)
- Transaction reporting (LNG shipments, LNG transactions, gas trades, capacity trades)

There are new Rules to allow for a simplified registration process and conditional registration.

All members of a facility operator groups are not required to be registered. The requirement is now on the responsible reporting entity for the group to inform AEMO of who is in the group, under NGR 158 (2).

The Procedures clarify that the registration of a participant is as a BB reporting entity rather than registering a facility (i.e. participants no longer as facility operator, pipeline operator, etc). It is



single registration as a BB reporting entity and then participants can register fields, facilities and developments. The BB reporting entity is responsible for providing the information to AEMO in accordance with the Rules and Procedures.

Other registration categories are BB shippers and BB reporting agent.

Registration processes and systems are proposed to be updated to identify reporting entities or other categories (rather than type of facility operator). A BB reporting agent will be able to submit information on behalf of certain entities.

Compression facilities are deemed to be registered, moving from transitional rules to Part 18.

The BB register will capture:

- These changes under NGR 147(1) & (2); and
- Exemption information under NGR 147(1A).

### Larger User Facilities

A person with operational control of a large user facility including GPG (nameplate rating >10TJ/day) will need to register and submit daily consumption data. This is estimated to be estimated 27 customer sites and 38 Gas Powered Generators.

As the retail market operator, AEMO is required to report the information for each large customer in the DWGM or STTM (likely to be around 6 large user facilities). Most large user data is already being reported on the GBB, provided by the pipeline operator. AEMO proposes to make the 'Large User Facility' a reportable category.

It is expected that 5 large users will be required to register and provide data themselves.

Reporting entities for large user facilities may apply for an exemption from the requirement to provide daily consumption data where the information is already provided by the pipeline operator, or the large user is the only recipient of gas at the delivery point.

Users that are exempt from providing consumption data must still provide confirmation of nameplate capacity via email to AEMO.

### LNG Export Facilities

3 Queensland LNG plants will be required to register and provide daily consumption data and capacity outlooks. There is a new requirement for the 3 Qld LNG plants to provide exported volumes of shipments and for AEMO to publish no later than 20 business days into the following month.

The NGR also impose a requirement to report details of LNG export transactions including FOB price of short-term supply agreements (<1 year) within 1 business day and AEMO to publish this after 20 business days. This information will be anonymised and aggregated.

2 Northern Territory LNG plants; Darwin and Ichthys continue to be exempt. LNG plants will be able to apply for an exemption from providing daily consumption data under NGR 190.

### Gas and Capacity Transactions

Gas sellers are to report price and key terms for gas trades & gas swaps under 12 months and over 1TJ within 1 business day. Existing capacity transactions being expanded to storage facilities, to be reported by capacity sellers.





AEMO proposes to update the submission guide to allow csv files to be emailed.

For gas swaps, both parties are counted as a seller and need to report according to NGR 190CB.

Gas Reserves

Gas field owners must report reserves annually. This includes 1P, 2P, 3P, 2C developed and undeveloped reserves.

Each field may have a different annual reporting date under NGR 171 (7).

Information on gas fields must be reported under NGR 171A. Joint venture partners can report jointly if jointly marketing gas.

Fields that exclusively supply exempt NT LNG facilities are exempt.

Facility Developers

Facility developers are required to report details of proposed facility development projects that will have a nameplate rating when commissioned above 10 TJ/day.

### 1.3.3. BB Changes

There will be up to 20 new submission and report types for the BB made up of around new 80 data points.

There will be new data submissions and reports on the following areas:

- Gas, LNG and Infrastructure prices
   Short term gas swaps, Gas supply agreements, LNG export transactions, secondary storage transactions.
- Supply and availability of gas Producers to report on gas reserve information. LNG import facilities to report on storage and gas supply.
- Demand for gas Large users and LNG exports to report on daily flow data. This will include AEMO providing data, as the retail market operator, on behalf of Large users.
- Infrastructure
   Facility developments to be reported. Extension and introduction of uncontracted capacity
   outlooks for some facilities. Materiality threshold changed.

AEMO to report GSH capacity and commodity trades on the GBB.

For the specific proposed Procedure changes, please see Attachments B-F.

## 1.4. Draft IIR

In accordance with the Approved Process Under Rule 135EC of the NGR, AEMO circulated a drafted IIR that put forward changes to the Procedures in Attachments B-F to the GWCF on 27 July 2022. Registered participants and interested stakeholders were invited to make submissions which closed on 12 August 2022.

AEMO received 7 submissions, one of which was confidential. The other submissions were from APA, APGA, Arrow Energy, Cooper Energy, Epic Energy and Jemena. None of the submissions



objected to the proposal and they each made several additional suggestions for the provision of information to the market. These submissions and AEMO's response to it are summarised in Section 8. See Attachment G for further information on the feedback received and AEMOs response to any specific issues or suggestions that were raised.

Following the closing of submissions in response to the Draft IIR, AEMO published an early version of the IIR on 17 August 2022. However, in order to consider each submission in full, AEMO republished this IIR on 26 August, along with several additional Guides so participants can assess whether the Procedures are fit for purpose. These are the:

- Example GSOO, Victorian Gas Planning Report and Large Industrial Load Questionnaires.
- The BB Data Submission Guide.

### 1.5. Submission instruction to this consultation

Anyone wishing to make a submission for this consultation stage is requested to use the response template provided in Attachment A. Submissions close <u>23 September 2022</u> and should be emailed to <u>gwcf correspondence@aemo.com.au</u>.

### 2. **REFERENCE DOCUMENTATION**

- GSOO Procedures.
- GSOO Survey example.
- BB Procedures.
- BB Data Submission Guide (formerly a Procedure).
- Guide to GBB Reports.
- BB Aggregation Methodology.
- Application for Registration form GBB and Part 24 and the supporting Application Guide.
- GBB Facility Registration Form and the supporting Application Guide.
- Guide to Capacity Transfer and Day-ahead Auction Reports.
- Guide to Capacity Transfer and Day-ahead Auction Transactions.

## 3. OVERVIEW OF CHANGES

The proposed changes are to:

- Create the GSOO Procedures.
- Update the BB Procedures.
- Amend the content of the BB Data Submission Procedure and rename it the BB Data Submission Guide. All procedural elements of the BB Submission guide have been incorporated into the BB procedures.



## 3.1. GSOO Obligations for participants

The Gas Transparency Measures impose a range of obligations upon participants relating to the GSOO, including the obligation to participate in a GSOO survey if AEMO identifies a participant as a GSOO reporting entity.

A GSOO reporting entity is required to participate in a GSOO survey and provide information related to the natural gas industry that AEMO considers is reasonably necessary for the preparation, review, revision or publication of the GSOO.

The Gas Transparency Measures increase the content required to be published in the GSOO (see section 1.3.1). Where relevant, AEMO will ask GSOO reporting entities to provide data and information relevant to this new content, via the GSOO survey.

The GSOO Procedures specify the requirements of the process for a GSOO survey.

### 3.2. BB Obligations for participants

The Gas Transparency Measures impose a range of obligations upon participants. The new obligations that participants must comply with under the amended BB Procedures are summarised below:

**Pipeline Facilities:** 

- Must increase Uncontracted Capacity Outlook submissions to 36 months
- Changes to submitting N/A against zero flows (must be receipt or delivery)
- Capacity descriptions enforced as mandatory or not
- Nameplate capacities can now be deactivated
- Shipper lists can be automatically uploaded
- Gate station submission no longer available (connection point submission)

Storage Facilities:

- Must provide Shipper Lists (List of BB shippers with primary firm capacity), automated
- Must increase Uncontracted Capacity Outlook submissions to 36 months
- When providing the quantity of natural gas held in a BB storage facility, how much is storage cushion gas must also be provided. For LNG tanks this will be the heel gas

Compression Facilities:

- Must provide Shipper Lists (List of BB shippers with primary firm capacity)
- Must provide Medium Term Capacity Outlook
- Must increase Uncontracted Capacity Outlook submissions to 36 months

Production Facilities:

• Must provide 36-month Uncontracted Capacity Outlook

LNG Export Facilities:

• Must provide Nameplate rating:



- 1. The maximum quantity of gas that the facility can receive from a pipeline on a gas day; and
- 2. The maximum quantity of gas that the facility can process to a liquefied state on a gas day.
- Must provide Short Term Capacity Outlook:
  - 1. The quantity of gas that the facility can receive from a pipeline on a gas day; and
  - 2. The quantity of gas that the facility can process to a liquefied state on a gas day
- Must provide Medium Term Capacity Outlook
  - 1. The quantity of gas that the facility can receive from a pipeline on a gas day; and
  - 2. The quantity of gas that the facility can process to a liquefied state on a gas day
- Must provide LNG shipment data (the LNG export facility, the shipment departure date and the total shipment volume)
- Must provide Actual Flow (daily consumption data):
- The quantity of gas delivered to the LNG export facility on a day (unless an exemption exists)
- Must provide details of any Short-Term LNG Export Transactions Large User Facilities:
- Must provide Nameplate rating
- The maximum quantity of gas delivered to the facility on a gas day
- Must provide Actual Flow (daily consumption data):
  - The quantity of gas delivered to the facility on a day (unless an exemption exists, or
  - o data is being provided by the retail market operator)

LNG Import Facilities:

- Must provide Nameplate ratings:
  - 1. The maximum quantity of LNG that can be received and processed into storage on agas day; and
  - 2. The maximum quantity of LNG that can be held in storage on a gas day; and
  - 3. The maximum quantity of LNG that can be withdrawn from storage for processing to a gaseous state on a gas day; and
  - 4. The maximum quantity of natural gas that can be injected into one or more pipelines on a gas day.
- Must provide 36-month Uncontracted Capacity Outlooks:
  - 1. Uncontracted capacity for storage in the LNG import facility; and
  - 2. Uncontracted capacity for regasification by the LNG import facility
- Must provide Short Term Capacity Outlooks:





- 1. The quantity of LNG that can be received and processed into storage on a gas day; and
- 2. The quantity of LNG that can be held in storage on a gas day; and The quantity of LNG that can be withdrawn from storage for processing to a gaseous state on a gas day; and
- 3. The quantity of natural gas that can be injected into one or more pipelines on a gas day
- Must provide Medium Term Capacity Outlooks:
  - 1. The quantity of LNG that can be received and processed into storage on a gas day; and
  - 2. The quantity of LNG that can be held in storage on a gas day; and
  - 3. The quantity of LNG that can be withdrawn from storage for processing to a gaseous state on a gas day; and
  - 4. The quantity of natural gas that can be injected into one or more pipelines on a gas day
- Must provide Nomination and Forecast Flow:
- The aggregate quantity to be injected into a BB pipeline/s for the following week
- Must provide Actual Flow and Storage:
  - 1. The daily production of the LNG import facility; and
  - 2. The actual quantity of LNG held in storage at each LNG import facility
- Must provide LNG Import shipment data (the LNG import facility, the date unloading commences and the total shipment volume)

### **Facility Developers**

Definition: 'Facility developer means a person who owns, controls or undertakes a facility

development project'

<u>Registration</u>: The Facility developer must register. If there is more than one facility developer for a facility development project, then they are taken to be a facility developer group, and one member of the group must register as the BB Reporting Entity for the facility development project.

<u>Data provided to AEMO</u>: The BB reporting entity must provide a range of data to AEMO relating to each of its facility development projects (on registration of the facility development project and annually, by the date specified in the BB Procedures).

Fields Owners:

Definitions:

• 'BB field means a field in respect of which the right to explore for, extract, recover or process petroleum is held under one or more petroleum tenements and that meets the applicable reporting threshold'





Reporting threshold: The field has 1P, 2P or 3P reserves, or 2C resources, of processable gas

- 'BB field interest means a net revenue interest in a BB field'
- 'Field owner means a person with a BB field interest'

Exemptions may be applied to BB fields located in the offshore area of the Northern Territory.

### Registration:

A field owner must register as the BB reporting entity for each BB field interest for which it is a field owner. If there is more than one field owner for a BB field, then they may form a field owner group (the group of BB field interests) for the purposes of reporting as long as:

- a) they are closely related entities and one or more of them has a net revenue interest in the BB field; or
- b) each of them holds a net revenue interest in the BB field and they are engaged in joint marketing of natural gas produced from the BB field

The members of a field owner group may appoint one of the members in writing to be the responsible field owner and to register as the BB reporting entity for the group of BB field interests.

### Data provided to AEMO:

The BB reporting entity must provide:

- 1. Standing data to AEMO relating to each of its BB field interests (on registration and annually thereafter, or when the information is no longer accurate); and
- 2. Details of the reserves and resources of each of its BB field interests for each reporting year

Gas Seller:

• Must provide details of Short-Term Gas Supply or Swap Transactions

Gas Storage Capacity Seller:

• Must provide details of Short-Term Gas Storage Capacity Transactions

Note also:

- FTP submissions will no longer available
- Exemptions have been clarified that the data must be able to be mapped in AEMO's systems

## 4. LIKELY IMPLEMENTATION EFFECTS AND REQUIREMENTS

Changes will be required to meet the above requirements, as outlined in the Procedures attached to this IIR.

Outside of the scope of this consultation and to complement these Procedure changes, AEMO is also updating documentation including:



- Registration forms, including the Application for Registration form, BB facility registration form, BB data exemption form, BB Change of Facility Operator Form and the GBB Application for Revocation of Facility Registration Form.
- The Registration Application Guide.
- Guide to GBB Reports.
- BB Aggregation Methodology.

In order to aid participants' understanding of the new GSOO Procedures, an example of the GSOO Survey is included in this consultation.

With regards to the IT implementation of these changes:

- More information on the BB data model changes will be released over August and September 2022.
- The Gas Data Model v2.2 Draft Technical Specification was circulated on 22 August.
- Market trial is expected to occur in mid-October.
- Further information on system changes will follow the publication of this IIR..

## 5. OVERALL COST AND BENEFITS

The changes to the BB and registration will mean that several categories of market participant will be required to register, and reporting obligations will change.

The changes to the GSOO are minimal, as stakeholders are already providing the majority of the information that is required as part of this change. Increased costs to stakeholders to provide this information will be negligible in magnitude.

In relation to benefits and as outlined by the Department of Climate Change, Energy, the Environment and Water, these measures will:

- Provide greater transparency of information that will provide more accurate signals about how well the market is functioning and allow market participants to more efficiently respond to changing market conditions.
- Promote competition by reducing search and transaction costs that gas users face during the price discovery process and by reducing the imbalance of bargaining power that users can face in each stage of the supply chain.

Noting the above, AEMO put forward a view in the first round of consultation that the benefits associated with this change would outweigh the costs. Participants are welcome to make a submission if they believe AEMO's overall position is unreasonable.

AEMO's total implementation costs, including implementation should be approximately \$1,800,000.00.

## 6. MAGNITUDE OF THE CHANGES

AEMO considers the order of magnitude of this change is material due to its cost and impact on AEMO's Procedures and documentation, and IT systems. AEMO's total implementation costs, including implementation are estimated to be \$1,800,000.00.



# 7. AEMO'S ASSESSMENT OF THE PROPOSAL'S COMPLIANCE WITH SECTION 135EB:

AEMO puts forward the following assessment regarding compliance with section 135EB of the National Gas Rules:

Consistency with National Gas Law (NGL) and NGR	AEMO's view is that the proposed changes are consistent with the NGL and NGR. Participants will be given an opportunity during this consultation to inform AEMO if they believe there is such an inconsistency.		
National Gas Objective	AEMO's view is that the proposed change will help achieve the National Gas Objective through two mechanisms:		
	<ol> <li>Transparency reforms that will facilitate more efficient planning and investment in the domestic gas markets, provide more accurate signals about how well the market is functioning and enable market participants to more efficiently respond to changing market conditions.</li> </ol>		
	2. Measures that will also promote competition by reducing search and transaction costs that gas users face during the price discovery process and by reducing the imbalance of bargaining power that users can face in each stage of the supply chain.		
Any applicable access arrangements	AEMO's view is that the proposed change is not in conflict with existing Access Arrangements. Participants will be given an opportunity during this consultation to inform AEMO if they believe the proposed change is in conflict with existing Access Arrangements.		

## 8. CONSULTATION OUTCOMES

In accordance with the Approved Process Under Rule 135EC of the NGR, AEMO circulated a drafted IIR that put forward changes to the Procedures in Attachments B-F to the GWCF on 27 July 2022. Registered participants and interested stakeholders were invited to make submissions which closed on 12 August 2022.

AEMO received 7 submissions, one of which was confidential. The other submissions were from APA, APGA, Arrow Energy, Cooper Energy, Epic Energy and Jemena. None of the submissions objected to the proposal and they each made several additional suggestions for the provision of information to the market. These submissions and AEMO's response to it are summarised in this section. See Attachment G for further information on the feedback received and AEMOs response to any specific issues or suggestions that were raised.

AEMO determined on the basis of these submissions that the proposed change meets the National Gas Objective, with some further amendments proposed and detailed below.

## 8.1. GSOO Procedures Changes between the Draft IIR and this IIR

Several additional changes have been made to the GSOO Procedures, which are track-changed and attached to this consultation. These include:



- Greater flexibility in GSOO Survey responses, specifying that all information in a GSOO survey response must be accurate as at the date the GSOO survey was issued or if practical at the time the information is provided to AEMO should changes happen within the response period, rather than at the time of provision to AEMO.
- An additional clause specifying that if AEMO does not accept a request to treat specific information in a GSOO survey response as confidential, AEMO will endeavour to contact and inform the GSOO reporting entity prior to the release of the information.
- The operator for a joint venture (JV) will be the party to fill in the GSOO survey on behalf of their other JV parties. In some specific cases it may be of value to seek out individual JV's perspective, but this will not be the majority of cases.

## 8.2. BB Procedures Changes between the Draft IIR and this IIR

Several additional changes have been made to the BB Procedures, which are track-changed and attached to this consultation. These include:

- In addition to daily production data, storage information should also be provided by 1:00 PM on each gas day (D+1).
- The description of each linepack/capacity adequacy (LCA) flag has been simplified, including the removal of the requirement to notify AEMO when an LCA flag changes to red. This will be given further consideration following the publication of this IIR.
- Amending the wording to make it clear that BB reporting entities do not make the forecasts but provide the forecasts based on information provided to them by BB shippers. In the event where there are no nominations for a facility, the forecast will be the BB reporting entity's reasonable estimate of expected flows on that BB pipeline.
- Changing a 'best estimate' to a 'reasonable estimate' with regards to 7 day forecasts, as well as associated amendments.
- Clarifying the confidentiality of reporting.
- The actual quantity held in storage should exclude any cushion gas, with regards to clause 6.5.2.

## **IMPACT & IMPLEMENTATION REPORT – RECOMMENDATION(S)**

## 9. SHOULD THE PROPOSED PROCEDURES BE MADE?

AEMO recommends making the changes proposed in Attachments B-F.

### 10. PROPOSED TIMELINES

Subject to all necessary approvals, AEMO is targeting to implement this change on a staggered basis, beginning in September 2022.

In order to achieve this timeline, AEMO proposes the following key milestones:

- Issue IIR on 26 August 2022.
- Submissions on IIR close on 23 September 2022.





- Notice of AEMO Decision issued on 28 September 2022.
- BB Procedures for the purpose of the new registration rules will go live on 26 October 2022.
- The deadline for participants to apply for registrations will be 28 November 2022.
- New BB reporting obligations will begin on the 15 December 2022.
- New GSOO procedures will go live on the 15 February 2023.

Please note that the effective dates as described in the Rules are earlier than above, but AEMO intends on delaying their implementation in order to complete a more thorough consultation in accordance with the Rules. AEMO will discuss the delayed implementation of some Gas Transparency Measures obligations with the AER. These are outlined below:

- BB Procedures for the purpose of the new registration rules were to go live on 22 September 2022.
- Application for registrations deadline was to be 20 October 2022.





## ATTACHMENT A - IIR RESPONSE TEMPLATE

A response template has been attached separately to this document. Anyone wishing to make a submission to this first stage consultation are to use this response template. Submissions close 23 September 2022 and should be emailed to <u>gwcf\_correspondence@aemo.com.au.</u>



## **ATTACHMENTS B-F - DOCUMENTATION CHANGES**

Draft versions of the Procedures and Guides showing tracked changes between the current version and the proposed changes are attached to this IIR. <u>Blue underline</u> means addition and red strikeout means delete. Feedback is requested on the Procedure changes (attachments B and C).





### ATTACHMENT G - FEEDBACK GIVEN TO DRAFT IIR

Please note that APGA's submission was in the form of a letter, and as such, AEMO has summarised it in the tables below and attached it to the end of this section.

### Section 1 - General Comments on the Proposed Procedure Change

Торіс	Respondent	Please Provide Response Here	AEMO response
Sections 1 to 9 of the Draft IIR sets out	APA	APA proposes some changes to areas of the GBB	AEMO notes the respondent's
details of the proposal.		Procedures. These have been outlined in Section 2 along	feedback and has responded to
		with the rationale as to why we are unable to support	it further in this document.
Description support AFNAO		AEMO's assessment of the current proposal, but would	
Does your organisation support AEMO'		like to work with AEMO to develop procedures that	
s assessment of the proposal?		achieve the Bulletin Board's objectives whilst being	
If no places specify grads in which your		operationally viable.	
If no, please specify areas in which your organisation disputes AEMO's	Arrow	Arrow is supportive of AEMO's assessment of the	AEMO notes the respondent's
assessment (include Draft IIR section	Energy	proposal and provides the comments set out in Section 2	support of the proposal. Further
reference number) of the proposal and	Lifergy	below. Further, Arrow notes that there is some overlap	consideration of a minimization
include information that supports your		between the information that Arrow is required to provide	of regulatory burden has been
organisation's rationale why you do not		to the Australian Competition and Consumer Commission	provided throughout this
support AEMO's assessment.		("ACCC") Gas Inquiry and what Arrow will be required to	document.
		provide under the National Gas Amendment (Market	
		Transparency) Rule 2022. Arrow requests that AEMO give	
		consideration to how best to transition the	
		commencement of these new reporting requirements in	



	AUSTRALIAN ENERGY MARKET OPERATOR	
	order to reduce duplication in reporting requirements and the regulatory burden on reporting entities.	
Epic Energy	No comments	
Jemena	Jemena broadly supports AEMO's assessment, noting that the proposed changes are consistent with recent changes to the NGR.	AEMO notes the respondent's support for the proposal and consultation timing.
	We support AEMO undertaking a more thorough consultation on the procedure and other document changes, even where doing so requires a delay in the commencement of some new obligations for market participants. We also consider it important that one month continues be provided for between the publication of the final BB procedures and the deadline for BB registrations.	AEMO will provide further guidance regarding implementation, including delayed implementation activities as further information emerges.
	However, noting the conflict between the Draft IIR's implementation timelines and those set out in the NGR, we request that AEMO and the AER provide clear guidance to market participants as soon as possible about:	
	<ul> <li>The timeframes which participants should be working towards in their own implementation activities.</li> </ul>	



The AER's proposed approach to compliance and enforcement during any implementation delay
period.

### Section 2 - Feedback on the documentation changes in the Attachments of the Draft IIR.

	Gas Statement of Opportunities (GSOO) Procedures					
RMP Clause #	Respondent	Issue / Comment	Proposed text Red strikeout means delete and <u>blue underline</u> means insert	AEMO Response		
General	Cooper Energy	Cooper Energy supports AEMO and the proposed changes to the GSOO procedures.		AEMO notes the respondent's support for the proposal.		
3	Arrow Energy	It would be helpful from a planning perspective for the GSOO procedures to prescribe when AEMO will issue pre-survey notices and GSOO survey notices. The timing of these notices should be consistent each year.		AEMO notes the respondent's comment. AEMO will not be including issuing dates for the GSOO pre-survey and survey. Instead, AEMO will publish a timeline alongside the GSOO Procedures that will give a rough guide as to the expected timing for relevant GSOO activities.		
3.4	Arrow Energy	There is a possibility that information for responding to a GSOO survey can change during the 20 business days response period. To give certainty to reporting entities, it would be more helpful for the responses to reflect the information as at the date of the GSOO survey notices instead. This is consistent with the approach adopted by the ACCC Gas Inquiry where information requested is to be as at the date that the section 95ZK notices are issued.	All information in a GSOO survey response must be accurate <u>as at the</u> <u>date the GSOO survey was issued or</u> <u>if practical at the time the information</u> <u>is provided to AEMO should changes</u> <u>happen within the response period</u> <del>at</del> <u>the time of provision to AEMO</u> .	AEMO notes the respondent's comment. AEMO agrees with the respondent's comment and has amended the GSOO Procedures accordingly.		
4.1	Arrow Energy	There is a reference to the ability for a GSOO reporting entity to apply to AEMO for an exemption from the obligation to participate in a GSOO survey. This suggests that there are circumstances other than when a person does not meet the criteria as a GSOO reporting entity		AEMO notes the respondent's comment. AEMO agrees with Arrow's interpretation of this clause, which was included to account for the possibility that a situation may arise in which it may no longer make sense for a GSOO reporting entity, as defined in Section 2, to		



			AUSTRALIAN ENERGY MARKET OPERATOR		
		which may qualify a person for an exemption. If this is the case, then the procedures should set out the other exemption criteria.		continue submitting a GSOO survey. AEMO does not have any particular criteria in mind, and will treat each application for exemption on a case-by-case basis.	
6	Arrow Energy	Consistent with the approach taken by the ACCC and the Australian Energy Regulator ("AER") under the ACCC/AER Information Policy, AEMO should endeavor to notify and consult the person who provided confidential information about the proposed release of information.	If AEMO does not accept a request to treat specific information in a GSOO survey response as confidential, AEMO will endeavour to contact and inform the GSOO reporting entity prior to the release of the information.	AEMO notes the respondent's comment. AEMO agrees with the respondent's comment and has amended the GSOO Procedures.	

	Gas Bulletin Board (GBB) Procedures				
RMP Clause #	Respondent	Issue / Comment	Proposed text Red strikeout means delete and blue underline means insert	AEMO Response	
General	Cooper Energy	Cooper Energy supports AEMO and the proposed changes to the GBB procedures.		AEMO notes the respondent's support for the proposal.	
3.7.1	ΑΡΑ	<ul> <li>APA raised throughout the consultation process on the Gas Transparency Measures since 2019 concerns over the inclusion of proposed projects that have not been the subject of a successful FID or been announced publicly. The current proposal continues to raise the following significant concerns:</li> <li>APA is subject to information disclosure requirements under ASX Listing rules. APA needs to ensure that we are not put into a positon of providing information that would put us in potential breach of our</li> </ul>	APA will be able to provide a considered response with draft wording during the Impact and Implementation Response (IIR) consultation period. Unfortunately, this has not been achievable during this period on the draft IIR. We request that we work with AEMO over the coming weeks to agree wording that is aligned with the National Gas Rules, is objective, can be adhered to practically by industry and meets the objective of the Gas Bulletin Board being to facilitate informed and efficient decisions.	AEMO notes the respondent's feedback. APA is welcome to submit their draft wording before the closure of submissions on the IIR so it can be given as much consideration as possible. Concerns around confidentiality and interactions with other reporting obligations have previously been considered in the <u>RIS</u> for GTM. AEMO acknowledges the potential issue raised by the respondent about the projects with high uncertainty	





information disclosure requirements or	being included in the reporting	
of confidentiality requirements set out	requirements.	
in negotiated contracts with potential		
or existing customers.		
The competitive nature of pipeline		
developments for APA as an operator		
and for the direct customer proposing		
the development means that		
developments are often commercially		
sensitive and need to be treated as		
confidential until they are publicly		
announced or have achieved a		
sufficient level of certainty. A project		
only achieves the requisite level of		
certainty to provide the Bulletin Board		
with information enabling informed		
decisions at FID. Prior to this stage of		
development, projects are more		
speculative and subject to a myriad of		
factors impacting success (regulatory		
approvals, land access, technical		
considerations, procurement, and		
commercial (offtake/service		
arrangements, access, connection)).		
The criteria for proposed and committed		
projects must have a requisite level of		
certainty, be objectively assessed and		
enable publicly listed companies the ability		
to adhere to Corporations Law and ASX		
Listing Rules.		
The current broad scope of the criteria in section		
3.7.1 of the draft procedures would capture		
projects only in their infancy that may never		
eventuate. This could easily mislead the market		
and detract from the objective of the gas		
bulletin board (s 145 NGR) from providing		
information to enable "informed and efficient		





V		AUSTRALIAN ENERGY MARKET OPERATOR	
	decisions in relation to the provision and use of natural gas and natural gas services".		
3.7.1 APG	A Requiring confidential commercial negotiations for contract carriage infrastructure investments be disclosed undermines the gas infrastructure investment market, and decisions made on possible capacity which is speculative at best risks poor customer outcomes.		AEMO notes the respondent's comment. Concerns around confidentiality and interactions with other reporting obligations have previously been considered in the <u>RIS</u> for GTM.
3.7.1 Jem	<ul> <li>We consider that the proposed criteria for classification set out in clause 3.7.1 are unnecessarily broad and may have the potential to inadvertently capture large numbers of prospective projects, including those which are only studies into prospective opportunities.</li> <li>In practice, infrastructure developers consider a large number of prospective opportunities for years (or in some cases, decades). Very few of these possibilities ever reach an investment decision, and even fewer ultimately reach operation. The reporting of such large numbers of potential opportunities as 'proposed facility development projects' may be misleading and not beneficial to market participants.</li> <li>We have therefore suggested changes to the criteria to more accurately target the reporting of 'proposed' projects which have a reasonable chance of proceeding to construction (and ultimately, operations).</li> <li>Jemena would welcome the opportunity to discuss these criteria further with AEMO during the upcoming formal consultation process.</li> </ul>	<ul> <li>For the purposes of Rules 152(6), such a project will be a proposed project and a committed project if any of the following criteria are met:</li> <li>(a) A project is a proposed project if:</li> <li>(i) the participant has made an investment decision subject to fulfilment of extraneous factors such as customer demand and Government approvals</li> <li>(i) the participant considers the project to be justified on the basis of a reasonable forecast of commercial conditions at the time of reporting, and there are reasonable expectations that all necessary approvals (such as regulatory approvals) will be obtained; or</li> <li>(ii) the project requires new infrastructure that currently does not have approved planning permits or environmental approvals; or</li> <li>(iii) the project has not reached financial investment decision (FID) but is anticipated to proceed (using existing infrastructure).</li> <li>(b) A project is a committed project if:</li> <li>(i) the project has successfully passed a financial investment decision (FID), and is progressing through the engineering, procurement, and construction (EPC)</li> </ul>	AEMO notes the respondent's comment. AEMO acknowledges the potential issue raised by the respondent about projects with high uncertainty being included in the reporting requirements.





			AUSTRALIAN ENERGY MARKET OPERATOR	
			phase, <u>commenced construction</u> , but is not currently operational.	
5.1	Jemena	We note that a facility developer for a facility development project is able to apply to AEMO for registration under the simplified process, whereby they can submit information about the facility development project to AEMO via email. We consider that this is a sensible approach in the context of what is likely to be relatively infrequent reporting, however we assume that this email submission option would not be available to those BB reporting entities which already have access to AEMO's systems (for example, the owner of an existing BB pipeline that is planning an expansion project). We therefore request that AEMO ensure facility developers which are not approved under the simplified process remain able to submit csv files using the BB website upload page. This would allow industry participants to avoid the cost and complexity of modifying their IT systems to submit facility development project information using the RESTful web service interface.		AEMO notes the respondent's comment. BB website file upload will always be an available option of uploading information.
6.3.1	Jemena	Clause 6.3.1(f) sets out that production facility operators must also take account of any short term trends in gas field performance if this is constraining or will constrain overall daily capacity within the relevant period when providing AEMO a short term capacity outlook. We note that some production (or processing) facilities are operated on an 'open access' basis, where the facility's owner and operator provides a processing service to a third party which owns/operates the gas fields upstream of the facility. Examples of such facilities include	(f) If a production facility operator is aware of such information, Production facility operators must also take account of any short term trends in gas.	AEMO notes the respondent's comment. This clause of the BB Procedures is not being amended as a result of the GTM changes and as such is outside of the scope of this consultation. Additionally, there is no majority opinion from participants on what this clause should be. As such, AEMO proposes to retain the clause.



			AUSTRALIAN ENERGY MARKET OPERATOR	,
		Jemena's Atlas and Roma North gas processing facilities. In these cases, the production facility operator is unlikely to have knowledge of any 'short term trends in gas field performance', and would therefore be unable to comply with this requirement. We therefore suggest that clause 6.3.1(f) be amended to only require a production facility operator to take account of short term trends in gas field performance where it is aware of such information.		
6.3.1(f)	АРА	Short term capacity outlooks for BB facilities For an operator of a third party production facility, similar to pipelines, the operator does not have insight into the upstream operations of the fields other than the contractual obligations of the producer to provide nominations and forecasts.	(f) Production facility operators must also take account of any short term trends in gas field performance if this is constraining or will constrain overall daily capacity within the relevant period.	AEMO notes the respondent's comment. Please refer to the response given to Jemena above.
		In addition, the performance of an upstream gas field has no impact or indication on the capacity or availability of a third party provided production facility. This is classified as throughput not capacity which will be captured in the production reporting files to the Gas Bulletin Board. As such, this should not be included in the short term capacity outlook of a third party production facility.		
6.3.2	АРА	Linepack/capacity adequacy (LCA) Linepack/ capacity adequacy is already a difficult obligation to comply with considering the dynamic nature of many pipelines. Adding further quantifiers or conditions just enhances the complexity and instead of standardizing how facility operators apply LCA flags will just	Amber Flag BB Pipelines: It is unlikely that involuntary curtailment of 'firm' capacity is required, but at least one of the following conditions is met: Mon-firm nominations, including nominations made for capacity won in the Day Ahead	AEMO notes the respondent's comment. After further consideration, AEMO will amend the BB Procedures with regards to the comments received in relation to linepack/capacity adequacy. AMEO will organize a forum to be



-		AUSTRALIAN ENERGY MARKET OPERATOR	
	<ul> <li>increase confusion and potentially lead to inaccuracy or amber flags being applied to pipelines daily. This will lessen the information value of this measure to the market that APA questions whether it is relied on by shippers or market participants on a daily basis in the first instance.</li> <li>The current definitions of Amber and Red flag for BB Pipelines should be reinstated and similar definitions applied for compression facilities because ultimately compression and pipelines are interrelated.</li> <li>Further conditions under Red Flag for a BB pipeline is not necessary as the currently definition and free text field provides sufficient guidance that curtailment of firm load on pipeline requires a Red LCA and to provide the location of the curtailment in the free text field. APA does this already for the MSP where a constraint on the Culcairn to Young section of the pipeline does not necessarily impact the mainline MSP from Moomba to Wilton, yet an Amber or Red Flag would be provided for the full MSP and a description outlined of where the constrain/ curtailment is to provide clarification.</li> <li>For clarity, capacity reduction information should not be a trigger for a change in LCA flag indicator other than when it invokes curtailment, but via the existing Short Term Capacity Outlook (STCO) report. References to <i>full capacity</i> in the existing definitions is understood to mean the operational capacity (not nameplate capacity) which takes into account capacity reductions as outlined in the STCO.</li> </ul>	<ul> <li>Auction, have been interrupted or curtailed, including any curtailment that a BB reporting entity becomes aware of that is downstream of the connection point; or</li> <li>The short term capacity outlook for a segment of a pipeline is reduced by [20]% when measured against the nameplate Capacity</li> <li>For a BB pipeline that is also a Part 20 STTM facility, where the ex_ante_capacity_price is not zero.</li> <li>Pipeline is flowing at full capacity, but no involuntary curtailment of 'firm' load is likely or happening.</li> <li>Red Flag BB Pipelines:</li> <li>One of the following conditions is met:</li> <li>Involuntary curtailment of 'firm' capacity is likely or happening, including the inability to deliver to a receipt or delivery point due to curtailment that is occurring downstream of that point.</li> <li>Line pack has, or is forecast to, drop below minimum operating levels</li> <li>Involuntary curtailment of 'firm' load is likely or happening.</li> <li>Amber Flag Compression</li> <li>Compressor is flowing at full capacity, but no involuntary curtailment of 'firm' shippers is likely or happening.</li> </ul>	held with affected participants on this matter following the publication of this IIR. <u>Red Flag BB Pipelines</u> AEMO will amend the first point to: "Involuntary curtailment of 'firm' capacity is likely or happening." AEMO proposes to keep the second point regarding Linepack condition, as it is an indicator of the BB pipelines actual or expected capability. <u>Amber Flag Compression</u> AEMO will amend this according to APA's suggestion.



6.3.2	APGA	The diverse range of customer needs supported by services providers of contract carriage gas infrastructure, and the diverse range of technical parameters of said infrastructure, results in an even more diverse range of ways to describe linepack or capacity adequacy. To avoid misleading market participants, the Gas Bulletin Board needs to either maintain a simple, high- level approach to LCA Flags or include every single permutation and combination of how linepack and capacity is considered across all gas infrastructure. To reach a middle ground between these two points would be to risk conflating the specifics of individual pipelines while giving the impression to market participants that the information they are receiving is more accurate than it actually is. This in turn risks misapprehension of market conditions and poorer outcomes for energy customers. APGA recommends that the current approach to LCA Flags most appropriately achieves the high-level approach and should not be changed. APGA flags concerns that the approach proposed within the Consultation risks providing information unrepresentative of actual pipeline conditions with an impression of greater accuracy due to more flag optionality, which		AEMO notes the respondent's comment. Please refer to response given to APA on this matter.
		would not be in the best interests of customers.		
6.3.2(d)	APA	Segments are a construct developed to effect the Capacity Trading and Auction Market (NGR Part 24 & 25) and do not apply to pipeline level LCA flags under NGR Part 18 National Gas Bulletin Board.	For a BB pipeline, any segment/a-nameplate section of that pipeline meeting the criteria in the table in (b) will set the entire BB pipeline to that flag colour.	AEMO notes the respondent's comment. AEMO agrees with the respondent's comment and will remove the term 'segment' from the BB Procedures.



		1	AUSTRALIAN ENERGY MARKET OPERATOR	
6.3.2(h)	APA	Whilst we appreciate, AEMO as the Gas Bulletin Board Operator would like to have early warning of curtailment on pipelines and those particularly supplying key facilitated markets, it is unreasonable to require facility operators to manually communicate with AEMO when these are applied. Inherently amber and red LCA flags are being applied in difficult situations where Facility Operators are already under pressure managing the pipeline within safety and integrity limits, assessing and undertaking curtailment measures. AEMO can place alerts on its system for when an Amber or Red LCA flag is received from a Facility Operator by its system.	If at any time the LCA flag has a status of red, the BB reporting entity must immediately notify AEMO at bbo@aemo.com.au.	AEMO notes the respondent's comment. Please refer to response given to APA on this matter. AEMO agrees with the respondent's comment and will remove the requirement to notify AEMO when an LCA flag changes to red.
6.3.2	Epic Energy	Changes to Linepack / capacity adequacy categorisation will materially increase the frequency of Amber flags. Interruption and/or curtailment occur frequently at various delivery points due to delivery point constraints and / or pipeline segment constraints. The curtailment or interruption of non-firm capacity is not an indicator of overall pipeline linepack / capacity adequacy, due to: - Due to auction procedures and timing of nominations non-firm services are curtailed daily as part of the pre-auction schedule and are subsequently scheduled as part of the post auction schedule. - Segment constraints on laterals and constraints at single delivery points often results in curtailment while sufficient capacity exist on the pipeline to deliver all firm nominations and additional non-firm services.	6.3.2 (b) should remain unchanged or and link to non- firm service curtailment or interruption should be removed.	AEMO notes the respondent's comment. Please refer to response given to APA on this matter.





$\mathbf{\Psi}$		AUSTRALIAN ENERGY MARKET OPERATOR	
	The physical operation of the pipeline is not always impacted by interruptions and curtailment of non-firm services.		
6.4.2 APA	<ul> <li>Nominations and Forecasts</li> <li>A transmission pipeline, as a provider of third party services, is a customer led service.</li> <li>Customers control nominations and gas flow and are best placed to provide the information with the requisite level of certainty required to achieve the Gas Bulletin Board's objectives.</li> <li>Pipeline operators do not have insight into shippers' operations other than what is provided contractually for nominations and forecasts.</li> <li>Additionally, gas flows on pipelines that are aggregated from many shippers can mean these are highly variable being made up of many individual decisions by customers.</li> <li>Whilst APA recognizes the policy intent to provide certainty of gas flow nominations and forecasts, this is most accurately provided by the individual shippers under contractual arrangements. Gas flows are extremely dynamic and as witnessed in recent months can swing significantly day to day, responding to market pricing throughout markets scattered along the east coast of Australia or other supply and demand impacts. Any attempt of facility operators to forecast flows other than what is contractually provided to them by a variety of shippers on a contract carriage service, will mislead the market and provide inaccurate information, defeating the Bulletin Board's purpose to provide information to enable informed decisions.</li> </ul>	APA will be able to provide a considered response with draft wording during the Impact and Implementation Response (IIR) consultation period. Unfortunately, this has not been achievable during this period on the draft IIR. We request that we work with AEMO over the coming weeks to agree wording that is aligned with the National Gas Rules and is operationally practical.	AEMO notes the respondent's comment. AEMO has amended the wording to make it clear that BB reporting entities do not make the forecasts but provide the forecasts based on information provided to them by BB shippers. In the event where there are no nominations for a facility, the forecast will be the BB reporting entity's reasonable estimate of expected flows on that BB pipeline.





V			AUSTRALIAN ENERGY MARKET OPERATOR	
		With the introduction of the Day Ahead Auction (DAA) in the Capacity & Trading Market is that any non-firm services can now only be scheduled after the DAA has been run by AEMO. Consequently non-firm services cannot be nominated or forecast until after 7pm on the Gas Day -1.		
6.4.2	ΑΡΑ	National Gas Rule 183 does not provide an obligation to update these forecasts within a gas day. Clauses (e) and (f) go beyond the obligations of the National Gas Rules. In the lead up to a gas day, nominations can change constantly with numerous shippers responding to changing market conditions. It is not realistic to expect BB reporting entities to be reporting potentially intra-hourly particularly where large pipelines (such as the MSP or SWQP) have numerous shippers. For forecast information on contract carriage facilities, daily updates are sufficient.	<ul> <li>e) The BB reporting entity must update the information provided if there is a material change, including changes that occur within the gas day.</li> <li>(f) If: <ul> <li>(i) there is a material change to the delivery and receipt Forecasts for a specific delivery point or a receipt point (as applicable); or</li> <li>(ii) the changes to delivery and receipt Forecasts for all delivery points or receipt points for a BB pipeline for a gas day aggregate to a number that meets the material change threshold, the BB reporting entity must provide the updated information on that gas day.</li> </ul> </li> </ul>	AEMO notes the respondent's comment. NGR 183(7) states that the BB reporting entity must update the information if there is a material change and must do so as soon as practicable in accordance with NGR 165(3). NGR 165(3) states that the information is to be updated within any applicable timeframe specified in the BB Procedures, in this case within the gas day. Therefore, AEMO will not be deleting these clauses.
6.4.2	APGA	It is inconsistent with the commercial operation of contract carriage gas pipeline infrastructure to forecast firm or non-firm capacity beyond the provision of advance nominations by customers. APGA recommends that proposed BB Procedures Clause 6.4.2 (d) be abandoned prior to implementation of the draft procedures.	<ul> <li>Replacement of "BB reporting entity's best estimate of expected flows" with "BB reporting entity's reasonable estimate of expected flows"; and</li> <li>Removal of Clause 6.4.2(d)(i) through 6.4.2(d)(v)</li> </ul>	AEMO notes the respondent's comment. AEMO agrees with the respondent's comment and will amend the BB Procedures in relation to the first point. Clause 6.4.2(d)(l) to 6.4.2(d)(v) will stay but will be reworded to encourage rather than obligate reporting entities to take these factors into account when determining the forecast.
6.4.2	Epic Energy	BB Reporting Entity is required to provide a forecast which is defined as a best estimate of	6.4.2(c) – if a forecast is provided by a BB Shippers, then the BB Reporting Entity should not be expected to evaluate this forecast and submit its own forecast.	AEMO notes the respondent's comment.



			AUSTRALIAN ENERGY MARKET OPERATOR	
<b>⊻</b>		<ul> <li>expected flows on that BB Pipeline considering a number of factors.</li> <li>BB Reporting Entities do not hold the sufficient level of information to enable a forecast to be provided. User of BB Pipelines operate models to forecast which includes: <ul> <li>Network demand for retail and C&amp;I users</li> <li>Total generation demand adjusted for various supply options including renewables, economic outcomes which determines a balance of gas demand for generation</li> <li>Gas balance position across states to determine most effective transport option to supply gas demand</li> </ul> </li> <li>BB Reporting Entities do not hold the forecasting capability to deliver the abovementioned information, in addition BB Reporting</li> </ul>	Instead, the BB Reporting Entity should only provide the forecast provided by the BB Shipper. 6.4.2(d) – given the insufficient level of information available to BB Reporting Entity the standard of information should not exceed the BB Reporting Entities reasonable forecast as opposed to the "best estimate".	AEMO agrees with the respondent's comment and will amend the BB Procedures.
		<ul> <li>forecasts on alternate pipelines servicing the same assets or markets.</li> <li>Forecasts require a view of all supply options to provide any meaningful information for decision making.</li> <li>In addition, the BB Reporting Entity is in no position to evaluate BB Shippers forecasts and make any adjustments.</li> </ul>		
6.4.2	Jemena	Clause 6.4.2(d) sets out that where there are no nominations for a facility, a BB reporting entity is required to provide a 7 day forecast which must be the BB reporting entity's best estimate of expected flows on the pipeline. Jemena generally receives forecast nominations from a relatively large proportion of shippers on	d) The BB reporting entity is required to provide 7 day Forecasts, including where there are no nominations for that facility. A Forecast in this case must be the BB reporting entity's <u>best reasonable</u> estimate of expected flows on that BB pipeline taking into account factors such as	AEMO notes the respondent's comment. AEMO will amend the BB Procedures as per the proposed text, however, does not see the need to insert a section in the clause to provide clarity on whether DAA quantities are

 $\bigcirc$ 



our pipelines, and these nominations would be used in our reporting of information under Rule 183. However, in the absence of a forward nomination from a particular customer/contract, the forecasting of daily injections and withdrawals for a pipeline can be subject to considerable uncertainty and error. This is particularly the case as the east coast market are increasingly subject to short term changes in market dynamics—with pipeline operators not necessarily being aware of the range of factors and events which may influence the future behavior of shippers and subsequent pipeline flows.	<ul> <li>(i) Day of the week</li> <li>(ii) Seasonality</li> <li>(iii) Weather forecasts</li> <li>(iv) Known maintenance activities</li> <li>(v) Recent trends in gas flows</li> <li>(d1) For a BB auction facility, the BB reporting entity is not required to include in its 7 day Forecasts any quantities of gas which may be injected into or withdrawn from the pipeline in respect of an auction service.</li> </ul>	included in the forecasts. Also (I) to (v) won't be deleted but will be reworded to encourage rather than obligate BB reporting entities to take these factors into account when determining the forecast.
Given the significant potential error any forecasting method would likely involve, we consider that the clause should not need to specify the factors which a reporting entity may take into account. It should instead be left open for the reporting entity to develop a methodology that provides for a reasonable estimate of expected flows, noting the inherent forecasting error expected to be associated with such a requirement. This may allow reporting entities to consider employing lower cost and less complex forecasting methods (for example using averages of a customer's service usage on immediately prior days) to fill any 'gaps' created by absent forecast nominations, while still providing for a reasonable view of future aggregate flows to be reported under Rule 183. Furthermore, we consider that forecasting of future gas flows associated with Day Ahead Auction (DAA) services presents a particular challenge—noting that a pipeline operator will only ever receive nominations for usage of a DAA service on a D+1 basis. Jemena's own		





			AUSTRALIAN ENERGY MARKET OPERATOR	
		experience on the Eastern Gas Pipeline has seen volumes transported under DAA services vary significantly on a day-to-day basis. We therefore consider that clause 6.4.2 should also clarify that a BB reporting entity's forecasts made for the purposes of Rule 183 are not required to include quantities attributable to DAA services.		
6.4.4	АРА	Nominated and forecast use of compression facilities	(b) Compression Forecasts for a BB <u>compression</u> <del>storage</del> facility provided under rule 184 must be in TJ/day.	AEMO notes the respondent's comment. This is an error. AEMO will amend the BB Procedures accordingly.
6.5.2	APA	Daily Production and storage data For clarification is AEMO seeking under 6.5.2 © and (d) one report including cushion gas and the second report under (d) with only cushion gas?		AEMO notes the respondent's comment. The actual quantity held in storage should exclude any cushion gas, AEMO will amend the BB Procedures accordingly to make this clear. The quantity of cushion gas held will be captured as a separate number.
8.1(a)	Arrow Energy	The proposed timeframe for a reporting entity to provide information relating to reserves and resources under clause 8.1(a) of the BB Procedure is inconsistent with the Queensland Government's reporting timeframe. The Petroleum resources and reserves report required pursuant to section 43 of the Petroleum and Gas (General Provisions) Regulation 2017, provides a 60 business day lodgement timeframe. Arrow notes that although the timeframe has been included in the NGR amendment, reporting timeframes should ideally be aligned consistently across state and federal requirements.		AEMO notes the respondent's comment. Since the timeline is also written in the rules as 40 business days, it is a rule requirement and cannot be changed in the procedure consultation process





			AUSTRALIAN ENERGY MARKET OPERATOR	
8.1(f)-(j), 13.1.1(a)(vii)	Arrow Energy	The information required to be provided under clauses 8.1(f) to (j) will include commercially sensitive information and should not be published on the Bulletin Board.		AEMO notes the respondent's comment. This information will be published in both a public and private report. Anonymity will be maintained in the public report. To ensure this, the
				following conditions will be applied: (a) The information, relating to the sensitivity of 2P reserves to a change in gas price assumption, must be available from at least three different BB reporting entities in that participating jurisdiction and reporting period.
				(b) The publication of the information may be restricted to an annual update to avoid individual updates being able to be back calculated.
				The private report will only show the submitting party what they submitted and will be made available in the Markets Portal like other private reports.
3.2 Impact & Implementation Report	APA	BB Obligations for Participants Could AEMO possibly clarify whether for the first dot point how bidirectional pipelines should be	<ul> <li>Changes to submitting N/A against zero flows (must be receipt or delivery)</li> <li>Capacity descriptions enforced as mandatory</li> </ul>	AEMO notes the respondent's comment. A bi-directional point on a pipeline
	clarify what is required h		<ul> <li>or not</li> <li>Gate station submission no longer available (connection point submission)</li> </ul>	includes both a RECEIPT and a DELIVERY connection point. Quantities of zero will be submitted for both connection points (receipt connection point and delivery connection point)
		In relation to the third dot point, as mentioned with David Younger, it would be appreciated if AEMO could clarify what is actually required		





-		AUSTRALIAN ENERGY MARKET OPERATOR	
	here and whether gate station submission will still be required as this is different form a connection point report.		Capacity Descriptions are mandatory for BB pipelines and BB compression facilities only.
			Gate station submissions are now included in the connection point submission. There is no difference in the data format.

### Section 3 – Additional feedback.

Topic	Respondent	Document & Section	Please Provide Response Here	AEMO response
Regarding Basins which are found in Schedule 2 of the BB Procedures; What is missing? What other basins should be included? Do participants think AEMO should provide descriptions or references of these basins?	Cooper Energy	Schedule 2 of the BB Procedures	Descriptions, references and listing by state / region could be helpful for users unfamiliar with basin locations.	AEMO notes Cooper energy's comment. A Basins Report will be published on the BB following the implementation of this proposal. It will include the name and ID of each basin. A table describing East Coast Basins sourced from a variety of publicly available sources is available below. AEMO would welcome additional feedback from stakeholders to further refine this list.
Does your organisation have any feedback / suggestions that closely relates to the scope or	Cooper Energy	8.1 Information relating to reserves and	Whilst Reserves & Resource data is useful, of greater value is the qualitative information that accompanies each submission under subsection (f) and (g).	AEMO notes Cooper energy's comment. The Rule Change now requires relevant parties to provide



<u> </u>		AUSTRALIAN ENERGY MARKET OPER	ATOR
impacts this consultation, but the	resources (f)	Specifically, the list of barriers to	AEMO with the challenges or barriers
nature of the feedback / suggestion warrant further investigations / discussion? If so, please included your feedback / suggestions.	,(g)	commercial recovery of 2C resources. Each company and field have different challenges and it's important not to treat all resource bookings the same. For example, excluding production costs, current GSOO modelling treats all 2C resources as equal.	to commercial recovery of 2C resources, so AEMO will be provided with the relevant information needed to model the 2C resources with more depth and sophistication.
		Further, given the GBB requirements to report reserves and resources, Cooper Energy encourages AEMO to consider how this information can feed into future GSOO surveys to remove duplication of information requests.	Once this new data is available on the BB, AEMO will amend the GSOO surveys to ensure that we are not requesting information that is already available on the BB.





## **East Coast Basins**

Note: while only one state is listed against each basin in the table, some basins in actuality may be overlaid by two or more states or territories.

State	Basin	Source
QLD	Adavale	Adavale Basin   Geoscience Australia (ga.gov.au)
NT	Amadeus	Amadeus Basin   Geoscience Australia (ga.gov.au)
NT	Arafura	Arafura Basin   Geoscience Australia (ga.gov.au)
SA	Arckaringa	Arckaringa Basin   (energymining.sa.gov.au)
SA	Arrowie	Arrowie Basin   Geoscience Australia (ga.gov.au)
VIC	Bass	NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8
NT	Beetaloo	NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) page 8
SA	Bight	Regional Geology of the Bight Basin   Geoscience Australia (ga.gov.au)
NT	Birrindudu	POINT
NT	Bonaparte	Regional Geology of the Bonaparte Basin   Geoscience Australia (ga.gov.au)
QLD	Bowen	Bowen Basin   Geoscience Australia (ga.gov.au)
QLD	Bowen-Surat	NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8
WA	Browse	Regional Geology of the Browse Basin   Geoscience Australia (ga.gov.au)
NT	Canning	POINT
QLD	Capricorn	Capricorn Basin   Geoscience Australia (ga.gov.au)
NT	Carpentaria	Carpentaria Basin   Geoscience Australia (ga.gov.au)
QLD	Clarence- Moreton	Clarence-Moreton Basin   Geoscience Australia (ga.gov.au)
SA	Cooper-Eromanga	<u>NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) page</u> <u>8</u>
NT	Daly	POINT
NSW	Darling	Sedimentary basins - NSW Resources and Geoscience
VIC	Darling	Darling Basin   Geoscience Australia (ga.gov.au)
QLD	Eastern Plateau	Eastern Plateau   Geoscience Australia (ga.gov.au)
NSW	Eromanga	Sedimentary basins - NSW Resources and Geoscience
NT	Eromanga	POINT
NT	Fitzmaurice	POINT
QLD	Galilee	Gas Industry Exisiting Areas - GasFields Commission Queensland (gasfieldscommissionqld.org.au)
QLD	Galilee-	NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) page
	Drummond	8 Or share evelopeting I. Becomering the Territory (street even)
NT	Georgina	Onshore exploration   Resourcing the Territory (nt.gov.au)
VIC	Gippsland	Regional Geology of the Gippsland Basin   Geoscience Australia (ga.gov.au)
NSW	Gunnedah	NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8
SA	Gunnedah	NATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8



QLDIpswichIpswich Basin   Geoscience Australia (ga.gov.au)QLDLaura and Lakefield Basins   Geoscience Australia (ga.gov.au)NWLorneLorne Basin   Geoscience Australia (ga.gov.au)NWLorneMaryborough Basin   Geoscience Australia (ga.gov.au)NTMcArthurOnshore exploration   Resourcing the Territory (nt.gov.au)NTMoney ShoalMoney Shoal Basin   Geoscience Australia (ga.gov.au)QLDMisa andGas Industry Existing Areas - GasFields Commission QueenslandGeorginaGas Industry Existing Areas - GasFields Commission QueenslandQLDNurraySedimentary basins - NSW Resources and GeoscienceNSWMyaliaGedimentary basins - NSW Resources and GeoscienceNTNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)NUNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy gov.au) Page 8SAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVictOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTSorrelRemark Trough area (including the Nadda and Berri basins)SAPoldaPolda Basin   (energymining.sa.gov.au)NTSourelSimpson Basin   Geoscience Australia (ga.gov.au)SASimpsonSimpson Basin   (energymining.sa.gov.au)ASunt NicholsonPOINTSourelSurat Basin   Geoscience Australia (ga.gov.au)QLD<	QLD	Hillsborough	Hillsborough Basin   Geoscience Australia (ga.gov.au)
QUDLakefieldLaura and Lakefield Basins   Geoscience Australia (ga.gov.au)NSWtormeLorme Basin   Geoscience Australia (ga.gov.au)QLDMaryborough Basin   Geoscience Australia (ga.gov.au)NTMoney ShoalMoney Shoal Basin   Geoscience Australia (ga.gov.au)NTMoney ShoalMoney Shoal Basin   Geoscience Australia (ga.gov.au)QLDMt Isa and GeorginaGas Industry Exisiting Areas - GasFields Commission Queensland (gasfieldscommissionqld.org.au)NSWMurraySedimentary basins - NSW Resources and GeoscienceNSWMyaliSedimentary basins - NSW Resources and GeoscienceQLDNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVicOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTSavoryCh22 centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSourh NicholsonPOINTSaStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSA <th>QLD</th> <td>Ipswich</td> <td>Ipswich Basin   Geoscience Australia (ga.gov.au)</td>	QLD	Ipswich	Ipswich Basin   Geoscience Australia (ga.gov.au)
QL0MaryboroughMaryborough Basin   Geoscience Australia (ga.gov.au)NTMcArthurOnshore exploration   Resourcing the Territory (nt.gov.au)NTMoney ShoalMoney Shoal Basin   Geoscience Australia (ga.gov.au)QL0MtIsa and GeorginaGas Industry Exisiting Areas - GasFields Commission Queensland (gasfieldscommissionqld.org.au)NSWMurraySedimentary basins - NSW Resources and GeoscienceNSWMyralSedimentary basins - NSW Resources and GeoscienceQLDNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenRelinentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)QLDNorth BowenRelinentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVicOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTSavoryCh22 Centralian Superbasin.gdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSourd NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSydney Basin   Geoscience Australia (ga.gov.au)QLDSyratSurat Basin   Geoscience Australia (ga.gov.au) <tr< th=""><th>QLD</th><td></td><td>Laura and Lakefield Basins   Geoscience Australia (ga.gov.au)</td></tr<>	QLD		Laura and Lakefield Basins   Geoscience Australia (ga.gov.au)
NTMcArthurOnshore exploration   Resourcing the Territory (nt.gov.au)NTMoney ShoalMoney Shoal Basin   Geoscience Australia (ga.gov.au)QLDMtIsaandGasGeorginadigafieldscommissionqld.org.au)NSWMurraySedimentary basins - NSW Resources and GeoscienceNSWMyallSedimentary basins - NSW Resources and GeoscienceQLDNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceQLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVicOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSourth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStassbur	NSW	Lorne	Lorne Basin   Geoscience Australia (ga.gov.au)
NTMoney ShoalMoney Shoal Basin   Geoscience Australia (ga.gov.au)QLDMtIsaand (gasfieldscommissionqld.org.au)NSWMurraySedimentary basins - NSW Resources and GeoscienceNSWMyallSedimentary basins - NSW Resources and GeoscienceQLDNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTViccOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSourelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSourtStansburyStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSourelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSourelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSourelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSourel<	QLD	Maryborough	Maryborough Basin   Geoscience Australia (ga.gov.au)
QLDMtIsaand (gasfieldscommissionqld.org.au)NSWMurraySedimentary basins - NSW Resources and GeoscienceNSWMyallSedimentary basins - NSW Resources and GeoscienceQLDNambourNambourNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8SAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVicOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSourdlStansbury Basin   Geoscience Australia (ga.gov.au)NTSourdlStansbury Basin   (energymining.sa.gov.au)NTSourdlStansbury Basin   (energymining.sa.gov.au)NTSourdlStansbury Basin   Geoscience Australia (ga.gov.au)QLDStyxStansbury Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)QLDTownsville Basin   Geoscience Australia (ga.gov.au)QLDSydneySydney Basin	NT	McArthur	Onshore exploration   Resourcing the Territory (nt.gov.au)
QUDGeorgina(gasfieldscommissionqld.org.au)NSWMurraySedimentary basins - NSW Resources and GeoscienceNSWMyallSedimentary basins - NSW Resources and GeoscienceQLDNambourNambour Basin ] Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficerBasin ] Geoscience Australia (ga.gov.au)NTOrdPOINTVicOtwayRegional Geology of the Otway Basin ] Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin ] (energymining.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin ] (energymining.sa.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin ] Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin ] Geoscience Australia (ga.gov.au)QLDSivaStyx Basin ] Geoscience Australia (ga.gov.au)QLDSivatSurat Basin ] Geoscience Australia (ga.	NT	Money Shoal	Money Shoal Basin   Geoscience Australia (ga.gov.au)
NSWMyaliSedimentary basins - NSW Resources and GeoscienceQLDNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8SMOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStratStyx Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStryaStyy Basin   Geoscience Australia (ga.gov.au)QLDStryaStyy Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)QLDStryaStyy Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)	QLD		
QLDNambourNambour Basin   Geoscience Australia (ga.gov.au)NTNgaliaGEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)QLDStratSurat Basin   Geoscience Australia (ga.gov.au)QLDStratSurat Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience	NSW	Murray	Sedimentary basins - NSW Resources and Geoscience
NTNgaliaGEEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark TroughRenmark Trough area (including the Nadda and Berri basins) (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSouth NicholsonPOINTSutansburyStansburyStansburyStansburyStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSydneySydney Basin   Geoscience Australia (ga.gov.au)NWSydneySydney Basin   Geoscience Australia (ga.gov.au)NWSydneySydney Basin   Geoscience Australia (ga.gov.au)NWVictoriaPOINTSAYadneySydney Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAStansburyStansburySansburySydney Basin   Geoscience Australia (ga.gov.au)NWSydneySydney Basin   Geoscience Australia (ga.gov.au)NWSydneySydney	NSW	Myall	Sedimentary basins - NSW Resources and Geoscience
QLDNorth BowenNATIONAL GAS INFRASTRUCTURE PLAN Interim Report (energy.gov.au) Page 8NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark Trough (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   Geoscience Australia (ga.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)QLDVictoriaPOINTSAWarburtonWarburton Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINT	QLD	Nambour	Nambour Basin   Geoscience Australia (ga.gov.au)
QLDNorth Bowen§NSWOaklandsSedimentary basins - NSW Resources and GeoscienceSAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark Trough (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)NTSourtlRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSourtlStansburyStansburyStansbury Basin   Geoscience Australia (ga.gov.au)QLDSirvatSurat Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINT	NT	Ngalia	GEMIS: Petroleum Basin Studies: Ngalia Basin (nt.gov.au)
SAOfficerOfficer Basin   Geoscience Australia (ga.gov.au)NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark Trough (petroleum.sa.gov.au)SARenmark Trough (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Geoscience Australia (ga.gov.au)	QLD	North Bowen	
NTOrdPOINTVICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark Trough (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSASydneySydney Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Geoscience Australia (ga.gov.au)	NSW	Oaklands	Sedimentary basins - NSW Resources and Geoscience
VICOtwayRegional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark TroughRenmark Trough area (including the Nadda and Berri basins) (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburton Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburton Basin   Geoscience Australia (ga.gov.au)	SA	Officer	Officer Basin   Geoscience Australia (ga.gov.au)
NTPedirkaGEMIS: Geology and mineral resources of the Northern Territory: Pedirka BasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark TroughRenmark Trough area (including the Nadda and Berri basins) (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburton Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburton Basin   Geoscience Australia (ga.gov.au)	NT	Ord	POINT
NIPedirkaBasinSAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark TroughRenmark Trough area (including the Nadda and Berri basins) (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Genergymining.sa.gov.au)NTWisoPOINT	VIC	Otway	Regional Geology of the Otway Basin   Geoscience Australia (ga.gov.au)
SAPoldaPolda Basin   (energymining.sa.gov.au)SARenmark TroughRenmark Trough area (including the Nadda and Berri basins) (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Genergymining.sa.gov.au)NTVictoriaPOINT	NT	Pedirka	GEMIS: Geology and mineral resources of the Northern Territory: Pedirka
SARenmark TroughRenmark Trough area (including the Nadda and Berri basins) (petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINT		T Cull Ka	Basin
SARenmark Trough(petroleum.sa.gov.au)NTSavoryCh22 Centralian Superbasin.pdfSASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   Genergymining.sa.gov.au)	SA	Polda	
SASimpsonSimpson Basin   (energymining.sa.gov.au)TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   (energymining.sa.gov.au)NTWisoPOINT	SA	Renmark Trough	
TASSorrelRegional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   (energymining.sa.gov.au)NTWisoPOINT	NT	Savory	Ch22 Centralian Superbasin.pdf
NTSouth NicholsonPOINTSAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   (energymining.sa.gov.au)NTWisoPOINT	SA	Simpson	Simpson Basin   (energymining.sa.gov.au)
SAStansburyStansbury Basin   (energymining.sa.gov.au)QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   (energymining.sa.gov.au)NTWisoPOINT	TAS	Sorrel	Regional Geology of the Sorell Basin   Geoscience Australia (ga.gov.au)
QLDStyxStyx Basin   Geoscience Australia (ga.gov.au)QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)QLDTownsvillePOINTVictoriaPOINTSAWarburtonWarburton Basin   (energymining.sa.gov.au)NTWisoPOINT	NT	South Nicholson	POINT
QLDSuratSurat Basin   Geoscience Australia (ga.gov.au)NSWSydneySydney Basin   Geoscience Australia (ga.gov.au)QLDTownsvilleTownsville Basin   Geoscience Australia (ga.gov.au)NTVictoriaPOINTSAWarburtonWarburton Basin   (energymining.sa.gov.au)NTWisoPOINT	SA	Stansbury	Stansbury Basin   (energymining.sa.gov.au)
NSW     Sydney     Sydney Basin   Geoscience Australia (ga.gov.au)       QLD     Townsville     Townsville Basin   Geoscience Australia (ga.gov.au)       NT     Victoria     POINT       SA     Warburton     Warburton Basin   (energymining.sa.gov.au)       NT     Wiso     POINT	QLD	Styx	Styx Basin   Geoscience Australia (ga.gov.au)
QLD     Townsville     Townsville Basin   Geoscience Australia (ga.gov.au)       NT     Victoria     POINT       SA     Warburton     Warburton Basin   (energymining.sa.gov.au)       NT     Wiso     POINT	QLD	Surat	Surat Basin   Geoscience Australia (ga.gov.au)
NT     Victoria     POINT       SA     Warburton     Warburton Basin   (energymining.sa.gov.au)       NT     Wiso     POINT	NSW	Sydney	Sydney Basin   Geoscience Australia (ga.gov.au)
SA     Warburton     Warburton Basin   (energymining.sa.gov.au)       NT     Wiso     POINT	QLD	Townsville	Townsville Basin   Geoscience Australia (ga.gov.au)
NT Wiso POINT	NT	Victoria	POINT
	SA	Warburton	Warburton Basin   (energymining.sa.gov.au)
NT Wolfe POINT	NT	Wiso	POINT
	NT	Wolfe	POINT