

**ACCC REVIEW OF UPSTREAM COMPETITION AND THE TIMELINESS OF SUPPLY: ISSUES
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SUBMISSION BY ARROW ENERGY PTY LTD

1. Introduction

- 1.1. Arrow Energy Pty Ltd (“Arrow”) is an incorporated joint venture between Shell and PetroChina. For more than 20 years, Arrow has delivered Queensland gas to market, providing reliable fuel and feedstock to local customers. Arrow’s mission is to sustainably deliver more gas – creating shared value and fuelling the energy transition.
- 1.2. In April 2020, Arrow sanctioned the commencement of the first phase of the Surat Gas Project (“SGP”) despite the uncertainties created by COVID-19. This significant long-term investment, underpinned by one of Australia’s largest gas sales agreements (“GSAs”), shows our commitment to bringing gas to market and Australia’s economic recovery. SGP phase 1 construction has commenced, with the first new gas production to occur later in 2021. In an increasingly complex and rapidly changing energy market, fiscal certainty and stability are critical factors in making long-term capital-intensive investment decisions like the decision to proceed with the SGP.
- 1.3. Arrow welcomes the opportunity to provide feedback on the Australian Competition and Consumer Commission’s (“ACCC”) issues paper on its review of upstream competition and the timeliness of supply. Accordingly, Arrow has set out below its observations with respect to certain matters raised in the issues paper.

2. Government processes

- 2.1. Arrow believes that governments can assist in unlocking more onshore gas, reducing costs and promoting investment by removing regulatory barriers and promoting fiscal stability in order to enable safe and responsible gas production for domestic and export markets.
- 2.2. While the Bowen Basin is sometimes looked upon as the panacea to East Coast gas supply, there are a number of economic realities and technical risks that must be overcome, such as the following:
 - a. Although in-place gas volumes are large, the coals in the Bowen Basin are a marginal resource with low reservoir deliverability and which show large areal variability. This makes a step change scale-up of a Bowen Basin development difficult without de-risking the production potential of new development areas.
 - b. The nature of the coals in the Bowen Basin require complex well designs to enable gas of any significant quantity to be produced. Despite significant improvements in the design and reductions in cost over the last few years, Bowen Basin wells are currently three times more expensive than a Surat Basin well with a similar production rate.
 - c. Demand for gas produced out of the Bowen Basin is currently constrained to the limited number of Central and North Queensland customers located near the Moranbah Gas Project (“MGP”) or serviced by the North Queensland Gas Pipeline.

- d. The costs of having to commit to firm pipeline capacity without further ongoing exploration and appraisal programs, which result in high greenhouse gas emissions from flaring and venting.
 - e. Gas prices reflective of the cost of production plus economic margin, and large demand volumes, are both critical to underpin any commercially viable expansion of the Bowen Basin. In 2018, the ACCC estimated that Bowen Basin lifecycle costs were at the top end of the East Coast unconventional cost curve of \$5.90GJ-\$6.80GJ ex well head (ACCC Gas Inquiry Interim Report: December 2018 at page 63, Chart 2.13). This does not include the additional costs associated with gas processing, compression and transportation.
 - f. The additional complexity, not seen elsewhere in Australia, due to interfaces between mining and gas companies who often target the same geological formations.
 - g. Long lead times to get gas to market which are influenced by such factors as:
 - i. the time taken to ramp up production as part of feasibility studies;
 - ii. engineering design;
 - iii. contracting arrangements; and
 - iv. construction times.
- 2.3. Arrow is exploring collaboration opportunities with other market participants. However, government initiatives must consider the current realities of Bowen Basin production and the Central and North Queensland market. These initiatives ought to focus on increasing gas demand volumes through connection to the East Coast gas market and/or significant growth in the Central and North Queensland markets. Existing infrastructure could support a three-fold increase in production within two years if there was sufficient demand in those markets.
- 2.4. Arrow welcomes the opportunity to collaborate with government regarding onshore gas development in Australia and solutions to see more gas brought to market, particularly given the key role it plays in the transition to a lower emissions future.

3. Barriers faced by producers

- 3.1. Coal seam gas ("CSG") development requires the development of a large resource and long-term capital intensive investment, which brings with it significant levels of risk. Further, CSG resources are inherently unpredictable which exacerbates the risks.
- 3.2. In order to mitigate these risks, such large-scale investment needs to be underpinned by a certain degree of predictability. The less predictability associated with CSG development, the more difficult it is to justify investment.
- 3.4. The Australian CSG industry operates in a highly regulated environment and open-ended regulatory processes that are not subject to statutory timeframes or statutory resolution mechanisms are a key barrier faced by Arrow when developing its tenements. This increases the level of unpredictability associated with CSG development, increases risks and costs, and impacts on the timing of developments. Below are some key examples of this occurring in the Queensland regulatory processes:
 - a. **Regional Interests Development Approvals ("RIDA") under the *Regional Planning Interests Act 2014 (Qld)* ("RPI Act")**

Unlike the other CSG proponents that operate in the Surat Basin, Arrow's resource spans across intensively farmed land ("IFL"). This adds significant additional regulatory requirements, one of those being the requirement to obtain a RIDA.

The RPI Act seeks to constrain resource industry rights in areas identified by the State as “Strategic Cropping Land” (which includes IFL) and requires a RIDA before certain resource activities can occur.

Arrow is supportive of the intent of the RPI Act as it stands, where it supports co-existence by striking the right balance in protecting the State’s resources and agricultural interests rather than only protecting the State’s agricultural interests at the cost of inhibiting resource development. Arrow remains committed to coexistence as demonstrated by Arrow’s current coexistence commitments with respect to IFL. However, there are no statutory timeframes under the RPI Act for the assessment and granting of RIDA applications and this adds to the uncertainties that Arrow has had to manage with respect to its SGP.

b. Alternative Arrangements

Arrow’s CSG operations are subject to environmental authority conditions, which include requirements to comply with prescribed noise limits. The prescribed limits can be stricter than normal background noise levels. Environmental authorities allow for Arrow to agree alternative ways to manage noise impacts with those that are, or are likely to be, affected by Arrow’s activities – also referred to as an Alternative Arrangement.

This gives Arrow the flexibility to locate wells and facilities at the optimum locations notwithstanding the noise limits prescribed in the relevant environmental authority. However, if Arrow cannot reach agreement on an Alternative Arrangement, it must find alternative sites for its infrastructure which can have a significant impact on the scope and timing of a project. Alternative Arrangements are not subject to a statutory process or any statutory mechanism to facilitate agreement which adds uncertainty for CSG development.

c. Uncapped liability for Conduct and Compensation Agreement (“CCA”) costs

Under the *Mineral and Energy Resources (Common Provisions) Act 2014* (Qld) (“MERC Act”), in order to conduct certain CSG activities on private land, one of the requirements is to enter into a CCA with the relevant owner and occupier of the land beforehand. Further, under the MERC Act, Arrow is liable to pay an owner’s / occupier’s costs incurred (including legal costs) in negotiating a CCA. There is no statutory limit to these costs and Arrow has observed that this has provided little incentive for the efficient negotiation of CCAs outside of the alternative dispute resolution and Land Court process. This adds to the uncertainty and risks for CSG development and impacts on the timing of supply.

- 3.5. The ACCC acknowledges in its issues paper that access to gas processing and other upstream infrastructure is another significant barrier that smaller producers can face when developing their tenements. However, this is a barrier that Arrow has also faced.
- 3.6. Arrow’s and QGC’s collaboration in the Surat Basin, which has enabled Arrow to access QGC’s gas processing and water treatment infrastructure, is a good example of how access to third party infrastructure facilitates bringing gas to market. Without guaranteed long term access to QGC’s infrastructure to meet Arrow’s long-term gas supply obligations, Arrow’s SGP would not have been economically viable.
- 3.7. In addition, the MGP joint venture recently entered into an arrangement for the provision of gas compression services to an industrial customer in the Bowen Basin and Arrow continues to work with other parties in the Surat and Bowen Basins to explore opportunities to collaborate with respect to access to Arrow’s upstream infrastructure.

- 3.8. Improving the transparency of spare capacity in upstream gas facilities such as pipelines, central gas processing facilities and mid-line compression facilities (i.e. field compression facilities) may assist in addressing the challenges faced in relation to accessing upstream infrastructure.

4. Joint venture (“JV”) arrangements

- 4.1. Gas development, particularly CSG development, is inherently risky and costly. As the ACCC acknowledges in its issues paper, the purpose of JVs is to share risks and costs in order to bring them to acceptable levels for investment. Accordingly, JVs play a part in bringing gas to market.
- 4.2. However, it is by the very nature of the sharing of risks, costs and benefits that unanimous or majority decision making is required in most JVs which can affect the timing of development. Other factors that influence this are that:
- a. each JV participant will have their own risk appetite for investment;
 - b. each JV participant can use their voting power to influence outcomes. Non-operator JV participants can often hold substantial control over unincorporated JV activities and what a JV operator can do can be restricted by a non-operator JV participant;
 - c. a practical sole risk approach is challenging when it comes to JVs for CSG development. As mentioned above, CSG development requires the development of a large resource and long-term capital intensive investment. Under an unincorporated JV, the extensive upstream infrastructure and the associated costs are shared between the JV participants. Trying to segregate a sole risk project that is within, or co-located to, an existing JV development is difficult and potentially uneconomic if the sole risk party cannot gain access to the unincorporated JV’s infrastructure. This may be overcome if the unincorporated JV participants have considered how sole risk projects are dealt with under the unincorporated JV arrangements upfront.
- 4.3. In terms of dealing with the above matters, there may be ways for JV participants to structure JV arrangements in a manner that allows other JV participants to invest in bringing gas to market when one or more of the other JV participants chooses not to invest (e.g. “right of first refusal” or “use it or lose it” clauses). However, notwithstanding this, JV participants will only invest in projects that are economically viable and such mechanisms should not diminish the purpose and benefits of parties entering into JVs.
- 4.4. On a related matter, the stamp duty payable for changes to existing JV arrangements can pose a barrier to JV participants making changes such as the one mentioned in paragraph 4.5.
- 4.5. Arrow does not consider that regulatory intervention in, or any other form of oversight of, JV arrangements is required. JV arrangements are negotiated by commercially sophisticated parties and are commercial in confidence, with each arrangement being unique to the JV participants’ commercial interests and risk appetites. The JV participants are best placed to determine the sharing of risks, costs and benefits under the JV. Regulatory intervention or oversight has the potential to create uncertainty and may impact on the economics underpinning decisions by parties to enter into JVs.
- 4.6. If the other risks and uncertainties associated with gas development can be dealt with or reduced, then there may be less need for parties to enter into JVs for gas development.

5. Joint and separate marketing by unincorporated JVs

- 5.1. By virtue of the sharing of risks, costs and infrastructure under unincorporated JVs, it follows that JV participants may see benefits in jointly marketing gas. This is particularly the case where one JV participant has expertise and experience in gas marketing, whereas other participants may be contributing additional things to the JV (for example, financial strength or development expertise).
- 5.2. In terms of whether joint marketing by unincorporated JVs can affect the timeliness of supply, joint marketing of gas requires all JV participants' agreement on all gas supply terms and conditions with customers. It is inevitable that disagreements between JV participants on the supply terms and conditions will arise, and the resolution of these issues and the negotiation of GSAs can take time and ultimately impact on the timing of supply. This does not mean there is a fundamental issue with joint marketing – delays can also occur in negotiations between a single supplier and customer.
- 5.3. In terms of separate marketing by JVs, one of the challenges is that the nature of CSG development requires a steady level of production matched with a consistent level of demand. The lack of connectivity and storage in the Queensland gas system makes it very difficult to manage situations where CSG production does not match demand. The physics of gas desorption from coal seams as water is pumped off does not readily allow for swinging production up and down (i.e. temporarily shutting in or turning down CSG wells). This means that JV participants who are separately marketing CSG need to make sure that the volume of CSG that they sell matches their respective participating share of a steady level of production. The cost of JV participants having to separately manage the risks of production and demand mismatches through investment in storage and transportation can become cost prohibitive.
- 5.4. When it comes to balancing arrangements for separate marketing by unincorporated JVs, these need to be to the benefit of all JV participants. An example of where establishing balancing arrangements can be difficult is where one JV participant has more of an ability to “balance up” than the other JV participants. This can be overcome by including a mechanism to “financially close” large or long-standing imbalances. Further, access to a fungible market would assist in the structuring and simplification of such mechanisms.

6. Decisions on when to develop new sources

- 6.1. The timing of the development of new sources of CSG is primarily driven by the size and scale of investment required, the ability to access upstream infrastructure, and there being a commercially viable path to market. As mentioned above, CSG development requires the development of a large resource and long-term capital intensive investment, which brings with it significant levels of risk.
- 6.2. In order to justify an investment of that scale, time needs to be taken to de-risk a project by proving up a large CSG resource, securing long-term GSAs with firm supply obligations for a volume that matches the proven CSG resource, and securing any required long-term access to upstream infrastructure in order to have certainty about the return on investment. The firm supply obligations are critical to CSG developments because, unlike conventional gas reservoirs, the physics of gas desorption from coal seams as water is pumped off does not readily allow for swinging production up and down to meet flexible demand.
- 6.3. While short-term GSAs or spot trades are also taken into consideration, such supply arrangements of themselves are not sufficient to underpin such large-scale investment.
- 6.4. In order to meet the supply obligations under the long-term GSAs that underpin CSG investment, producers need to retain tenure in order to maintain access to a resource that can produce the volumes of gas required to be supplied under the GSAs for the duration of the term of those GSAs.

- 6.5. Further, a CSG reservoir will span across a number of gas fields and usually CSG produced from different gas fields will feed into a single compression station. Accordingly, the development of CSG fields and the rate of development are generally limited by the gas compression and pipeline infrastructure capacity that is available (i.e. CSG production cannot exceed the capacity of available gas compression facilities at any point in time). This means that development cannot occur in all CSG fields held by a producer at the same time or rate. A phased development approach for CSG needs to be adopted having regard to gas compression capacity. It is also for this reason that CSG producers need to retain tenure for the duration of long-term GSAs even though development may not occur immediately or in the short-term.
- 6.6. As mentioned earlier, the nature of CSG development requires a steady level of production matched with a consistent level of demand. Another reason why a phased CSG development approach needs to be adopted, and tenure needs to be retained to allow for this, is because the development of CSG fields and the rate of development are also constrained by CSG producers' limited ability to store large volumes of CSG to manage the risks of production and demand mismatches. As mentioned earlier, the lack of connectivity and storage in the Queensland gas system makes managing these risks very difficult. Also, the geology of Queensland CSG reservoirs does not support large scale storage and the investment in other means of storage is cost prohibitive. Historically, CSG producers utilised the electricity market as a means to monetise uncontracted volumes in instances where supply and demand did not match. In recent years, the underlying economics of the National Electricity Market have been impacted by increasing renewable generation capacity entering the market. In the absence of large-scale gas storage projects, other alternative sources of gas demand will be required to manage the risks and support investment decisions in large-scale development of CSG resources.