

Surat - EPBC Approval 2010/5344 Annual Compliance Report 2022/2023

Surat Gas Project

22 October 2022 to 21 October 2023

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EPBC Approval 2010/5344 Annual Compliance 2022/2023 Report

Arrow Surat Gas Expansion Project (SGP)

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1. Purpose

This report addresses Arrow's compliance with the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Approval 2010/5344 (EPBC Approval) for the annual period between 22 October 2022 to 21 October 2023.

2. Description of activities

2.1 Approved activities

EPBC Number – 2010/5344

Arrow Surat Gas Expansion Project (SGP), Surat Basin, Queensland, Australia

Approval Holder: Arrow Energy Pty Ltd

ABN: 73 078 521 936

Approved Action: To expand coal seam gas operations in the Surat Basin, Queensland, as described in the referral received under the EPBC Act on 2 February 2010; and as described in the Surat Gas Project Environmental Impact Statement (March 2012) and Supplementary Report to the Environmental Impact Statement (June 2013). [See EPBC Act referral 2010/5344].

Decision Date: 19 December 2013

Variation Date: 29 March 2022

Action Commencement Date: 22 October 2020

Location of Project: Surat Basin

Person Accepting responsibility for the report: Godson Njoku, CEO Arrow Energy

Dates for Reporting period: 22 October 2022 to 21 October 2023

Date of Preparation of report: 22 December 2023

2.2 Current activities

Clearing activities for the following projects occurring in Petroleum Leases (PL) 1039, 194, 198, 230, 238, 252 and 260 were completed or commenced during the current reporting period:

- Daandine Nandi Section 3
- Duleen Kupunn Part 2
- Duleen Kupunn West
- Grassdale Rd P1

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- KNJV Initial Development
- Kupunn Nandi Part 1
- Kupunn Nandi Part 2
- Nandi Springvale Part 1
- Nandi Springvale Part 2
- Road Scope – Grassdale Rd P1 – Springvale Road
- Road Scope - Grassdale Road Part 1 - Abernethy Road
- Tipton 2022 Wells

3. Approval conditions

3.1 Compliance table

Refer to Appendix A for the EPBC Approval Conditions Compliance Table, which demonstrates that all EPBC Approval 2010/5344 conditions have been considered and addressed and compliance status of these conditions noted.

Records substantiating all activities associated with or relevant to approval conditions are stored in Arrow's file directories.

3.2 Referenced management plans

The following management plans required under the EPBC Approval conditions are implemented and available on Arrow's website.

- Surat Gas Project Species Impact Management Plan, November 2018 (SIMP).
- Surat Gas Project Stage 1 Offset Strategy, June 2019 (Offset Strategy).
- Surat Gas Project Stage 1 CSG Water Monitoring and Management Plan, December 2018 (Stage 1 CSG WMMP).
- Surat Gas Project Updated CSG Water Monitoring and Management Plan, October 2019 (Updated CSG WMMP).

4. Non-compliances

Nil

5. New environmental risks

Nil

6. Report against disturbance limits

In accordance with Condition 28, Table 1 provides "*a report against disturbance limits*" as against the whole of project maximum disturbance limits in Condition 5 of the EPBC Approval, and the maximum disturbance limits for Stage 1 in Condition 6 of the EPBC Approval. For this annual return, all MNES disturbance calculations (see Table 1) for disturbance between 22 October 2020 and 21 October 2023 are based on 'as-disturbed' survey data. MNES disturbance calculations are based on spatial data extracted from the spatial repository on 9 November 2023.

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Table 1: Report against project maximum disturbance limits

Threatened Species#	Whole of project approved limits (ha)	Stage 1 max. disturbance limits (ha)	Cumulative impact total (ha)*
Curly-bark Wattle, <i>Acacia curranii</i>	1,210		0
Hando's Wattle, <i>Acacia handonis</i>	1,210		0
Belson's Panic, <i>Homopholis belsonii</i>	140		0
<i>Prostanthera sp</i> Dunmore	380		0
Small-leaved Denhamia, <i>Denhamia parvifolia</i>	50		0
<i>Calytrix gurlmundensis</i>	1,210		0
Ooline, <i>Cadellia pentastylis</i>	No disturbance		0
Austral Toadflax, <i>Thesium australe</i>	160		0
<i>Acacia lauta</i>	990		0
<i>Xerothamnella herbacea</i>	110		0
Hawkweed, <i>Picris evae</i>	120		0
Austral Cornflower, <i>Rhaponticum australe</i>	160		0
<i>Eucalyptus virens</i>	170		0
King Blue-grass, <i>Dichanthium queenslandicum</i>	160		0
Queensland White-gum, <i>Eucalyptus argophloia</i>	10		0
<i>Macrozamia machinii</i>	No disturbance		0
South-eastern Long-eared Bat, <i>Nyctophilus corbeni</i>	4,080	225	38.83
Dunmall's Snake, <i>Furina dunmali</i>	4,400	300	39.29
Five-clawed Worm-skink, <i>Anomalopus mackayi</i>	560	2	0
Squatter Pigeon (Southern), <i>Geophaps scripta scripta</i>	3,261	203	0
Regent Honeyeater, <i>Anthochaera phrygia</i>	20	1	0
Collared Delma, <i>Delma torquata</i>	90	11	0
Yakka Skink, <i>Egernia rugosa</i>	310	19	0
Australian Painted Snipe, <i>Rostratula australis</i>	5		0
Koala, <i>Phascolarctos cinereus</i>	Not referenced in approval 2010/5344 as these species were listed after approval was granted. However these species are addressed in the approved SIMP and listed here for completeness		
Greater Glider, <i>Petauroides volans</i>			
Painted Honeyeater, <i>Grantiella picta</i>			
Threatened Ecological Communities			
Brigalow (<i>Acacia harpophylla</i> dominant and co- dominant)	106	39	0.06
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	8	8	0
Weeping Myall Woodlands	1	0	0
Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin	0	0	0
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	0	0	0
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	0	0	0

*Areas based upon 'as disturbed' footprints current at 09 November 2023.

7. Declaration of Accuracy

In making this declaration, I am aware that sections 490 and 491 of the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed : _____

Full name: Godson Njoku

Position: Chief Executive Officer

Organisation: Arrow Energy Pty Ltd

ABN: 73 078 521 936

Date: _____

**Appendix A: EPBC Approval 2010/5344 Conditions
Compliance Table**

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Table 2: EPBC Conditions Compliance Table

Condition	Description	Compliant/non-compliant or not applicable	Comments
1	The Minister may determine that a plan, strategy or program approved by the Queensland Government satisfies a plan, strategy or program required under these conditions.	Not applicable	Noted.
2	For the purpose of the action, the approval holder must not take any action outside the project area.	Compliant	Activities during the reporting period were undertaken in PL1039, PL194, PL198, PL230, PL238, PL252 and PL260 which are all within the project area.
3	The action is limited to a maximum of 6,500 coal seam gas production wells and associated infrastructure	Compliant	The total number of production wells installed since the Action commenced is 247.
4	The approval holder must not undertake hydraulic fracturing.	Compliant	Hydraulic fracturing was not undertaken during the reporting period.
5	To protect those EPBC listed species and communities within the project area the maximum disturbance limits in Table 1 apply to the project. The approval holder must not exceed these maximum disturbance limits.	Compliant	Refer to Table 1 of this EPBC 2010/5344 Annual Compliance Report. Arrow has not exceeded these limits.
6	To protect those EPBC listed species and communities within the project area the maximum disturbance limits in Table 2 apply to Stage 1. The approval holder must not exceed these maximum disturbance limits.	Compliant	Table 1 of this EPBC 2010/5344 Annual Compliance Report reconciles the planned impact of Project Stage 1 with the Project Stage 1 maximum disturbance limits as referenced in the approved SGP Offset Strategy. Arrow has not exceeded these limits.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
7A	<p>Prior to the commencement of Stage 1, the approval holder must prepare and submit an EPBC Species Impact Management Plan for the Minister's written approval. The EPBC Species Impact Management Plan must include:</p> <p>a. measures that will be taken to avoid, mitigate and manage impacts to EPBC listed threatened species and their habitat during clearance of vegetation, including the involvement of a suitably qualified person at all times during clearance of vegetation;</p> <p>b. measures that will be taken to avoid, mitigate and manage impacts to EPBC listed threatened species and their habitat and to EPBC communities during construction, operation and decommissioning of the action;</p> <p>c. a monitoring program to determine the success of impacts avoidance and mitigation measures and that will inform adaptive implementation of the action to ensure adaptive management for the duration of this approval; and</p> <p>d. a description of how measures proposed in the EPBC Species Impact Management Plan are consistent with the measures in relevant conservation advice, recovery plans and threat abatement plans.</p>	Compliant	Arrow prepared and had approved by the minister, an EPBC Species Impact Management Plan (SIMP) for Project Stage 1 (approval date 14 December 2018) which was prior to the start of the SGP Project (22 October 2020).

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Condition	Description	Compliant/non-compliant or not applicable	Comments
7B	The approval holder must not commence Stage 1 until an EPBC Species Impact Management Plan has been approved by the Minister in writing. The approved EPBC Species Impact Management Plan must be implemented by the approval holder.	Compliant	<p>Arrow prepared and had approved by the Minister (in writing) an EPBC SIMP for Project Stage 1 (approval date 14 December 2018) which was prior to the start of the SGP Project (22 October 2020). The approved SIMP is being implemented.</p> <p>Specific measures implemented from the SIMP include:</p> <ul style="list-style-type: none"> • Arrow follows hierarchical management principles used to avoid, minimise and mitigate impacts to ecological values when positioning infrastructure. These principles are reflected in standard Arrow procedures. • Undertaking pre-clearance surveys of disturbance areas to identify any MNES values actually, or potentially, present. MNES habitats and TECs are delineated spatially prior to disturbance commencing. • No go areas are demarcated on-ground to prevent over-clearing. • Where impacts cannot be avoided, a qualified fauna spotter-catcher is present during clearing, with capture/release points captured as GPS coordinates. Records of these are maintained. • 'As-disturbed' survey data is provided by construction contractors permitting tracking of MNES disturbances against Table 1 of the approval. • Rehabilitation is undertaken of disturbed areas following completion of construction activities.
8A	If the approval holder has provided an offset in respect of impacts predicted for a development stage of the project which subsequently are not realised, such parts of the offset in excess of the obligation for that development stage can be applied towards offsets required for the impacts of subsequent development stages.	Not applicable	This condition has not applied for the reporting period.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
8B	The Offset Strategy may be prepared and submitted to the Minister for approval in stages. Each stage of the Offset Strategy must provide information in respect of the subsequent development stage to commence and all earlier development stages. A development stage must not commence until an Offsets Strategy addressing offset obligations for that development stage has been approved by the Minister.	Compliant (note delays to the Stage 1 activities)	<p>Arrow's Surat Gas Project Stage 1 Offset Strategy (28 June 2019) was approved by the Minister on 7 July 2019 prior to commencement of SGP Stage 1 development activities on 22 October 2020.</p> <p>A revised Stage 1 Offset Strategy was submitted to DCCEEW for approval in March 2023 to exclude offsets for MNES fauna species listed after the referral decision, being Koala (<i>Phascolarctos cinereus</i>), Greater Glider (<i>Petauroides volans</i>) and Painted Honeyeater (<i>Grantiella picta</i>). Impacts to these species or species habitat are assessed as state matters under the SGP Environmental Authorities and subsequently the <i>Queensland Environmental Offsets Act 2014</i>.</p> <p>On 13 September 2023, having regard to the de-listing of <i>Philotheca sporadica</i> (Kogan Waxflower) and delays to the carrying out of the Stage 1 activities as described in the approved Stage 1 Offset Strategy, a further revised Offset Strategy was submitted to DCCEEW for approval.</p> <p>Notwithstanding the revisions to the Offset Strategy, there have been no changes to the Stage 1 activities as contemplated in the approved Stage 1 Offset Strategy. Accordingly, the approved Stage 1 Offset Strategy continues to address the offset obligations for these activities.</p> <p>DCCEEW is yet to approve the revised Offset Strategy.</p>
8C a)	The Offset Strategy must: a. include a strategy to secure the offsets proposed for the residual significant impacts to the EPBC listed species and EPBC communities for the subsequent development Stage;	Compliant	As described in the Stage 1 Offsets Strategy (Section 4), Arrow will secure Stage 1 offsets proposed for the residual significant impacts to the EPBC listed species and EPBC communities through a combination of direct land-based offsets and indirect offsets (i.e. other compensatory measures) in accordance with the EPBC Act Offsets Policy.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
8C b)	The Offset Strategy must: b. include a map of the location of each EPBC listed threatened species and its habitat and EPBC community in relation to infrastructure for the subsequent development stage;	Compliant	Arrow has provided maps in Section 5 of the Stage 1 Offset Strategy showing habitat for the EPBC listed threatened species and communities (as relevant) that were predicted to be impacted at the time the Stage 1 Offset Strategy was prepared based on an indicative location of the Stage 1 activities. It was noted in the Stage 1 Offset Strategy that the specific location of activities may change during the detailed design phase and Arrow shareholder and joint venture partner approval processes. However, the principles and strategies for securing offsets that are presented in the Stage 1 Offset Strategy will be implemented.
8C c)	The Offset Strategy must: c. describe the potential risks to the successful implementation of the Offset Strategy, and the contingency measures that would be implemented to mitigate against these risks;	Compliant	The risks, existing controls, risk rating, monitoring and contingency measures are described in Table 6.1 of the Stage 1 Offsets Strategy.
8C d)	The Offset Strategy must: d. detail how the approval holder will address any residual significant impacts to any EPBC listed threatened species and its habitat and/or EPBC communities not identified in Table 1, in accordance with the EPBC Act Offsets Policy; and	Compliant	No significant residual impacts to EPBC listed threatened species and its habitat and/or EPBC communities that were listed under the EPBC Act at the time of the approval but not identified in Table 1 of the EPBC approval have occurred. The Stage 1 Offset Strategy (Section 7.2) describes the process that Arrow follows to identify potential residual impacts to EPBC listed threatened species and their habitat and/or EPBC communities that were listed under the EPBC Act at the time of the approval but not identified in Table 1 of the EPBC approval. This includes notification to DCCEE. Some species have been listed under the EPBC Act since the approval of EPBC 2010/5344 and as advised by DCCEE, Arrow will be offsetting these species under the State approval process and the <i>Environmental Offsets Act 2014</i> (Qld). The revised Stage 1 Offset Strategy, which is currently being assessed by DCCEE, better reflects this approach.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
8C e)	The Offset Strategy must: e. specify the proposed legal mechanism and timeframe for securing the offset(s).	Compliant	<p>The Stage 1 Offset Strategy (Section 8), identified that the mechanism for securing the offset would be via a Voluntary Declaration under the Vegetation Management Act 1999 (VM Act) (Qld) with the Stage 1 offsets being legally secured prior to commencement of Stage 2.</p> <p>As explained in the comments for Condition 8B above, there have been delays to the carrying out of the Stage 1 activities contemplated in the approved Stage 1 Offset Strategy.</p> <p>Arrow's ability to apply to secure the offset via a Voluntary Declaration is pending DCCEEW's approval of the Stage 1 Offset Area Management Plan (OAMP). This was first submitted to DCCEEW on 21 October 2021, with revised versions submitted on 6 March 2023 and 13 September 2023.</p>

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<p>8D</p>	<p>The approval holder must not commence the action until the Offset Strategy for Stage 1 has been approved by the Minister in writing. The approved Offset Strategy must be implemented by the approval holder.</p>	<p>Compliant</p>	<p>Arrow submitted an Offset Strategy for Stage 1 to the Minister which was approved on 7 July 2019. Stage 1 commenced on 22 October 2020, being after the Offset Strategy was approved. The approved Offset Strategy is being implemented.</p> <p>Specific Offset Strategy measures that have been implanted include:</p> <ul style="list-style-type: none"> • Undertaking pre-clearance surveys of disturbance areas to identify any MNES values actually, or potentially, present. MNES habitats and TECs are delineated spatially prior to disturbance commencing. • No go areas are demarcated on-ground to prevent over-clearing. • Tracking of disturbances to MNES values with the provision of 'as-disturbed' survey data provided by construction contractors. • Progressing with securing a land based offset property for SGP Stage 1 impacts to MNES listed in Table 2 of the approval. • Working with DCCEEW in approving an Offset Area Management Plan for the delivery of offsets under the EPBC Act. <p>The Stage 1 Offset Strategy noted that the specific location of activities may change during the detailed design phase and Arrow shareholder and joint venture partner approval processes. However, the principles and strategies for securing offsets that are presented in the Stage 1 Offset Strategy will be implemented.</p> <p>In Table 6.1 of the Stage 1 Offset Strategy, it stated that the process and measures described in Section 7 (Residual Significant Impacts to other MNES) of the strategy would be implemented for impacts to MNES not contemplated in the strategy.</p>
<p>9A</p>	<p>At least 3 months prior to the commencement of any development stage after Stage 1, the approval holder must submit a revised Offset</p>	<p>Not applicable (note delays to</p>	<p>Stage 2 did not commence during the reporting period.</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
	<p>Strategy for approval by the Minister. The updated Offset Strategy must include:</p> <p>a. a strategy to secure the minimum offsets proposed for the residual significant impacts to the EPBC listed species and communities for the subsequent development stage;</p> <p>b. a map of the location of each EPBC listed threatened species and its habitat and EPBC Community in relation to infrastructure for the subsequent development stage;</p> <p>c. the information required for the Offset Strategy Conditions 8Ca to 8Ce for the subsequent development stage;</p> <p>d. demonstration of how any proposed offset builds on offsets already secured and will contribute to a larger strategic offset for whole of project impacts;</p> <p>e. performance and completion criteria for evaluating the management of offset areas;</p> <p>f. reconciliation of impacts predicted in the subsequent development stage and actual disturbance in preceding development stages against the maximum disturbance limits set out in Table 1.</p>	<p>the Stage 1 activities)</p>	<p>The Offset Strategy will continue to apply to Stage 1, noting that the activities as described in the Offset Strategy for Stage 1 are not yet complete and will continue after year 3 under the approved Offset Strategy. There have been no changes to the Stage 1 activities as contemplated in the approved Stage 1 Offset Strategy and Arrow will remain within the maximum disturbance limits set out in the approved Stage 1 Offset Strategy. Accordingly, the approved Stage 1 Offset Strategy continues to address the offset obligations for these activities.</p> <p>The activities for Stage 2 (being those activities not already contemplated by the Stage 1 Offset Strategy) will not commence before 31 December 2024.</p> <p>Arrow has submitted a revised Stage 1 Offset Strategy reflecting the above to DCCEE for approval. See comments for Condition 8B above.</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
10A	Offsets for development stages must be in accordance with the mechanism identified in the Offset Strategy and must be registered and legally secured in accordance with Queensland legislation prior to commencement of any subsequent development stage.	Compliant	<p>Arrow did not commence a development stage subsequent to Stage 1 during the reporting period.</p> <p>The Stage 1 Offset Strategy (Section 8), identified that the mechanism for securing the offset would be via a Voluntary Declaration under the <i>Vegetation Management Act 1999</i> (VM Act) (Qld) with the Stage 1 offsets being legally secured prior to commencement of Stage 2.</p> <p>As explained in the comments for Condition 8B above, there have been delays to the carrying out of the Stage 1 activities contemplated in the approved Stage 1 Offset Strategy.</p> <p>Arrow's ability to apply to secure the offset via a Voluntary Declaration is pending DCCEEW's approval of the Stage 1 OAMP. This was first submitted to DCCEEW on 21 October 2021, with revised versions submitted on 6 March 2023 and 13 September 2023.</p>

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<p>10B</p>	<p>Within 12 months of project commencement or the Minister approving the Offset Strategy for a subsequent development stage, the approval holder must submit for approval of the Minister an Offset Area Management Plan which includes:</p> <p>a. a description of the management measures that will be implemented to protect EPBC listed threatened species and communities in each offset area;</p> <p>b. details of how the proposed offset(s) and Offset Area Management Plan are consistent with the principles EPBC Act Offsets Policy;</p> <p>c. a field validation survey and baseline description of the current condition (prior to any management activities) of the offset area(s), including existing vegetation;</p> <p>d. a description and map (including shapefile(s)) to clearly define the location and boundaries of the offset area(s), accompanied by the offset attributes;</p> <p>e. information about how the offset area(s) provide connectivity with other relevant habitats and biodiversity corridors including a map depicting the offset areas in relation to other habitats and biodiversity corridors;</p> <p>f. details of how proposed management measures take into account relevant approved conservation advices and are consistent with the measures contained in relevant recovery plans and threat abatement plans;</p> <p>g. completion criteria and performance targets for evaluating the effectiveness of Offset Area Management Plan implementation, and criteria for triggering corrective actions (if necessary);</p> <p>h. a program to monitor, report on and review the effectiveness of the Offset Area Management Plan;</p>	<p>Compliant</p>	<p>Arrow submitted a draft Stage 1 OAMP for approval of the Minister on 21 October 2021 (within 12 months of project commencement). The draft OAMP includes the requirements of Condition 10B a) – i).</p> <p>Revised OAMPs for Stage 1 were submitted on 6 March 2023 and 13 September 2023. Arrow is awaiting approval of the Stage 1 OAMP.</p>
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Condition	Description	Compliant/non-compliant or not applicable	Comments
	i. a description of potential risks to the successful implementation of the offset(s) and Offset Area Management Plan, and contingency measures that would be implemented to mitigate against these risks.		
11A	The approval holder cannot commence the subsequent development stage until the Offset Area Management Plan for the current development stage has been approved by the Minister in writing.	Compliant	See comments for Conditions 10A and 10B above. Arrow did not commence a development stage subsequent to Stage 1 during the reporting period.
13	Prior to commencement, the proponent must submit a Stage 1 Coal Seam Gas Water Monitoring and Management Plan (Stage 1 CSG WMMP) for the approval of the Minister who may seek the advice of an expert panel.	Compliant	The Stage 1 CSG WMMP, addressing all of the requirements of Condition 13, was approved by the then Department of the Environment and Energy on 18 December 2018. This was prior to the commencement of the action on 22 October 2020. The Stage 1 CSG WMMP is published on Arrow's website.
13 a)	The Stage 1 CSG WMMP must include: a. an analysis of the results of the most recent OGIA model (built or endorsed by OGIA), relevant to all of the project's tenement areas;	Compliant	The Stage 1 CSG WMMP (Appendix E) included an analysis of results of the [then] most recent Office of Groundwater Impact Assessment (OGIA) model as described in the Groundwater Modelling Technical Memorandum.
13 b)	The Stage 1 CSG WMMP must include: b. a fit for purpose numerical simulation to assess potential impacts on water resources arising from the action in the project area, subsequent surface water-groundwater interactions in the Condamine Alluvium and impacts to dependent ecosystems;	Compliant	The Stage 1 CSG WMMP (Appendix F) describes the numerical simulation used to assess potential impacts on water resources arising from the action in the project area, subsequent surface water-groundwater interactions in the Condamine Alluvium and impacts to dependent ecosystems.

Condition	Description	Compliant/non-compliant or not applicable	Comments
13 c)	The Stage 1 CSG WMMP must include: c. an assessment of potential impacts from the action on non-spring based groundwater dependent ecosystems through potential changes to surface-groundwater connectivity and interactions with the sub-surface expression of groundwater;	Compliant	<p>The Stage 1 CSG WMMP (Section 3.4.2) (Appendix D Section 5) assessed the potential impacts on non-spring based Groundwater Dependent Ecosystems (GDEs).</p> <p>The assessment identified that:</p> <ul style="list-style-type: none"> Ecosystems to the west of Millmerran (south-west of Cecil Plains) along the western slopes of the Kumbarilla Ridge (and western boundary of Arrow tenure) may be dependent on groundwater in the Springbok Sandstone and may be impacted by project-related groundwater drawdown. Ecosystems south and west of Wandoan along minor drainage lines may be dependent on shallow groundwater in the WCM and may be impacted by project-related groundwater drawdown. <p>The actual dependence of these ecosystems on groundwater is the subject of ongoing investigation by Arrow, the findings of which will be incorporated in to the Stage 2 CSG WMMP.</p>
13 d)	The Stage 1 CSG WMMP must include: d. an assessment of predicted project wide groundwater drawdown levels and pressures from the action, together with confidence levels;	Compliant	<p>The Stage 1 CSG WMMP (Section 3) included an assessment of predicted project wide groundwater drawdown levels, potential impacts and confidence levels.</p> <p>The predictions were made using a combination of existing groundwater models, with predicted water extraction for the Arrow SGP indicated a total production of 510 GL over the projected 40 year operational life, with a peak extraction of around 34 GL/yr approximately 7 years after commencement.</p>

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13 e)	The Stage 1 CSG WMMP must include: e. parameters and a sampling regime to establish baseline data for surface and groundwater resources that may be impacted by the action, including: surface and water quantity and quality in the project area, and upstream and downstream of potential impact areas; groundwater quality, levels and pressures for areas that may be impacted by the project; and for determining connectivity between surface water and groundwater that may be impacted by the project;	Compliant	Arrow implemented a groundwater sampling and monitoring regime to establish baseline data for surface and groundwater resources as described in the Stage 1 CSG WMMP (Appendix J). The Stage 1 CSG WMMP monitoring network comprised a total of 105 discrete monitoring intervals (including 57 WCM intervals) at 32 discrete monitoring locations and provided a comprehensive early warning monitoring network.
13 f)	The Stage 1 CSG WMMP must include: f. a best practice baseline monitoring network that will enable the identification of spatial and temporal changes to surface and groundwater. This must include a proposal for aquifer connectivity studies and monitoring of relevant aquifers to determine hydraulic connectivity (including potential groundwater dependence of Long Swamp and Lake Broadwater) and must also enable monitoring of all aquatic ecosystems that may be impacted by the action;	Compliant	Arrow implemented a groundwater sampling and monitoring regime to establish baseline data for surface and groundwater resources as described in the Stage 1 CSG WMMP (Appendix J). The Stage 1 CSG WMMP monitoring network comprises a total of 105 discrete monitoring intervals (including 57 WCM intervals) at 32 discrete monitoring locations and provides a comprehensive early warning monitoring network.
13 g)	The Stage 1 CSG WMMP must include: g. a program to monitor subsidence impacts from the action, including trigger thresholds and reporting of monitoring results in annual reporting required by condition 28. If trigger thresholds are exceeded, the approval holder must develop and implement an action plan to address impacts within 90 calendar days of a trigger threshold being exceeded;	Compliant	In accordance with the requirements of the Stage 1 CSG WMMP (Appendix J), Arrow implements a subsidence monitoring program as described in the Subsidence Technical Memorandum (Appendix K of the Stage 1 CSG WMMP). No exceedance from trigger thresholds has been found.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
13 h)	The Stage 1 CSG WMMP must include: h. provisions to make monitoring results publicly available on the approval holder's website to facilitate a greater understanding of cumulative impacts;	Compliant	<p>Arrow has made public the results of data obtained from the water-related aspects of their monitoring network by providing raw data to the 'Queensland Globe' 25 and publishing on Arrow's website the annual reports (2020-2021 and 2021-2022)</p> <p>In addition, under the Underground Water Impact Report 2021 for the Surat Cumulative Management Area (Surat UWIR 2021 published by OGIA 2022), a water monitoring report is submitted to OGIA at the end of March and September each year that includes details of the monitoring data collected under the Stage 1 CSG WMMP.</p>
13 i)	The Stage 1 CSG WMMP must include: i. a discussion on how the approval holder is contributing to the Joint Industry Plan, including its periodic review. The approval holder must contribute to the Joint Industry Plan and comply with any part of the Joint Industry Plan, or future iterations of the Joint Industry Plan, that applies to the approval holder;	Compliant	<p>As discussed in the Stage 1 CSG WMMP (Section 8), Arrow supports the ongoing application of the Joint Industry Plan (JIP), although no EPBC springs have been identified on Arrow's tenure, and no off-tenure EPBC springs fall under Arrow's responsibility.</p> <p>Arrow contributes to the periodic review of the JIP, including information that supports the JIP, through water-related data collected from Arrow's contribution to the Surat CMA UWIR. Arrow also contributes to the development of knowledge around ecosystem groundwater dependence and interaction through site-specific studies.</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
13 j)	The Stage 1 CSG WMMP must include a groundwater early warning monitoring system, including: <ul style="list-style-type: none"> i. groundwater drawdown limits for all consolidated aquifers potentially impacted by the action, excluding the Walloon Coal Measures; ii. for the Condamine Alluvium, appropriate triggers and groundwater limits and a rationale for their selection; iii. early warning indicators and trigger thresholds, including for Lake Broadwater, Long Swamp and other groundwater dependent ecosystems that may potentially be impacted by the action, including those that may occur outside the project area and may be impacts by the action; and iv. investigation, management and mitigation actions, including substation and/or groundwater repressurisation, for both early warning indicators and trigger thresholds to address flux impacts on the Condamine Alluvium. 	Compliant	As described in the Stage 1 CSG WMMP (Section 5), Arrow implemented an early warning monitoring system, underpinned by a comprehensive early warning monitoring network.
13 k)	The Stage 1 CSG WMMP must include: <ul style="list-style-type: none"> k. early warning indicators and trigger thresholds, including corrective actions for both early warning indicators and trigger thresholds, for aquatic ecology and aquatic ecosystems; 	Compliant	The Stage 1 CSG WMMP (Section 5.3 and Section 6 of Appendix I) described the early warning limits, indicators, trigger thresholds corrective for aquatic ecology and aquatic ecosystems through the implemented Early Warning Management System (EWMS). No exceedance from trigger thresholds has been reported.

Condition	Description	Compliant/non-compliant or not applicable	Comments
13 l)	The Stage 1 CSG WMMP must include: l. a CSG water management strategy for produced salt/brine, which discusses how co-produced water and brine will be managed for the action, including in the context of other coal seam gas activities in the Surat Basin;	Compliant	<p>The Stage 1 CSG WMMP (Section 4.1 and Section 3.2 of Appendix G) described the CSG water management strategy (WMS) for produced salt/brine and how it will be managed for the action.</p> <p>Although the CSG water management strategy includes all possible options for the SGP, it is noted that discharge of CSG water to surface water or re-injection of CSG water are not components of the SGP.</p> <p>Arrows' CSG water management strategy comprises beneficial uses, including water for Arrow operational supply and for supply to existing users. These options aim to maximise beneficial use and reduce the potential for environmental impact.</p>
13 m)	The Stage 1 CSG WMMP must include: m. an analysis of how the approval holder will utilise beneficial use and/or groundwater repressurisation techniques to manage produced CSG water from the action, and how any potential adverse impacts associated with groundwater repressurisation will be managed;	Compliant	<p>The Stage 1 CSG WMMP (Section 3.3 of Appendix G) described how Arrow utilised our beneficial use and/or groundwater re-pressurisation techniques to manage produced CSG water.</p> <p>Arrow's CSG Water Management Strategy considered a range of end uses for treated and untreated CSG water, including agricultural, industrial, domestic and urban applications, aiming to maximise beneficial use and reduce the potential for environmental impact.</p> <p>CSG water injection, either for aquifer re-pressurisation or as a means for CSG water management, is not currently proposed in the CSG WMS for the SGP due to the potential risks to receiving aquifer. Should groundwater re-injection be appraised as viable at some future stage, then to avoid adverse impacts it will be incorporated into future iterations of the WMMP, and progressed operationally under the constraints of an Environmental Authority and in accordance with other regulations such as the <i>Water Supply (Safety & Reliability) Act 2008</i> (Qld).</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
13 n)	The Stage 1 CSG WMMP must include: n. a discharge strategy, consistent with the recommendations and requirements of the Department of the Environment and Heritage Protection in its Assessment Report (pages 94 to 95 and pages 254 to 255) and that includes scenarios where discharge may be required, the quality of discharge water (including water treated by reverse osmosis), the number and location of monitoring sites (including upstream and downstream sites), frequency of monitoring and how the data from monitoring will be analysed and reported, including recommendations on any changes or remedial actions that would be required;	Compliant	Discharge is not proposed to occur during this action.

<p>13 o)</p>	<p>The Stage 1 CSG WMMP must include: o. a flood risk assessment for processing facilities and any raw co-produced water and brine dams, which addresses flood risks to the environment from the action in the case of a 1 :1000 ARI event. The risk assessment should estimate the consequences if major project infrastructure was subject to such an event, including release of brine and chemicals into the environment;</p>	<p>Compliant</p>	<p>The Stage 1 CSG WMMP (Section 4.2 and Appendix H) detailed a flood risk assessment for processing facilities and any raw co-produced water and brine dams involved in the action, as well as the subsequent flood risk management actions.</p> <p>The risk assessment implemented a hierarchy of controls in the following order:</p> <p>I) Hazard elimination This approach seeks to locate infrastructure outside of the mapped inundation area. If a major infrastructure is located outside of the mapped inundation area, the hazard is deemed to have been eliminated and no further risk assessment is required.</p> <p>II) Substitution There are currently no alternatives to the gas processing and co-produced water infrastructure and gasfield layout proposed by Arrow. Substitution is not a feasible control option.</p> <p>III) Engineering controls Where gas processing and co-produced water infrastructure cannot be located outside of the mapped inundation area, engineering controls (e.g., modelling changes to overland flow paths, appropriately designing and operating the structures, dam failure modelling) are in place to prevent and minimise/mitigate the adverse impacts of the flood event.</p> <p>IV) Administrative controls. Administrative controls may include monitoring of storm warning systems and implementing management controls that reduce the risk of infrastructure failing or malfunctioning in flood events.</p> <p>As a part of risk assessment and mitigation, Arrow conducted predictive flood modelling (completed by Worley Parsons 2013) to predict flood levels, extents of inundation, maximum depths and velocities of floodwaters for the 50, 100, 500 and 1,000 years ARI flood events along prominent drainage lines within Arrow's tenements.</p>
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Condition	Description	Compliant/non-compliant or not applicable	Comments
13 p)	The Stage 1 CSG WMMP must include: p. a cumulative impact assessment based on the outputs of the OGIA model which integrates groundwater model outputs with known and potential groundwater dependent ecosystems and presents the outputs in map form. Contribute to investigations coordinated through the OGIA to assess hydrological and ecological characteristics of impacted groundwater dependent ecosystems;	Compliant	The Stage 1 CSG WMMP (Section 8.6 and Section 6 of Appendix D) included a cumulative impact assessment integrating groundwater model outputs (based on the OGIA model) with known and potential groundwater dependent ecosystems. OGIA technical research projects included developing groundwater flow system knowledge and incorporating this in a revised groundwater flow model. This work helped develop the understanding of cumulative impacts in the Surat Cumulative Management Area, and informed future updates to the Updated CSG WMMP. Understanding cumulative impacts better is a result of sharing data collected from the ongoing monitoring of water pressure, level and quality across Arrow's groundwater monitoring network.
13 q)	The Stage 1 CSG WMMP must include: q. details of performance measures; annual reporting to the Department; and publication of reports on the internet	Compliant	The Stage 1 CSG WMMP (Section 9) described how Arrow includes all relevant details of performance measures, annual reporting to the Department and publication of reports on the internet. Relevant reports can be found on Arrow's website: https://www.arrowenergy.com.au/environment/environmental-management-plans-and-reports
13 r)	The Stage 1 CSG WMMP must include: r. an explanation of how the Stage 1 CSG WMMP will contribute to work undertaken by other CSG proponents in the Surat Basin to understand cumulative impacts, including at the local and regional scale, and maximise environmental benefit.	Compliant	The Stage 1 CSG WMMP (Section 8.6) described how Arrow has contributed to the work being undertaken by other proponents in the Surat Basin to better understand cumulative impacts. This has been achieved through various means such as OGIA data review, research projects and industry contribution.
14	The Stage 1 CSG WMMP must be peer reviewed by a suitably qualified water resources experts approved by the Minister in writing. The peer review must be submitted to the Minister together with the Stage 1 CSG WMMP and a statement from the suitably qualified water resources expert(s) stating that they carried out the peer review and endorse the findings of the Stage 1 CSG WMMP.	Compliant	The approved Stage 1 CSG WMMP was peer reviewed by an independent and suitably qualified water resources expert (who was approved by the Minister) on 14 December 2017. The peer review and the requisite statement from the expert were submitted to the Minister prior to the approval of the Stage 1 CSG WMMP and are included in Appendix L of the Stage 1 CSG WMMP.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
15	The approval holder must not exceed the groundwater drawdown or groundwater limits for each aquifer specified in the Stage 1 CSG WMMP.	Compliant	Arrow has not exceeded the groundwater drawdown or groundwater limits specified in the approved Stage 1 CSG WMMP.
16	Unless otherwise agreed in writing by the Minister, the approval holder must not commence the action until the Stage 1 CSG WMMP is approved in writing by the Minister. The approved Stage 1 CSG WMMP must be implemented.	Compliant	Arrow commenced the action 22 October 2020, after the Stage 1 CSG WMMP was approved in writing by the Minister on 18 December 2018. The approved Stage 1 CSG WMMP is implemented.
17	The approval holder must submit an updated CSG Water Monitoring and Management Plan (Updated CSG WMMP) for the written approval of the Minister.	Compliant	Arrow's Updated CSG WMMP, addressing all of the requirements of EPBC 2010/5344 Condition 17, was submitted to the then Department of the Environment and Energy in October 2019 and approved on 22 November 2019. The Updated CSG WMMP is published on Arrow's website, together with the SGP WMMP annual reports.
17 a)	The Updated CSG WMMP must: a. include all matters in the Stage 1 CSG WMMP, and discuss how the Stage 1 CSG WMMP is informing adaptive management for the Updated CSG WMMP;	Compliant	The Updated CSG WMMP includes, and builds upon, all the matters of the Stage 1 CSG WMMP. The Updated CSG WMMP (Section 7 and Appendix A) describes how the Stage 1 CSG WMMP informed the adaptive management for the Updated CSG WMMP. The following initiatives underpin the adaptive management: <ul style="list-style-type: none"> • Arrow's ongoing groundwater and surface water baseline monitoring program; • Arrow's contribution to the Condamine Interconnectivity Research Project (CIRP) (OGIA 2016); • Stage 2 CSG WMMP numerical modelling utilising the 2016 UWIR model and the 2012 OGIA model, with the revised Stage 2 CSG WMMP field development plan (FDP); and • Stage 2 CSG WMMP terrestrial GDE risk mapping and GDE and inter-aquifer connectivity field investigations.

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17 b)	The Updated CSG WMMP must: b. include any updated modelling for the project, including in respect of the OGIA model or any updates to the OGIA model by OGIA;	Compliant	The Updated CSG WMMP (Section 4 and Appendix C) included updated modelling for the project. Key features of the Updated CSG WMMP modelling include the revised Updated Field Development Plan Case water production and the adoption of the OGIA 2016 Groundwater Model in place of the OGIA 2012 Groundwater Model.
17 c)	The Updated CSG WMMP must: c. include an explanation of how the approval holder will contribute to the Condamine Interconnectivity Research Project. The Updated CSG WMMP must present the findings of the Condamine Interconnectivity Research project and any modelling done by the OGIA to validate predicted drawdown and a review of trigger thresholds and corrective activities for the action;	Compliant	The Updated CSG WMMP (Section 3.2 and Appendix C) described how Arrow contributed and presented the findings of the Condamine Interconnectivity Research Project (CIRP). The CIRP was led by the OGIA with Arrow undertaking drilling and pumping test investigations, and collaborative arrangements with parties that included Queensland University of Technology for assessing hydrochemical data. The CIRP findings, including revisions to the geological model of the interface between the Condamine Alluvium and Walloon Coal Measures, have been adopted for the Surat CMA UWIR, and are incorporated into the 2016 OGIA Groundwater Model (refer to Section 4).
17 d)	The Updated CSG WMMP must: d. report on the potential for flow reversal from the Condamine Alluvium to underlying aquifers, based on data obtained during the Stage 1 CSG WMMP;	Compliant	The Updated CSG WMMP (Section 4.3.2 and Appendix C) described the change in net vertical flux to the Condamine Alluvium. The predicted peak changes in vertical flux at the base of the alluvium, as a percentage of the predicted peak rate of water production, is indicated to be relatively small (a few percent or less).

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Condition	Description	Compliant/non-compliant or not applicable	Comments
17 e)	The Updated CSG WMMP must: e. review and update the monitoring network in Stage 1 WMMP to reflect changes in understanding of impacts to water resources, including from baseline monitoring and relevant research;	Compliant	<p>The Updated CSG WMMP (Section 3.1, 7.1 and Appendix G) reviewed and updated the monitoring network from the Stage 1 WMMP and has reflected the changes in understanding of impacts to water resources.</p> <p>The Updated CSG WMMP monitoring network will change in the future to align with any subsequent changes to the Surat CMA UWIR monitoring requirements. Any updates to the monitoring network, for the purposes of aligning with changes to the Surat CMA UWIR monitoring requirements, will be documented during annual reporting on the Updated CSG WMMP.</p> <p>The Updated CSG WMMP monitoring network, comprises 105 monitoring bore/vibrating wire piezometer intervals. The updated CSG WMMP monitoring bores presented in Table 7-1, providing the location, target aquifer, status and purpose of the bores. This updated monitoring network demonstrates Arrow's commitment to groundwater level and quality monitoring across its tenure in each potentially affected aquifer that constitutes the groundwater resource.</p>
17 f)	The Updated CSG WMMP must: f. identify any predicted changes in stream connectivity due to groundwater drawdown from the action and assess potential impacts to groundwater dependent ecosystems due to any predicted changes in stream connectivity, including to water quality, quantity and ecology;	Compliant	<p>The Updated CSG WMMP (Section 4.4, 5.2 and Appendix G) outlined the predicted changes in stream connectivity and GDE impacts resultant from groundwater drawdown.</p> <p>For practical purposes, the predicted impacts of groundwater flux changes to the connected reaches in the Condamine River from the action are considered negligible. Additionally, the potential impacts to existing aquatic ecosystems and surface expression GDEs dependent on the Condamine River are also expected to be negligible.</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
17 g)	The Updated CSG WMMP must: g. address any uncertainty in the groundwater-dependency of ecosystems and springs with supporting evidence from field-based investigations for any groundwater-dependent ecosystems and springs confirmed in the OGIA model;	Compliant	The Updated CSG WMMP (Section 5.3 and Appendix D) detailed the groundwater dependency of ecosystems and springs at sites impacted by the action. On the basis of the outcomes of the GDE risk assessments conducted in the SGP Stage 1 CSG WMMP GDE risk assessment, four sites (Burunga Lane, Glenburnie, Long Swamp, Lake Broadwater) were chosen for field investigations. These investigations are intended to address any uncertainty in the groundwater dependency of the ecosystems at the sites. Description of site settings are provided in Table 5-2.
17 h) i.	The Updated CSG WMMP must: h. provide details of an ongoing monitoring plan that: i. sets out the frequency of monitoring and rationale for the frequency;	Compliant	The Updated CSG WMMP (Section 7.3 and Appendix G) described the ongoing monitoring plan, with the monitoring frequencies aligning with those specified in the Surat CMA UWIR. Any changes to the monitoring frequencies will be reported in the Annual Report for the WMMP. The following monitoring frequencies will be adopted for the Updated CSG WMMP: <ul style="list-style-type: none"> • Groundwater pressure/level Hourly frequency of data collection where a data logger is installed. Where this occurs, bi-annual manual readings will also be collected in wells with open standpipes. This data will be used in conjunction with logger download data. Where a data logger is not installed, fortnightly data collection. • Groundwater quality The groundwater quality sampling frequency is bi-annually.

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17 h) ii.	The Updated CSG WMMP must: h. provide details of an ongoing monitoring plan that: ii. includes continued collection of baseline data for each monitoring site over the life of the project;	Compliant	The Updated CSG WMMP (Section 3.1, 7.3 and Appendix G) included the details of the collection of baseline data for each monitoring site. Ongoing collection of baseline groundwater monitoring data is a key element of the monitoring system and will be collected from each monitoring site over the life of the project and in alignment with the Surat CMA UWIR requirements.
17 h) iii.	The Updated CSG WMMP must: h. provide details of an ongoing monitoring plan that: iii. outlines the approach to be taken to analyse the results including the methods to determine trends to indicate potential impacts	Compliant	The Updated CSG WMMP (Section 7.4 and Appendix G) outlined the analysis of the results including the analysis of methods used to indicate potential impacts. Measurement of groundwater levels, either as hydrostatic pressure or physical water levels in monitoring bores, is the primary means of assessing changes to a groundwater resource. The ongoing and structured monitoring of a network of groundwater monitoring points provides the base data that can be interrogated to enable an understanding of trends and identify whether impacts may occur.
17 h) iv.	The Updated CSG WMMP must: h. provide details of an ongoing monitoring plan that: iv. builds on the groundwater early warning system required at condition 13 (j) and sets out early warning indicators and trigger thresholds and limits for groundwater and surface water.	Compliant	The Updated CSG WMMP (Section 7.5 and Appendix G) builds on the groundwater early warning monitoring system required at condition 13 (j) in the Stage 1 CSG WMMP. The early warning monitoring system framework is refined and expanded upon in the Updated CSG WMMP to address Approval Condition 17(a) and 17(h)iv.
17 i)	The Updated CSG WMMP must: i. include a risk based exceedance response plan that details the corrective activities the approval holder will take and the timeframes in which those activities will be undertaken if: early warning indicators and trigger threshold values contained in the Updated CSG WMMP are exceeded, or there are any emergency discharges.	Compliant	The Updated CSG WMMP (Section 7.6, 8.2 and Appendix G) has detailed the actions to be taken and timeframes if early warning indicators or trigger threshold values are exceeded. Response actions, in the form of escalating actions for responding to exceedances of early warning indicators or trigger thresholds, form a key component of the early warning monitoring system, with the operation of early warning monitoring system illustrated in Figure 7-8 in the Updated CSG WMMP.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
18	The Updated CSG WMMP must be peer reviewed by a suitably qualified water resources expert approved by the Minister in writing prior to the plan being submitted to the Minister for approval. The approval holder must, at the same time as the Updated CSG WMMP is submitted for approval, provide to the Minister: a. a copy of the peer review; and b. a statement from the suitably qualified water resources expert stating that they carried out the peer review and endorse the findings of the Updated CSG WMMP.	Compliant	The approved Updated CSG WMMP was peer reviewed by an independent and suitably qualified water resources expert (who was approved by the Minister on 7 July 2015) on 19 March 2019. The peer review and the requisite statement from the expert are included in Appendix L of the Updated CSG WMMP as submitted to the Minister.
19	The approval holder must not exceed the groundwater drawdown or groundwater limits specified in the approved Updated CSG WMMP.	Compliant	Arrow has not exceeded the groundwater drawdown or groundwater limits specified in the approved SGP Updated CSG WMMP. A full comparison of monitoring data against the approved early warning monitoring system is provided in the annual report(s).
20	The Minister may direct, in writing, that the approval holder cease water or gas extraction from one or more coal seam gas production wells, or water discharge or use, if: a. an early warning indicator, trigger threshold or limit is exceeded, and b. the Minister is not satisfied that the corrective activities proposed or taken by the approval holder will reduce likely impacts on matters of national environmental significance (MNES) to acceptable levels.	Not applicable	No directions have been received.
20A	If condition 20 applies, the Minister may direct the approval holder to implement alternative corrective activities at the expense of the approval holder, provided those corrective activities are unlikely to have a significant impact on MNES.	Not applicable	No directions have been received.

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Condition	Description	Compliant/non-compliant or not applicable	Comments
20B	<p>If condition 20 applies, the approval holder must not recommence such extraction or discharge or use until the Minister has given approval in writing for the recommencement of that extraction, discharge or use.</p> <p>a. Approval to recommence such extraction, discharge or use may be subject to such conditions as the Minister considers reasonably necessary to ensure that impacts on MNES will be acceptable.</p> <p>b. If the Minister approves the recommencement of extraction, discharge or use subject to conditions, the approval holder must comply with such conditions.</p>	Not applicable	No directions have been received.
21	The approval holder must not commence the extraction of gas from any coal seam gas production wells unless the Updated CSG WMMP has been approved by the Minister in writing. The approved Updated CSG WMMP must be implemented. The Stage 1 CSG WMMP will apply until the commencement of the approved Updated CSG WMMP.	Compliant	<p>No extraction of water or coal seam gas authorised under this EPBC Approval occurred prior to the Minister's approval of the Updated CSG WMMP on 22 November 2019.</p> <p>The approved Updated CSG WMMP is implemented and published on Arrow's website. Obligations under the Updated CSG WMMP are reported separately.</p> <p>The obligations in the Stage 1 CSG WMMP continue to be relevant and implemented as required by Condition 17(a). The Stage 1 CSG WMMP is appended to the updated CSG WMMP.</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
21A	<p>If the Minister has approved the Updated CSG WMMP, the approval holder may commence extraction of gas from:</p> <ul style="list-style-type: none"> a. 250 coal seam gas production wells; b. a larger number of coal seam gas production wells as specified by the Minister if he or she is satisfied that: <ul style="list-style-type: none"> i. the approval holder has commenced gas extraction from at least 125 coal seam gas production wells; ii. the approval holder has requested an increase in the number of wells from which gas can be extracted under the approved Updated CSG WMMP; and iii. extraction of gas from the additional number of coal seam gas production wells will not have an unacceptable impact on MNES. 	Compliant	The Updated CSG WMMP was approved by the Minister on 22 November 2019. Arrow has not exceeded the 250 well limit specified by Condition 21A. Of the wells spudded between 22 October 2020 and 21 October 2023, 176 came online and began producing within this same period.
23	<p>If the OGIA model ceases to exist, the approval holder must:</p> <ul style="list-style-type: none"> a. submit an alternate model that replaces the OGIA model for the approval of the Minister; b. revise the Updated CSG WMMP to incorporate the approved alternate model, and submit the revised plan to the Minister for approval; and c. implement the approved revised plan. 	Not applicable	The OGIA model remains current and is used for the purposes of the Updated CSG WMMP.
25	The Minister may, by written request to the approval holder, require the Stage 1 CSG WMMP or the Updated CSG WMMP to be revised, including to address expert advice. Any request must be acted on by the approval holder within the timeframe specified in the request.	Not applicable	Noted. Arrow has not received a request from the Minister to revise the Stage 1 CSG WMMP or the Updated CSG WMMP.
26	Within 20 business days after the commencement of the action, the approval holder must advise the Department in writing of the actual date of commencement.	Compliant	The Department was advised of the commencement of Stage 1 (22 October 2020) on 18 November 2020.

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27	The approval holder must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement the management plans, reports or strategies required by this approval, and make them available upon request to the Department. The annual report (condition 28) must state all confirmed cases of non-compliance along with details of any remedial actions. Such records may be subject to audit by the Department or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the Department's website. The results of audits may also be publicised through the general media.	Compliant	<p>Arrow maintains plans and procedures and implements a Health, Safety and Environment Management System so that our activities are undertaken in compliance with our environmental approvals and to manage environmental risk.</p> <p>Accurate records substantiating all activities associated with or relevant to the conditions of this approval, including measures taken to implement the management plans, reports or strategies required are stored in Arrow file directories.</p> <p>There have been no confirmed cases of non-compliance for the period 22 October 2022 to 21 October 2023.</p>
28	Within three months of every 12 month anniversary of the commencement of the action, the approval holder must publish a report on its website for the life of the approval outlining how they have been compliant with the conditions of this approval over the previous 12 months, including implementation of any management plans as specified in the conditions. The approval holder must also report against disturbance limits. Documentary evidence providing proof of the date of publication and noncompliance with any of the conditions of this approval must be provided to the Department at the same time as the compliance report is published.	Compliant	<p>This report has been published to provide information required by Condition 28 for the current reporting period (being 22 October 2022 to 21 October 2023). The report was published within the required three month timeframe and advice of publication was provided to the Department.</p>

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29	<p>The approval holder must notify the Department in writing of potential non-compliance with any condition of this approval as soon as practical and no later than ten business days of becoming aware of the potential non-compliance. The notice provided to the Department under this condition must specify:</p> <ul style="list-style-type: none"> a. the condition which the approval holder has potentially breached; b. the nature of the potential non-compliance; c. when and how the approval holder became aware of the non-compliance; d. how the non-compliance will affect the approved action; e. how the non-compliance will affect the anticipated impacts of the approved action, in particular how the non-compliance will affect the impacts on the MNES; f. the measures the approval holder will take to address the impacts of the non-compliance on the MNES and rectify the non-compliance; and g. the time by when the approval holder will rectify the non-compliance. 	Compliant	There have been no potential or actual non-compliances identified for the period 22 October 2022 to 21 October 2023.
30	<p>Upon the direction of the Minister, the approval holder must ensure that an independent audit of compliance with the conditions of approval is conducted and a report submitted to the Minister. The independent auditor must be approved by the Minister prior to the commencement of the audit. Audit criteria must be agreed to by the Minister and the audit report must address the criteria to the satisfaction of the Minister.</p>	Not applicable	<p>Arrow has not been directed by the Minister to undertake an independent audit of compliance with the conditions of EPBC 2010/5344 approval.</p> <p>In the event that the Minister directs Arrow to undertake an independent audit, Arrow will seek prior approval of its nominated independent auditor and engage with the Department to agree the audit criteria.</p>

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Condition	Description	Compliant/non-compliant or not applicable	Comments
31	If the approval holder wishes to carry out any activity other than in accordance with the management plans as specified in the conditions, the approval holder must submit to the Department for the Minister's written approval a revised version of that management plan. The approval holder must not commence the varied activity until the Minister has approved the varied management plan. The Minister will not approve a varied management plan unless the revised management plan would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised management plan, that management plan must be implemented in place of the management plan originally approved.	Not applicable	Management plans specified in the conditions include: the Species Impact Management Plan (SIMP), Offset Area Management Plan (OAMP), Stage 1 CSG Water Monitoring and Management Plan and an Updated CSG Water Monitoring and Management Plan. In the event that Arrow wishes to undertake activities other than in accordance with the approved management plans Arrow will prepare and submit varied management plans.
32	If the Minister believes that it is necessary or convenient for the better protection of listed threatened species, listed migratory species or water resources to do so, the Minister may request that the approval holder make specified revisions to the management plans specified in the conditions and submit the revised management plan for the Minister's written approval. The approval holder must comply with any such request within the timeframe specified by the Minister. The revised approved management plan must be implemented. Unless the Minister has approved the revised management plan, then the person taking the action must continue to implement the management plan originally approved, as specified in the conditions.	Not applicable	Noted. Arrow has not been requested to make specific revisions to the management plans specified in the conditions.
33	If at any time after seven years from the date of this approval, the approval holder has not commenced the action, then the approval holder must not commence the action without the written agreement of the Minister.	Not applicable	The action under the EPBC Approval commenced on 22 October 2020 which was within 7 years of the date of the EPBC Approval.
34	Unless otherwise agreed to in writing by the Minister, the approval holder must publish all management plans referred to in these conditions of approval on their website. Each management plan must be published on the website within 1 month of being approved by the Minister and remain available on that website for the life of the approval.	Compliant	All approved management plans (as listed in Section 3.2 of this report) have been published on Arrow's website within 1 month of being approved by the Minister. The approved management plans can be found at: https://www.arrowenergy.com.au/environment/environmental-management-plans-and-reports