

Hopeland Development Area

Environmental Authority EA0001401 (Hopeland EA)

Hopeland Stage 2 EA amendment

Further Information Request Response

31 August 2026

The following document provides the responses to the request for further information (ref: C-EA-101098822) issued by the Department of Environment, Tourism, Science, and Innovation (DETSI) on 10 July 2026 in regard to the amendment requested by Arrow Energy to the Hopeland Development Environmental Authority (EA) (EA0001401).

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1.	Spatial Data – Biodiversity Matters		
	Spatial data has been provided for the footprint of Stage 2 development, however, mapped ground-truthed biodiversity spatial information has not been provided. Spatial data describing biodiversity matters provides for a detailed assessment of the proposal and corresponding impacts. Additionally, several items raised within this information request would benefit from the inclusion of spatial data to support the assessment process.	Provide ground-truthed spatial data files that were relied upon to determine the extent of impacts proposed to biodiversity matters with this amendment including; – Mapped Ground-truthed Regional Ecosystems (GTRE) – Environmentally Sensitive Areas (ESAs) and their protection zones (identifying the individual ESA trigger), and – Areas mapped as Matters of State Environmental Significance (MSES) and Prescribed Environmental Matters (PEMs).	The ground-truthed regional ecosystem (GTRE) spatial data files used to determine the extent of impacts proposed to biodiversity matters from the development of the Hopeland Stage 2 development are provided in Attachment 1. The GTRE from the surveys undertaken for the Hopeland Stage 2 development footprint is included in Attachment 1. Please also refer to Biodiversity Impact Assessment Report (BIA Report) submitted with the Hopeland EA amendment application (Appendix B).
2.	Disturbance Figures		
	The supporting information report and draft EA provide inconsistent disturbance figures that require reconciliation. ▪ The stage 2 disturbance total is 70 ha in Tables 1-2 and 2-1, however section 4.4 refers to approximately 81 ha of additional disturbance. ▪ Total authorised disturbance for the Hopeland EA is referred to as ~256 ha in section 4.4, ~265 ha in Section 2.1, however the total disturbance in General, Table 1 – Authorised Petroleum Activities in the draft EA equals to ~300 ha. ▪ Access tracks are listed as 21 km in Table 1-2 versus approximately 22 km in Table 2-1, with no confirmed total increase proposed in the draft EA.	1. Provide a reconciled disturbance and infrastructure schedule for this stage 2 proposal and the entire Hopeland project to date (stages 1 and 2). 2. Indicate areas of permanent vs temporary disturbance, or construction vs operational disturbance.	1. Arrow are unable to provide a total reconciled disturbance figure for Stages 1 and 2 beyond what will be submitted and approved in the Plan of Operations and Estimated Rehabilitation Cost assessments. Stage 1 has not been commenced, therefore is only proposed infrastructure. Stage 2 is made up of additional wells, access and gathering. However, Arrow believes that it is not the intent of General, Table 1 – Authorised Petroleum Activities to be an exhaustive list of all the infrastructure permitted under the EA. Incidental activities that are not otherwise specified relevant activities are authorised and will be developed where required subject to detailed design and land access. 2. At this point in life cycle, it is difficult to indicate or distinguish between temporary and permanent, construction or operational impacts prior to detailed design and final land access requirements. The infrastructure footprint was to provide an indicative alignment for assessment and determine likely

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	■ Section 4.4 states an existing 18.36 ha of land has been disturbed as of 31 December 2025, however the annual return referenced with this figure is for a different EA (EA0001399).	3. Confirm the correct figure for existing disturbance under the Hopeland EA, if this figure has changed from the 6ha authorised in General, Table 1 – Authorised Petroleum Activities of the EA, provide an explanation and justification as to why. 4. If any of the above indicates a requirement to amend spatial data for the stage 2 development footprint, resubmit these revised GIS/shapefiles.	impacts to Prescribed Environmental Matters (PEMS). Final impacts will comply with the PoO and ERC applications along with Arrows internal procedures and EA conditions for reinstatement and rehabilitation. 3. Please see Attachment 2 – Disturbance Footprint for the correct figure for existing disturbance. This should align with the Annual return impacts numbers of 36.39 ha. The 36.39ha reported in the last Annual return is greater than 6ha as it includes disturbance for the existing Hopeland Pond and incidental activities etc. As noted previously, General Table 1 of the EA is not an exhaustive list of all petroleum activities and as such it is expected that additional disturbance is reported, consistent with Arrows PoO, ERC and AR for Hopeland. The figure of 18.36 ha of land disturbed as of 31 December was erroneously recorded as the cumulative total of current disturbance and completed rehabilitation only, which is reported with commenced rehabilitation in the annual report. 4. No revised GIS/Shapefiles are required to be amended or resubmitted.
3.	Impacts to Connectivity		
	Impacts to Connectivity have been discussed in the submitted Biodiversity Impact Assessment, however it was determined that the impact to connectivity areas is not significant. It is unclear whether the Landscape Fragmentation and Connectivity (LFC) Tool has been run on the known footprint of the combined stage 1 and 2 footprints for the Hopeland development.	Confirm if the LFC tool has been run on the combined Stage 1 and Stage 2 footprints. If not, perform this analysis and submit results from the LFC tool to determine if the impact total for Connectivity needs to be updated and authorised for Stage 2.	The LFC Tool results provided with the EA Amendment application (DETSI ref: A-EA-AMD-101098745) included the Hopeland Stage 2 footprint impacts only. The LFC Tool has been re-calculated for impacts to Connectivity for the combined Stage 1 and Stage 2 footprint and is provided in Attachment 3. The results from running the LFC Tool for the total Connectivity impacts for both Stage 1 and Stage 2 combined. LFC Tool Output results: The analysis has determined any impact on connectivity area is NOT SIGNIFICANT. This means that: – The Hopeland Stage 2 development does not materially fragment habitat at the assessed scale;

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			– The key ecological linkages remain functionally intact; and – Any loss of vegetation is considered minor or localised, i.e., not regionally important. No specific offsets on habitat fragmentation or connectivity are required for the Hopeland Stage 2 development, nor there is a requirement for project redesign. Other matters, such as impacts to threatened species are still considered with the EA amendment application. Notwithstanding the above, Arrow Energy believes that applying the LFC Tool for the scenario as included and considered in the Hopeland Stage 2 EA amendment application (DETSI ref: A-EA-AMD-101098745), i.e., with Hopeland Stage 1 development already assessed and Stage 2 proposed which gave a 'not significant impact' result on connectivity, is the appropriate approach given that the Hopeland Stage 1 development has been assessed, approved, and offsets provided. By running the LFC Tool again with the assumption that all previous stages are still remnant vegetation (i.e., so pre-impact or assuming not cleared at the present moment) does not reflect a real scenario of the current on-the-ground conditions and re-prosecutes previous assessments. Re-prosecution of previously offset areas could be considered counting offsets again, or 'double dipping', and that the connectivity assessment does not consider the time elapsed between assessments and the changing information on regional ecosystem descriptions, and/or spatial location, as the Stage 2 development is located away from previously assessed areas. Arrow Energy believes that it is more appropriate to run the LFC Tool considering that the previous Stage 1 development has been cleared (i.e., post-impact) to truly represent the on-the-ground conditions, such as, existing and previously approved disturbances impacting on fragmentation and patch size. Arrow Energy believes that running the LFC tool using the scenario that was used in the current EA amendment (DETSI ref: A-EA-AMD-101098745) is consistent with the requirements as set out in the <i>Landscape Fragmentation and Connectivity (LFC) Tool User</i>

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			<i>Guide</i> (DETSI, EPP/2018/4228, Version 2.01, 5 December 2023) as the LFC tool is assessing impacts to core habitat and fragmentation to those beforementioned core habitats. Using the LFC Tool to solely run the Hopeland Stage 2 development impacts will not significantly alter the remaining area of core habitat for the Hopeland Stage 1 development LFC Tool outcome for which connectivity impacts have already been assessed. Arrow Energy has run the LFC tool in line with the DETSI LFC Tool User Guide EPP/2018/4228, Version 2.01 (refer to Attachment 3).
4.	Vegetation within the defined distance of a watercourse		
	When determining impacts to vegetation occurring within the defined distance of a watercourse, the BIA report states the following: <i>"As part of the ecological survey the high banks of watercourses associated with the Project were mapped. The Project footprint will impact 0.14 ha of RE 11.3.25 watercourse vegetation associated with the Wambo</i> However no further detail has been provided identifying these areas. As Wambo and Sixteen Mile Creek both have proposed pipeline right of way (RoW) crossings, the impact to watercourse vegetation seems underestimated. The Queensland Offsets Policy identifies watercourses in the Brigalow Belt bioregion with a stream order of 3 or 4 as having a 50m distance from the defining banks which trigger a Significant Residual Impact (SRI) assessment. Schedule 2 of the Environmental Offsets Regulation 2014, section 2(4) - A prescribed regional ecosystem is a matter of State environmental significance to the extent the ecosystem is located within a defined distance from the defining banks of a relevant watercourse. It is unclear if impacts to every regional ecosystem, regardless of biodiversity status, within the	1. Provide information detailing the ground-truthed defining banks of Wambo and Sixteen Mile Creeks, and confirm if all vegetation within Category B mapped areas located within 50m of these defining banks have been quantified, regardless of biodiversity status. 2. Provide the results of the assessed defined banks of watercourses either in pdf map format or spatial data files.	1. Arrow Energy determined Regulated Vegetation impacts using the distances specified in the Queensland Environmental Offset Policy (2025) and were included in Section 4.4.4 of the BIA Report submitted with the EA amendment application (DETSI ref: A-EA-AMD-1010987452). Impacts to 0.14ha of watercourse vegetation, was taken from calculations in the BIA, which were derived from the GTRE data which identified alluvial units (land zone 3) adjacent to these watercourses intersected with the project footprint. This data was used to determine high banks for the watercourses and where the footprint intersected with Category B (remnant) vegetation only from the high bank. Alternatively Arrow has conducted a secondary analysis using the GTRE data (supplied in Attachment 1) and the methodology described below. In the absence of surveyed defining banks, the mapped watercourse centreline was used to calculate the area of ground-verified regulated vegetation within the defining banks relevant for offsets distance. An additional buffer was applied to accommodate the in-stream component depending on stream order (SO): – An additional 2 m for SO 1 and 2 watercourses; – An additional 5 m for SO 3 and 4 watercourses; and

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	defined banks of the relevant watercourses within a mapped category B area, have been quantified		– An additional 10 m for SO ≥5 watercourses. This approach was based on measuring the in-stream component of several streams from each SO to achieve a conservative buffer distance. The defining banks cannot be reliably identified from aerial imagery for SO 1 and most SO 2. For this reason, Arrow Energy adopted a conservative approach by using the watercourse centreline and applying an additional buffer (see above) on top of the defined distances in the Environmental Offsets Policy (2025). This approach overestimates the impact areas to watercourse regulated vegetation by 4 m on average. Utilising the GTRE (supplied in attachment 1), the intersect was re-calculated to a more conservative 0.36 ha, which is proposed to be revise the disturbance to PEMs in the draft EA. 2. See the spatial data supplied in Attachment 1 which identifies ground truthed remnant (Category B) vegetation located within the defined distance of Wambo Creek and Sixteen Mile Creek.
5.	Sensitive receptors		
	The supporting information main report indicates that previous modelling for the SGP Project (for air and noise) has been utilised to determine locations of proposed activities to sensitive receptors and predicted impacts. There has been no site-specific information supplied detailing the locations of these sensitive receptors. The report explains receptor categories and gives generic separation distances (for example, most wells are stated to be >400 m from sensitive receptors and dwellings are the main nearby receptors), however these separation distance statements cannot be verified.	1. Identify all sensitive receptors located within proximity of the Hopeland Stage 2 development footprint. 2. For each receptor, include the following information: a. Geographic location (supplied as coordinates). b. Type of sensitive receptor (e.g. residential property) 3. Include this information with PDF maps that clearly illustrate the proximity of these sensitive receptors to the proposed Stage 2 development footprint.	1. Arrow Energy is providing the location of the sensitive receptors in the vicinity of the Hopeland Stage 2 development in the map provided in Attachment 4. The identified sensitive receptors are based on a combination of both Arrow Energy and Queensland Government databases. 2. Geographic locations of the sensitive receptors in the vicinity of the Stage 2 development footprint, including GPS coordinates and the type of sensitive receptor are provided in Attachment 5. 3. See Attachment 4 and 5

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		4. Provide predicted impacts for air and noise emissions specific to the closest sensitive receptors to the stage 2 development.	4. Air and Noise impacts were assessed for the SGP Project during the EIS and SEIS, as well as subsequent air quality modelling studies conducted by SLR in 2018 which included the development within the Hopeland EA area and provided appropriate separation distances and management measures to mitigate air quality impacts. These inform management and mitigation measures that were assessed as being able to achieve air and noise conditions in line with relevant legislative requirements as well as the requirements of the EA. These mitigation measures are implemented through Arrow's internal management plans. Impacts for noise are assessed as part of Arrows Area Wide Planning process where noise impacts on sensitive receptors are considered when well layouts are proposed. Site specific noise assessments are conducted during the design process pursuant to the requirements outlined in Arrow's internal management plans. Setbacks from sensitive receptors are applied to ensure compliance with the noise conditions in the EA. In the event setbacks cannot meet the noise limits or noise attenuation such as low well noise heads cannot be deployed Alternative Arrangements (AAs) may be utilised through the CCA to ensure compliance. This is consistent with outcome focused conditions, where noise limits at sensitive receptors are appropriately conditioned in the EA and through the Environmental Protection (Noise) Policy 2019.
6.	Impacts to sensitive receptors		
	Following item 4, further information is required regarding the potential impacts that may arise due to the construction and operation of the Stage 2 development. The current reporting does not provide an adequate discussion of the anticipated effects on these receptors or outline any additional assessments conducted to evaluate such impacts. Additionally, section 5.1.5 of the supporting information report states the location of wells are "almost all	1. Provide a detailed explanation of the potential impacts (e.g. noise, air quality) from both the construction and operational phases of the Stage 2 development on each of the identified sensitive receptors.	1. As discussed in Item 5, the assessment of impacts of the SGP Project have been included in the EIS and SEIS. Management and mitigation measures recommended in the assessments have been informed the development of Arrow Potential impacts from construction and operational phases are provided in the EA Amendment Supporting Information Report, that accompanied the application, as well as the mitigation measures that would be implemented to ensure impacts are within statutory limits at all sensitive receptor

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	located greater than 400 m from a sensitive receptor” followed by “with unacceptable operational noise impacts predicted for sensitive receptors located less than 400 metres from a well site” – the statement indicating almost all well pads being located greater than 400m from a sensitive receptor implies that there are some located closer than 400m, which will experience unacceptable operational noise impacts.	2. Where applicable, update the noise and air quality assessments to reflect the risks specific to these identified sensitive receptors. Include any revised analysis or additional mitigation measures proposed to minimise or manage the identified risks.	locations and compliant with the existing EA conditions for air and noise on sensitive receptors. Sensitive Receptors have been identified and included in Attachment 4 and 5. 2. The Hopeland Stage 2 EA amendment does not consider the inclusion of any air or noise emissions from additional sources that were not considered in the EIS and SEIS. The SGP EIS Assessment Report requested a site-specific air quality assessment for each proposed infrastructure location that describes point source and fugitive emissions. The proposed EA amendment application does not include any new gas compression facilities and therefore the requirements from the Assessment Report regarding site specific air quality assessments is not relevant to this application. As discussed in Item 5 above impacts for noise are assessed as part of Arrows Area Wide Planning process where noise impacts on sensitive receptors are considered when well layouts are proposed. Setbacks from sensitive receptors are applied to ensure compliance with the noise conditions in the EA. In the event set backs can not meet the noise limits or noise attenuation such as low well noise heads cannot be deployed, Alternative Arrangements (AAs) maybe utilised through the CCA to ensure compliance. This is consistent with outcome focused conditions, where noise limits at sensitive receptors are appropriately conditioned in the EA and through the Environmental Protection (Noise) Policy 2019.
7.	Groundwater		
	Please see Attachment 6 for issues.	Please see Attachment 6 for Actions Required.	Arrow Energy has provided a detailed response which has been include as Attachment 6 .

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