



ARROW BOWEN PIPELINE PROJECT

APPENDIX A1 – STANDARD CRITERIA

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THE STANDARD CRITERIA

The *Environmental Protection Act 1994* (EP Act) requires Chapter 4 Environmentally Relevant Activities (ERAs) and Chapter 5A activities to be authorised by an Administering Authority. An Environmental Authority (EA) under the EP Act will be required from the Department of Environment and Heritage Protection (EHP) for the Level 1 Chapter 5A activity, as defined in Schedule 5, *Environmental Protection Regulation 2008*: namely “constructing a new pipeline of more than 150km under a petroleum authority”.

When deciding whether to grant or refuse an application for an EA or deciding on the conditions of the authority, the Administering Authority must consider certain matters set out in the EP Act. One of those matters is the ‘Standard Criteria’.

The ‘Standard Criteria’ defined in Schedule 4 of the EP Act includes the principles of Ecologically Sustainable Development (ESD) and other policy instruments as follows:

Standard criteria means—

- a) *the principles of ecologically sustainable development as set out in the ‘National Strategy for Ecologically Sustainable Development; and*
- b) *any applicable environmental protection policy; and*
- c) *any applicable Commonwealth, State or local government plans, standards, agreements or requirements; and*
- d) *any applicable environmental impact study, assessment or report; and*
- e) *the character, resilience and values of the receiving environment; and*
- f) *all submissions made by the applicant and submitters; and*
- g) *the best practice environmental management for activities under any relevant instrument, or proposed instrument, as follows—*
 - i. *an environmental authority;*
 - ii. *a transitional environmental program;*
 - iii. *an environmental protection order;*
 - iv. *a disposal permit;*
 - v. *a development approval; and*
- h) *the financial implications of the requirements under an instrument, or proposed instrument, mentioned in paragraph (g) as they would relate to the type of activity or industry carried out, or proposed to be carried out, under the instrument; and*
- i) *the public interest; and*
- j) *any applicable site management plan; and*

- k) any relevant integrated environmental management system or proposed integrated environmental management system; and*
- l) any other matter prescribed under a regulation.*

The purpose of this Appendix is to address each of these criteria in turn to demonstrate how they are being met by the Arrow Bowen Pipeline Project (the Project) as assessed in this Environmental Impact Statement (EIS).

CRITERION A

The core objectives of ESD, as outlined in the National Strategy for Ecologically Sustainable Development, are:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations
- To provide for equity within and between generations
- To protect biological diversity and maintain essential ecological processes and life support systems.

The guiding principles for ecologically sustainable development as outlined in the National Strategy for Ecologically Sustainable Development are:

- Decision-making processes should effectively integrate both long and short term economic, environmental, social and equity considerations
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- The global dimension of environmental impacts of actions and policies should be recognised and considered
- The need to maintain and enhance international competitiveness in an environmentally sound manner should be recognised
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentives mechanisms
- Decisions and actions should provide for broad community involvement on issues which affect them.

Each of these objectives and principles is addressed as follows to demonstrate the Project's commitment to ensure that they are uniformly considered in pursuit of achieving ESD.

Individual and community well-being and welfare

Arrow has applied the principles of ESD when planning the Project and in selecting the most appropriate pipeline route. Specifically the Project has considered the following effects:

- Environment
 - has completed assessment studies of air and noise receiving environments
 - identified sensitive receptors and community infrastructure to enable the implementation of measures to reduce the risk of nuisance impact on individuals or the community
 - committed to the development of management plans to specifically address aspects of the environmental risk to prevent impacts on individuals and communities (e.g. noise and vibration management plan, transport management plan).
- Social
 - engaged a team of field agents to ensure all dealings with individuals and community are undertaken in a consistent and sensitive manner
 - consulted directly with land owners in relation to the pipeline route at the individual property levels and has adjusted to route to suit land owner plans and projects
 - implemented stakeholder and community engagement plans to enable clear dialogue with individuals and community members to raise issues related to the Project
 - undertaken community consultation programs on environmental impact including briefings to the community on the EIS and encourage community comments and involvement in the approvals process.
- Economic
 - responsible for direct and indirect employment during the construction and operational periods
 - construction of the pipeline will engage service contractors from the local community across a number of disciplines (including various trades such as electricians and carpenters; earth moving machinery operators such as graders and bulldozer drivers; and ancillary services such as catering and suppliers)
 - together with Arrow's downstream and upstream projects, contribute to the economic wealth of the community through payment of royalties and the development of community infrastructure (such as contributions under the Brighter Futures program) in the local communities where the Project operates. Arrow is a major sponsor of the RACQ Central Queensland Helicopter Rescue Service.

The intergenerational equity principle

The Project will not significantly affect, or fail to maintain, the health, diversity and productivity of the Queensland environment, or affect future generations.

- Environment
 - The Project will rehabilitate the pipeline to ensure a stable landform
 - Following construction the pipeline will not sterilise the land associated with the pipeline and farming activities can continue during the operational phase
 - The Project has undertaken to develop and implement an offsets strategy to ensure there is no net loss of biodiversity values as a result of the pipeline construction and operation.
- Social
 - Following rehabilitation pipeline operation will not result in sterilisation of the land and existing land use practices will be able to continue
 - Together with Arrow Energy's downstream and upstream projects, the Project will continue to contribute to community infrastructure to townships across areas where the Project proposes to operate as part of the Brighter Futures community investment program thereby contributing to intergenerational benefits
 - The Project will operate across generations contributing to social programs throughout the operational phase and provide employment and training opportunities to generations of Australians.
- Economic
 - The Project will contribute to the development of Australia's mineral wealth and project economic return over several generations
 - The project will contribute royalties and payments to federal, state and local governments supporting government policies and building the nations capacity
 - The Project is a multigenerational development will provide employment opportunities throughout the 40 year design lifecycle of the Project.

Protection of biological diversity and maintenance of essential ecological processes and life support systems

- Environment
 - The selected route has avoided, where possible, sensitive environmental areas, including EPBC listed MNES communities, endangered and of concern regional ecosystems and high value regrowth
 - The Project has undertaken field work to further characterise the environmental values and fine tune the route to minimise environmental impact
 - Implemented a soil assessment to identify problem soils (such as ASS/PASS, sodic or saline), or Good Quality Agricultural Soils
 - Committed to the development of management programs and measures to reduce the impact on environmental values (such as Erosion and Sediment Control, Soils Management Plan and Rehabilitation Management Plan).

Decision-making based on long and short term economic, environmental, social and equity considerations

Arrow has undertaken major studies into the Project including pre-feasibility and feasibility studies, design reviews and invested in initial project planning. Studies and programs are ongoing and multidisciplinary across economic, environmental and social sectors. The ABP pipeline has embedded the results of these studies into environmental, economic, social and equity considerations within the planning and design stage, including:

- Environment
 - investigation of environmental values throughout the proposed pipeline route to enable avoidance of impact on sensitive receiving environments and management of environmental risks
 - applied outcomes of desktop and field investigations in optimising route to avoid impact including (minimising the Right of Way (ROW) width to reduce vegetation clearance, and committing to trenchless pipe installation techniques for major waterways, such as the Fitzroy and Isaac Rivers)
 - providing Queensland with the opportunity to look for cleaner energy sources to replace coal-fired electricity generation.

- Social
 - negotiated pipeline route with directly affected landholders to minimise disturbance to property operations during construction
 - implemented ongoing stakeholder negotiation processes including holding public meetings, briefing for government departments (including Queensland Police and Emergency Services)
 - applied outcomes of meetings and briefing sessions to undertake development of refinement of construction methodologies and routes to address concerns and impacts
 - enabling the development of employment programs for skilled and unskilled workers and tertiary graduates during all phases of the Project (e.g. preplanning, detailed design, construction and operation).
- Economic
 - modelling the financial benefits at regional, state and national levels
 - examining employment considerations and flow on effects for the Australian economy
 - adding strength and diversity to Queensland's economic base and developing Queensland's gas capacity.

The precautionary principle

The Project has undertaken an environmental impact assessment, including an assessment of the risk of unacceptable environmental harm, consistent with the Precautionary Principle. Outcomes of this risk assessment were applied to the development of management plans, commitments and Project realignment and planning.

Global environmental impact

The project involves the planning, construction and operation of a buried high-pressure steel transmission pipeline that will deliver gas from Arrow's gas fields in the Bowen Basin to a gas hub for further transmission by the Arrow Surat Pipeline to Curtis Island, Gladstone.

The construction and operation of the pipeline will facilitate the development of gas fields in the Bowen Basin. Combustion of coal seam gas (CSG) will provide substantial environmental benefits over other fossil fuels (such as coal and petroleum). Gas combustion enables reduction in oxides of nitrogen (NO_x) which is a precursor compound to photochemical smog, sulphur oxides (SO_x) which exacerbates asthma in susceptible human populations, particulates (which has a direct impact on human mortality and morbidity), and carbon dioxide (which is one of the most significant gases implicated in climate change) comparative to coal combustion.

The development of this Project enables a switch from coal or petroleum fuel to gas combustion as part of a transition to a low emission energy source.

Enhancing international competitiveness in an environmentally sound manner

The Project will facilitate Australia's enhanced international competitiveness and consolidate its reputation as a reliable producer of quality LNG. Additionally, the Project develops Australia's technological capacity with respect to pipeline construction and techniques as well as operational monitoring. Training, in these techniques, which may be provided to Australian workers are transferrable in international markets where there is existing ongoing demand.

The adoption of cost-effective and flexible policy instruments

The Project has adopted available cost-effective and flexible instruments. The Project has developed a hierarchy of control for managing environmental effects with the primary goal being to avoid impact. Additionally the Project has adopted some of the flexible instruments available including developing an offsets strategy to provide biodiversity offsets where clearing is unavoidable. Policy instruments focused on energy efficiency and reductions of greenhouse gases will be developed for application during the construction and operational phases of the Project.

Broad community involvement in decisions and actions

A transparent and timely Stakeholder Consultation Plan (SCP) and Social Impact Management Plan (SIMP) are being implemented to engage and maintain a constructive relationship with all stakeholders, including traditional owners. This engagement is being undertaken in a manner which informs stakeholders about the Project and encourages them to contribute ideas that can enhance its environmental and social acceptability.

The SCP and SIMP also ensure that open and accessible channels of communication between stakeholders and project decision-makers are maintained for the duration of the planning, construction and operational phases of the pipeline.

CRITERION B

The following Environmental Protection Policies (EPPs) have relevance to the Project:

- *Environmental Protection (Air) Policy 2008 (EPP(Air))*
- *Environmental Protection (Noise) Policy 2008 (EPP(Noise))*
- *Environmental Protection (Water) Policy 2009 (EPP(Water))*
- *Environmental Protection (Waste Management) Policy 2000 (EPP(Waste Management))*.

The Project undertakes to adopt management measures to management compliance with the various EPPs including:

Environmental Protection (Air) Policy 1997

The major fugitive air emission associated with construction of the pipeline is particulates (including PM10 and PM2.5). The construction of the pipeline will be conducted under an activity based management plan for the air environment. Sources of particulate emissions include clearing and grading, stockpiling activities, trenching and wheel generated dust from vehicle driving along the ROW.

Typically, the control of dust will include use of water sprays and restrictions on vehicle speeds.

Combustion related emissions from mobile equipment are not expected to exceed air quality guidelines or standards at sensitive receptors.

During operation, accidental CSG fugitive emissions will be minimised through good operating practice and preventative maintenance programs. Shut-off valves will be connected at regular intervals and an automatic gas detection cut-off system will be designed into the pipeline operations.

Emissions during operation are considered to be negligible and are associated with the small amounts of gas released to test a valve or in the event of a shutdown (usually associated with an emergency or as a result of a major maintenance exercise).

Environmental Protection (Noise) Policy 2008

During the construction phase, the noise levels emitted from construction equipment are likely to give rise to a temporary short term increase in background noise levels in the vicinity of the activity.

The EPC contractor will be required to develop a Noise and Vibration Management Plan for the project to address any concerns regarding impacts associated with construction activities. Additionally the construction activities at any particular location will be of relatively short duration and effects localised.

The Project will continue to manage stakeholder consultation including providing advice regarding scheduled construction activities.

Environmental Protection (Water) Policy 1997

The EPP(Water) will apply to the Project during the construction of the pipeline and activities will be conducted so that wastewater from any of the project activities does not impact on the environmental values of the catchment areas through which it passes. The Project will undertake monitoring of aquatic values and impalement management plans to address water quality impacts (such as Erosion and Sediment Control Plan).

Environmental Protection (Waste Management) Policy 2000

Waste management is most relevant during the construction of the pipeline, where construction materials and wastes will be managed. In accordance with the requirements of the EPP (Waste Management) a hierarchy of control will be implemented. Waste recycling and disposal, spill response and depot maintenance will be carried out in accordance with approved procedures. Waste streams will be segregated and stockpiled separately and only licensed waste contractors and facilities will be utilised.

State Planning Policies (SPP)

State planning policies (SPPs) are planning instruments that the planning Minister employs to protect various aspects of the environment that are of interest to the State (e.g. agricultural land, development within close proximity to airport land, protecting development from adverse effects of bushfire, floods and landslides).

The following State Planning Policies (SPPs) have relevance to the Project:

- *SPP 1/12 Protection of Queensland's Strategic Cropping Land*
- *SPP 1/92 Development and Conservation of Agricultural Land*
- *SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide*
- *SPP 2/02 Planning and Managing Development Involving Acid Sulfate Soils*
- *State Coastal Management Plan – Queensland's Coastal Policy (State Coastal Management Plan).*

SPP 1/12 Protection of Queensland's Strategic Cropping Land

SPP1/12 aims to ensure that local government planning schemes and regional plans recognise and conserve areas of the best agricultural land. SPP 1/12 is only applicable to development where approval is required under the SP Act. Where applicable, SPP 1/12 will be addressed for such development through a Development Application lodged under the relevant planning scheme pursuant to the SP Act separate to the EIS process.

SPP 1/92 Development and Conservation of Agricultural Land

SPP 1/92 seeks to protect good quality agricultural land (GOAL) from development that diminishes its productivity or leads to its alienation. The Project will not alienate any GOAL as any land disturbed as a result of constructing the proposed pipeline will be reinstated back to the original condition.

SPP 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide

The purpose of this SPP is to set out the State Government's interest with regard to natural hazards of flood, bushfire and landslide and ensure these matters are adequately addressed when carrying out the development assessment. The design of the proposed pipeline in accordance with AS2885 takes into account the potential impacts of natural hazards. None of the aspects of this SPP will significantly affect the land use of the project area.

SPP 2/02 Planning and managing development involving acid sulfate soils

This SPP applies to areas of Queensland when excavating 100m³ of soil or filling 500m³ of land at or below 5m Australian Height Datum (AHD) where the natural ground level is less than 20m AHD.

The impact of the Project on acid sulfate soils is discussed in Appendix A3. The management of acid sulfate soils associated with the Project is provided in the EMP and will be undertaken in accordance with the SPP 2/02 Guideline.

State Coastal Management Plan – Queensland's Coastal Policy

The State Coastal Management Plan and subsequent Regional Coastal Management Plans have been developed under the Coastal Act to provide ways to protect and manage Queensland's coastal resources. The proposed pipeline route traverses land included in the Curtis Coast Regional Coastal Management Plan (Curtis Coastal Plan) and this is discussed in Criterion C.

CRITERION C

The EIS has been prepared to demonstrate compliance with local, State and Commonwealth standards and guidelines and will be reviewed by Referral Agencies consisting of their representatives. The Project will be evaluated in the context of these plans, and standards, and any agreements or requirements that may apply, including the 'standard criteria'.

Regional Plans

The Project is subject to three regional plans, namely the Draft Mackay, Isaac, Whitsunday Regional Plan (Draft MIW Regional Plan), the Central Queensland Regional Plan (Central Queensland Regional Growth Management Framework) and the Curtis Coast Regional Coastal Management Plan.

The Draft MIW Regional Plan encompasses the local government areas of Isaac, Mackay and Whitsunday and takes precedence over all planning instruments, other than state planning regulatory provisions.

The Central Queensland Regional Plan encompasses the local government areas of Banana Shire Council, Central Highlands Regional Council, Gladstone Regional Council (excluding former Miriam Vale Shire Council) Rockhampton Regional Council and Woorabinda Aboriginal Shire Council. This

regional plan was developed under the repealed *Integrated Planning Act 1997* (IP Act) and remains current under the SP Act.

The Curtis Coastal Plan describes how the coastal zone in the Curtis Coast region is to be managed within the policy framework established by the State Coastal Management Plan.

The Curtis Coastal Plan applies to the coastal zone and specifically sections of the Project that traverse land within the Curtis Coastal Plan, between the following KP points along Revision SR:

- KP424.9 to KP426.3
- KP426.5 to KP429.1
- KP429.7 to KP430.3
- KP431.9 to KP435.5
- KP435.6 to KP437.1
- KP442.4 to KP443.3
- KP443.7 to KP444.9
- KP445.1 to KP447.5.

Agreements

The Commonwealth Government is a signatory to agreements on climate change, migratory birds, world heritage, and biodiversity. There are four main principles of these conventions:

- the precautionary principle
- Intergenerational equity
- conservation of biological diversity
- improved valuation, pricing and incentive mechanisms.

These principles are discussed previously in Standard Criterion A.

CRITERION D

Arrow has undertaken numerous studies to determine the environmental impact of the Project. The findings of relevant desktop assessments and ecological field surveys are presented in an EIS and Supplementary Report. Studies will be ongoing through post EIS approvals (such as grant of a PPL and Environmental Authority under Chapter 5A of the EP Act) and construction.

CRITERION E

The receiving environment surrounding the Project is described in the EIS. This has indicated that the character, resilience and values of the receiving environment are unlikely to be significantly impacted by the Project. The area of the activity does not impact upon the conservation estate, and the activity will not add significantly to the vulnerability of the area to natural hazards such as flood, fire or erosion.

CRITERION F

Arrow will make several submissions to government departments in support of their application to gain approval for the construction and operation of the Arrow Bowen Pipeline (ABP) including:

- EIS and Supplementary Report
- EPBC Act Referral (as a Proposed Action)
- Petroleum Pipeline Licence and associated Environmental Authority
- Development and other Statutory Approvals associated with establishing camp sites, waterway barriers Vegetation Management and Nature Conservation. A comprehensive list of Development Approvals associated with the Project was presented in Appendix A2 of the EIS.

Interested parties made submissions on the Project through comments on the draft EIS. These submissions were considered in the development of the Supplementary Report.

CRITERION G

Best practice environmental management is defined in the EP Act, Section 21(1), as 'the management of the activity to achieve an ongoing minimisation of the activity's environmental harm through cost-effective measures assessed against the measures currently used nationally and internationally for the activity'.

The Project has environmental management provisions that meet 'Best Practice' aligned with the Australian Pipeline Industry Association (APIA) Environmental Code of Practice. The pipeline will be constructed and operated in accordance with regulatory obligations with mitigation of environmental impacts managed through the EMP.

CRITERION H

The financial implications of the Project will be positive and not place an undue burden on existing infrastructure or services. Operation of the pipeline will not sterilise the ongoing use of the land and farming/grazing activities can continue post construction.

The direct impact on employment is equal to approximately 693 full time equivalent (FTE) jobs during construction, 10 FTE's during both commissioning and decommissioning and 15 FTEs per year during operation (2018 to 2058). Approximately 35 percent of employment will be generated in the project area. Operational employment impacts are the annual average jobs created during the projected 40-

year operational life of the pipeline with approximately 67 percent of employment coming from across Queensland.

Provision of additional CSG transmission opportunities will help support the continued development of the region and lead to an increasing sustainable region from an economic perspective. This growth represents a significant addition to the Queensland and Australian economy. The Project will encourage the use of local suppliers and contractors during construction and operations where possible.

CRITERION I

The Project, in association with Arrow's upstream and downstream CSG development, will provide employment and wealth for Queenslanders. Issues of public interest and concern are dealt with during the EIS process.

CRITERION J

Site management plans are integrated in the EMP and will be periodically reviewed as part of ongoing continuous improvement throughout the construction and operation of the Project.

CRITERION K

Arrow will conduct activities associated with the Project in accordance with Arrow's Integrated Environmental Management System (IEMS).

CRITERION L

All matters prescribed by applicable regulations have been considered and described in this appendix which:

- has considered environmental policies in planning and design (refer to Standard Criteria B)
- will enhance the national, state and local economy
- enhances international competitiveness in an environmentally sound manner
- has considered valuation, pricing and incentive mechanisms
- has undergone community and stakeholder consultation.

The Project will provide benefits to individuals and the community in terms of providing employment opportunities to local community members in the short term and employment creation in the longer term from the on-going operations of the pipeline.