# ATTACHMENT 8: COMMITMENTS

**Table A8.1 Arrow LNG Plant: Commitments**

| Number | Commitment |
|---|---|
| **Climate and Climate Change Adaptation** | |
| C10.01 | Design the plant in accordance with the most current Australian standards addressing climatic factors including wind, bushfires, and sea level rise for maritime structures. |
| C10.02 | Consider climate change induced increases in ambient air temperature when specifying the design operating conditions for plant and equipment. |
| C10.03 | Consider changes to natural tidal inundation and storm surge levels due to climate change when siting permanent facilities. |
| C10.04 | Seek ways to lower water consumption through water-efficient technologies and practices or by installation of water efficient devices. |
| C10.05 | Deploy preventative and responsive measures for bushfire management. |
| C10.06 | Incorporate climate change induced health risks into workplace health, safety and environmental management plans. |
| C10.07 | Engage in government or industry climate change programs. |
| C10.08 | Estimate and include climate change costs in business cost projection and, at the same time, take advantage of emerging business opportunities that climate change may generate. |
| **Geology, Landform and Soils** | |
| C11.01 | Prior to construction, carry out detailed geotechnical ground investigations to assess site specific ground conditions and provide recommendations on slope placement, geometry and drainage. |
| C11.02 | Prior to construction, carry out geo-environmental investigations to identify the depths at which saline soils occur in terrain unit 1, and coastal areas of terrain units 2 and 3a. The cut and fill program will be designed to segregate saline soils from non-saline soils, where these soils are intended for stockpiling for future rehabilitation of the site. |
| C11.03 | Prior to construction, prepare topsoil stripping guidelines, which include a schedule and location of areas to be stripped. Quantify the soil type, depth and resources and establish a handling method. Nominate appropriate, site specific stripping depths and characterise for suitability for use in rehabilitation works. |
| C11.04 | Design the tunnel spoil placement area to minimise adverse impacts associated with ground compaction, erosion and surface water runoff such that a self sustaining landform is achieved. Incorporate appropriate drainage measures into the design. |
| C11.05 | Limit clearing of vegetated areas to the project area. Areas will be stabilised and progressively rehabilitated to reduce prolonged exposure of soils. |
| C11.06 | Consider use of erosion matting (jute mesh) or sediment socks (sand-filled, UV-resistant fabric tubes) in areas of ground disturbance outside of purpose built drainage channels. |
| C11.07 | Manage surface runoff to reduce concentration of surface flow, particularly in erodible soils. Provide drainage channels with suitable design features to minimise erosion where surface runoff is disrupted by roads, tracks, fencing and buildings. Place structures within drainage channels to reduce flow velocity where appropriate.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C11.08 | Do not create slopes that are steeper than is appropriate for the material encountered. Consider the orientation of cut batters compared with the orientation of bedrock defects. Where batters exceed 10 m in height and 3 m wide, construct benches at 10 m intervals, unless local conditions dictate otherwise. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Geology, Landform and Soils (cont'd)** |
| C11.09 | Avoid works near stream banks during periods of heavy rainfall where practical. If works cannot be timed to avoid heavy rainfall, adopt additional measures, such as the use of berms and silt fences.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality and Chapter 18, Freshwater Ecology. |
| C11.10 | Exclude vehicles from operating in areas not in use for construction or operation and, in general, restrict vehicles to designated access tracks. |
| C11.11 | Implement sediment and erosion control measures upslope of watercourses, wetlands and coastal areas or in areas with sodic soils to minimise increases in natural sediment discharge. Measures may include sediment traps, silt fencing, riprap, contour banks, detention dams, sediment ponds and vegetation and diversion berms.<br>Common with Chapter 13 Surface Water Hydrology and Water Quality. |
| C11.12 | Use control measures such as drains, swales, silt fencing and sediment traps around the lower slopes of erodible stockpiles.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C11.13 | Where sodic soils are encountered, implement control measures (such as soil ameliorants) to soils and soil stockpiles to reduce dispersion, waterlogging and crusting. |
| C11.14 | For pipeline trenching activities reinstate soil profiles to predisturbance orientation, where practical, using excavated topsoil. |
| C11.15 | Design saline and sodic subsoil stockpiles to reduce ponding and salt migration to non-saline soils. |
| C11.16 | Prior to construction commencing, develop a site drainage plan to define how the civil construction will address site drainage, stormwater management, erosion control and stockpile placement. Risks relating to flood events will also be addressed with appropriate mitigation measures to minimise erosion and surface water quality issues.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C11.17 | Store topsoil, subsoil and sediment trap soil in separate stockpiles to avoid mixing soil types and introducing salinity to non-saline soils. |
| C11.18 | Design topsoil stockpiles to allow for nutrient cycling. |
| C11.19 | Where insufficient topsoil is available at the site, use comparable topsoil imported for rehabilitation. Marine clays, skeletal soils, rock or gravelly soils will not be used in the rehabilitation of topsoil layers. |
| C11.20 | Control speed limits on site via posted speed limit signs and confine vehicles generally to marked trafficable areas.<br>Common with Chapter 21, Air Quality. |
| C11.21 | Keep trafficked surfaces damp during construction with sprayed water when conditions are dry to suppress dust generation. Use water of a similar quality to that which is available in the locality and do not spray as concentrated flow.<br>Common with Chapter 21, Air Quality. |
| C11.22 | Design and construct a barrier and sediment control pond to trap sediment leaving the LNG plant site before it enters the Port Curtis marine environment or other surface waters. |
| C11.23 | Protect stream channels in soils prone to gully erosion with rock armouring or other appropriate structures and material to reduce erosion potential.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C11.24 | Consider the thickness of colluvium, orientation and gradient of cut batters and orientation of bedrock defects when designing cut and fill locations to reduce the potential for slope destabilisation. |
| C11.25 | Batter or shore trench walls in soft, waterlogged soils (particularly in terrain unit 1) to increase stability. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Geology, Landform and Soils (cont'd)** | |
| C11.26 | Do not use saline, acidic or sodic soils for backfill padding of trenched pipelines where alternatives are available. |
| C11.27 | Cap excavated sodic or saline subsoils with non-sodic or non-saline topsoil material, during reinstatement. |
| C11.28 | Rehabilitate batters, embankments and borrow pits and revegetate as soon as practical after construction. Reinstate areas no longer required for construction or support services and revegetate as per planting and seeding rehabilitation plans to be developed for the project. |
| C11.29 | Re-profile and reinstate topsoil, vegetation and re-establish a stable surface, where practical, during decommissioning and rehabilitation of the LNG plant site.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| **Land Contamination and Acid Sulfate Soils** | |
| C12.01 | Prior to construction, the extent of contamination will be further defined where required, and mitigation measures will be refined as appropriate. |
| C12.02 | Former cattle dip: Undertake additional assessment of the area of potential contamination and develop management or remediation via a DERM-accepted method. Validate the impacted area as per the draft guidelines for the assessment and management of contaminated land in Queensland 1998 (DoE, 1998) and national environment protection (assessment of site contamination) measure (NEPC, 1999). |
| C12.03 | Former cattle dip: Remove livestock dip and spray race structure. |
| C12.04 | Former cattle dip: Manage or remediate impacted soil and groundwater in accordance with current Queensland and national guidelines. |
| C12.05 | Ash in settling ponds: Undertake Stage 2 assessment of ash to determine contamination status. |
| C12.06 | Ash in settling ponds: Where practical, avoid disturbance of buried ash during construction. |
| C12.07 | Ash in settling ponds: Establish effective management methods for disturbed ash during construction activities including erosion and sediment controls and dust suppression. Use of appropriate personal protective equipment will be required. |
| C12.08 | Ash in settling ponds: Place suitable capping material and develop a site management plan if required. |
| C12.09 | Waste battery stockpiles: Remove batteries from site for recycling. |
| C12.10 | Waste battery stockpiles: Undertake shallow surface soil validation sampling. |
| C12.11 | Chemicals and fuel use or storage: Construct facilities in accordance with relevant Australian standards. |
| C12.12 | Chemicals and fuel use or storage: Appropriately train staff in the use of hazardous materials. |
| C12.13 | Future chemicals and fuel use or storage: Immediately clean up any spills and conduct investigations into any relevant releases. |
| C12.14 | Fires and emergency releases of hazardous materials: Provide emergency response training to staff handling dangerous goods. |
| C12.15 | Fires and emergency releases of hazardous materials: Construct facilities and spill containment in accordance with current Australian standards. |
| C12.16 | Fires and emergency releases of hazardous materials: Regularly inspect infrastructure using or storing hazardous materials, or test for integrity. |
| C12.17 | Develop an ASS management plan prior to construction work. In the plan, specify how onsite ASS disturbances should be managed in accordance with SPP2/02 and the methods set out in Queensland acid sulfate soil technical manual soil management guidelines (Dear et al., 2002).<br>Common with Chapter 14, Groundwater. |
| C12.18 | Remediate areas of contamination that have resulted from the project to a level that protects human health and the environment. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Surface Water Hydrology and Water Quality** | |
| C13.01 | Locate sensitive project infrastructure to avoid the 1:100 yr ARI where practical. |
| C13.02 | Design stream diversions and adjacent flood corridors to manage a minimum of a 1:100 year ARI event. |
| C13.03 | Design the stream diversion at the LNG plant site; to prevent erosion or deposition at greater than natural rates; as a corridor, which may contain a formalised channel and constructed flood plain zone; and to allow for the transport of sediment. |
| C13.04 | Design TWAF 8 to minimise disturbance to the of concern RE 11.3.4 ('*Eucalyptus tereticornis* and/or Eucalyptus spp. tall woodland on alluvial plains') to maintain connectivity of habitat along the Targinie Creek riparian zone.<br>Common with Chapter 17, Terrestrial Ecology, and Chapter 18, Freshwater Ecology. |
| C13.05 | Where practical, align the perimeter fence at TWAF 8 to adopt the alignment of the existing fence where it crosses Targinie Creek.<br>Common with Chapter 17, Terrestrial Ecology, and Chapter 18, Freshwater Ecology. |
| C13.06 | Design any intra-site access road crossing of Targinie Creek at TWAF 8 to include box culverts (or similar) to enable fauna movement under the road and along the wildlife corridor.<br>Common with Chapter 17, Terrestrial Ecology, and Chapter 18, Freshwater Ecology. |
| C13.07 | Keep the footprint of the mainland tunnel entry shaft and tunnel spoil disposal area to a minimum of 500 m clear of Boat Creek.<br>Common with Chapter 18, Freshwater Ecology. |
| C13.08 | Treat stormwater generated from TWAF 7, TWAF 8, launch site 1, the tunnel shaft entry site and tunnel spoil disposal area in temporary sediment basins located at each site. |
| C13.09 | Divert sediment-laden water from disturbed areas at the LNG plant site to temporary sedimentation ponds. |
| C13.10 | Manage all surface water generated from the LNG plant site by a stormwater treatment system to ensure discharged water complies with regulatory requirements.<br>Common with Chapter 31, Waste Management. |
| C11.12 | Use control measures such as drains, swales, silt fencing and sediment traps around the lower slopes of erodible stockpiles.<br>Common with Chapter 11, Geology, Landform and Soils. |
| C11.11 | Implement sediment and erosion control measures upslope of watercourses, wetlands and coastal areas or in areas with sodic soils to minimise increases in natural sediment discharge. Measures may include sediment traps, silt fencing, riprap, contour banks, detention dams, sediment ponds and vegetation and diversion berms.<br>Common with Chapter 11, Geology, Landform and Soils. |
| C11.16 | Prior to construction commencing, develop a site drainage plan to define how the civil construction will address site drainage, stormwater management, erosion control and stockpile placement. Risks relating to flood events will also be addressed with appropriate mitigation measures to minimise erosion and surface water quality issues.<br>Common with Chapter 11, Geology, Landform and Soils. |
| C11.23 | Protect stream channels in soils prone to gully erosion with rock armouring or other appropriate structures and material to reduce the erosion potential.<br>Common with Chapter 11, Geology, Landform and Soils. |
| C11.07 | Manage surface runoff to reduce concentration of surface flow, particularly in erodible soils. Provide drainage channels with suitable design features to minimise erosion where surface runoff is disrupted by roads, tracks, fencing and buildings. Place structures within drainage channels to reduce flow velocity where appropriate.<br>Common with Chapter 11, Geology, Landform and Soils. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Surface Water Hydrology and Water Quality (cont'd)** | |
| C11.22 | Design and construct a barrier and sediment control pond to trap sediment leaving the LNG plant site before it enters the Port Curtis marine environment or other surface waters.<br>Common with Chapter 11, Geology, Landform and Soils. |
| C11.09 | Avoid works near stream banks during periods of heavy rainfall where practical. If works cannot be timed to avoid heavy rainfall, adopt additional measures, such as the use of berms and silt fences.<br>Common with Chapter 11, Geology, Landform and Soils, and Chapter 18, Freshwater Ecology. |
| C13.11 | Provide secondary containment for any fuel, oil or chemicals in above ground storage facilities in accordance with applicable Australian standards. |
| C13.12 | Develop appropriate spill prevention and response plans to cover project activities and the types and quantities of fuel, oil and chemicals held at each site.<br>Common with Chapter 14, Groundwater, and Chapter 31, Waste Management. |
| C13.13 | Train all relevant personnel in spill response and recovery procedures.<br>Common with Chapter 31, Waste Management. |
| C13.14 | Maintain live capacities of storage bunds to maximise capacity in the event of a storm or spill. |
| C13.15 | Do not abstract freshwater from watercourses, or dispose of effluent directly into freshwater watercourses, except clean stormwater.<br>Common with Chapter 18, Freshwater Ecology. |
| C13.16 | Where waterway crossings are necessary, cross ephemeral streams in preference to permanent streams, where practical. Where pipeline waterway crossings are necessary, approach stream crossings perpendicular to the stream where possible, to reduce bank erosion risk and minimise the footprint within the bed and riparian zone.<br>Common with Chapter 18, Freshwater Ecology. |
| C13.17 | Where practical, ensure that grasses and other ground cover remain in place to assist with trapping mobilised sediments. |
| C13.18 | Avoid the use of herbicides within riparian zones or directly over watercourses. Where this is not possible, use products specifically approved for this purpose. |
| C13.19 | Develop site-specific vegetation management plans to reinstate native plant species to areas to be rehabilitated, including riparian margins. Exotic sterile grasses may be used in areas where temporary cover is required to aid in soil stabilisation. |
| C13.20 | Undertake earthworks and rehabilitation activities to facilitate drainage and reduce the potential for standing water to accumulate.<br>Common with Chapter 18, Freshwater Ecology. |
| C13.21 | Avoid discharging tail water from the tunnel spoil disposal area into Boat Creek.<br>Common with Chapter 18, Freshwater Ecology. |
| C13.22 | Where works are required in watercourses, they will be confined to reduced width construction right of ways that preserve, to the extent possible, the integrity of the riparian vegetation and any associated wildlife corridors.<br>Common with Chapter 18, Freshwater Ecology. |
| C13.23 | Routinely inspect and maintain the stormwater treatment system. |
| C13.24 | Treat all surface water and stormwater generated within the LNG plant site in a stormwater system to ensure discharged water meets regulatory requirements. |
| C13.25 | Collect contaminated stormwater for treatment before discharge. |
| C13.26 | Only treat surface water generated within the LNG plant site in the stormwater treatment system. Divert runoff generated outside the LNG plant site away from the LNG plant site stormwater system via the proposed stream diversion. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Surface Water Hydrology and Water Quality (cont'd)** | |
| C13.27 | Place structures within drainage channels to reduce flow velocity where appropriate. |
| C13.28 | Remove litter and other debris from within the treatment system, especially around the inlet and outlet structures. |
| C13.29 | Keep areas within and around the stormwater treatment system free of weeds, and other undesired overgrowth. |
| C13.30 | Consider post-decommissioning channel form for the stream diversion design and provide for a self-sustaining waterway, without the need for maintenance beyond the life of the project. |
| C11.29 | Re-profile and reinstate topsoil, vegetation and re-establish a stable surface, where practical, during decommissioning and rehabilitation of the LNG plant site.<br>Common with Chapter 11, Geology, Landform and Soils. |
| **Groundwater** | |
| C14.01 | Design the facility drainage system such that accidental releases of hazardous substances are collected to reduce the chance of contamination seeping into the groundwater system. |
| C14.02 | Prepare a materials handling and waste management plan to manage any potential contaminants, soils or materials that might result in impacts to shallow groundwater through either short term or long term leaching. |
| C14.03 | Minimise the extent and duration of construction dewatering required. |
| C12.17 | Develop an ASS management plan prior to construction work. In the plan, specify how onsite ASS disturbances should be managed in accordance with SPP2/02 and the methods set out in Queensland acid sulfate soil technical manual soil management guidelines (Dear et al., 2002).<br>Common with Chapter 12, Contaminated Land and Acid Sulfate Soils. |
| C14.04 | Store fuels, chemicals and hazardous wastes in appropriately sized, bunded storage facilities (in leak proof sealed containers). Common with Chapter 31, Waste Management. |
| C14.05 | Where fuel or oil is contained in above ground storage facilities, ensure they are constructed with suitable secondary containment in accordance with Australian standards. |
| C14.06 | Maintain accurate records of fuels and oils stored in underground storage tanks to enable leak detection through quantity auditing. |
| C13.12 | Develop appropriate spill prevention and response plans to cover project activities and the types and quantities of fuel, oil and chemicals held at each site. Common with Chapter 13, Surface Water Hydrology and Water Quality and Chapter 31, Waste Management. |
| C14.07 | Minimise site storage of brine products. |
| C14.08 | Collect sewage and greywater generated from the pioneer camp in portable disposal units or other mobile collection facilities. Use a licensed waste contractor to service the sewage facilities and dispose of effluent at a licensed waste management facility. Dispose of sewage from the mainland TWAF through a connection to the local sewerage network or ensure that it is collected in portable disposal units or other mobile collection facilities. Common with Chapter 31, Waste Management. |
| C14.09 | Implement engineering controls to minimise the extent of aquifer drawdown and saline water encroachment such as sheet piling of excavations or groundwater reinjection. |
| C14.10 | Follow standard guidelines for decommissioning of all monitoring bores including the Manual of Water Well Construction Practices (US EPA, 1977) and Minimum Construction Requirements for Water Bores in Australia (DNRME, 2003). |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Coastal Processes** |
| C15.01 | Stabilise the shoreline, where required, at the high tide level where marine infrastructure is installed. |
| C15.02 | Develop a dredge management plan that considers the appropriate water and sediment monitoring data (e.g., current WBDD Project data) and will include: |
| C15.03 | • Requirements for monitoring of water quality. |
| C15.04 | • Actions to be taken to minimise impacts of dredging on sensitive areas should water quality monitoring data show performance criteria are exceeded. Finalise specific actions in the dredge management plan.<br>Common with Chapter 16, Marine Water Quality and Sediment, and Chapter 19, Marine and Estuarine Ecology. |
| C15.05 | Implement management measures from the dredge management plan to address impacts from maintenance dredging. |
| C15.06 | Decommission the LNG jetty and loading facilities in a similar fashion to the LNG Plant. Dismantle the LNG jetty and cut the piles off at the seafloor. Remove the structure and piles as scrap. Remove debris from the concrete deck and building foundations for disposal on land. |
| C15.07 | Leave the MOF and shore protection works at the LNG jetty (local benthic habitat and associated flora and fauna will have adapted to its presence over the operational life of the project). |
| C15.08 | Only demolish the mainland launch site if another use is not identified. |
| | **Marine Water Quality and Sediment** |
| C16.01 | Design of the discharge outfall from the LNG Plant will include a three-port diffuser at the end of the pipeline located close to the water surface (or the ports angled towards the surface) to maximise dilution of the negatively buoyant discharge stream. |
| C16.02 | Obtain sediment samples from geotechnical drill cores to further characterise marine sediments disturbed during construction. Use the results to inform the development of the dredge management plan. |
| C15.02 | Develop a dredge management plan that considers the appropriate water and sediment monitoring data (e.g., current WBDD Project data) and will include: |
| C15.03 | • Requirements for monitoring of water quality. |
| C15.04 | • Actions to be taken to minimise the impacts of dredging on sensitive areas should water quality monitoring data show performance criteria are exceeded. Finalise specific actions in the dredge management plan.<br>Common with Chapter 15, Coastal Processes and Chapter 19, Marine and Estuarine Ecology. |
| C16.03 | Prior to discharge to Port Curtis, test and treat excess water at the mainland tunnel launch site in an onsite water treatment plant to meet water quality criteria. |
| C16.04 | Test and treat all discharges to Port Curtis to meet water quality criteria, as required, prior to discharge. |
| C16.05 | Develop spill response plans to cover marine activities, including all vessel operations. |
| C16.06 | Refuel vessels in designated areas where spill response kits are located. |
| C13.12 | Train all relevant personnel in spill response and recovery procedures.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality and 31, Waste Management. |
| C16.07 | Limit activities on vessels that may cause spillages to the deck to areas where deck water can be routed to and passed through oil/water separators (to meet water quality criteria) before discharge overboard. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Marine Water Quality and Sediment (cont'd)** | |
| C16.08 | Store solvents and other oil-based or flammable materials in accordance with applicable Queensland regulations. |
| C16.09 | Maintain a minimum practical inventory of hazardous materials on board vessels. |
| C16.10 | Store on board wastes produced by vessels that cannot be discharged under the MARPOL Convention and then transfer to an approved onshore facility for treatment, reuse, recycling or disposal. |
| C16.11 | Where practical, schedule the timing of maintenance dredging to coincide with the most favourable climatic conditions for minimising impacts to water quality and sediment (i.e., during neap tides when water currents are weakest or periods of calm winds and waves). |
| C16.12 | Source hydrostatic test water from Port Curtis, the town water supply or from fresh water generated in the reverse osmosis plant. Test and treat water to meet water quality criteria as necessary prior to discharge to Port Curtis. |
| C16.13 | Develop a detailed decommissioning plan for the site to include procedures and methods for managing effluent during decommissioning. |
| **Terrestrial Ecology** | |
| C17.01 | Prepare construction and operations environmental management plans. These documents are to include detailed information about significant flora and fauna species and their management and ongoing conservation. Include site-specific mitigation and details of monitoring and inspection to be undertaken, in the environmental management plans consistent with advice provided by government. |
| C17.02 | Determine areas (if any) requiring to be offset in consultation with DERM and DSEWPC and other government stakeholders prior to commencement of construction. This is likely to include the two areas of endangered(Vegetation Management Act) remnant vegetation (RE 12.3.3; Assets 27 and 31) within the LNG plant site, and the *Cupaniopsis* sp.indet population. |
| C17.03 | An area of semi-evergreen vine thicket community (containing the *Cupaniopsis* vegetation community) will be retained by the project on Boatshed Point. This area will be demarcated prior to the commencement of construction and workers and machinery will be prohibited from accessing the area. The boundary of the semi-evergreen vine thicket community will be fenced off with a 20-m buffer between the semi-evergreen vine thicket community (including the *Cupaniopsis* vegetation community) and the fence and area of disturbance. The retained vine thicket area is designed to protect a viable semi-evergreen vine thicket vegetation community and a viable population of *Cupaniopsis* sp. indet. on Boatshed Point. Do not develop within the fenced area of the retained semi-evergreen vine thicket community. Establish roles and responsibilities for the management of the retained semi-evergreen vine thicket community. |
| C17.04 | A wildlife corridor of 20 m will be established on the eastern side of Boatshed Point to maintain connectivity between the semi-evergreen vine thicket community and the environmental management precinct. |
| C17.05 | Route the haul road for the Hamilton Point MOF option away from the eastern margin of the headland to avoid the critically endangered RE 12.2.2 (Microphyll/notophyll vine forest) on beach ridges. |
| C13.04 | Design TWAF 8 to minimise disturbance to the of concern RE 11.3.4 ('*Eucalyptus tereticornis* and/or Eucalyptus spp. tall woodland on alluvial plains') to maintain connectivity of habitat along the Targinie Creek riparian zone.<br>Common with Chapter 13, Surface Water, Hydrology and Water Quality, and Chapter 18, Freshwater Ecology. |
| C13.05 | Where practical, align the perimeter fence at TWAF 8 to adopt the alignment of the existing fence where it crosses Targinie Creek.<br>Common with Chapter 13, Surface Water, Hydrology and Water Quality and Chapter 18, Freshwater Ecology. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Terrestrial Ecology (cont'd)** |
| C13.06 | Design any intra-site access road crossing of Targinie Creek at TWAF 8 to include box culverts (or similar) to enable fauna movement under the road and along the wildlife corridor.<br>Common with Chapter 13, Surface Water, Hydrology and Water Quality and Chapter 18, Freshwater Ecology. |
| C17.06 | Develop requirements for ecological watching briefs/wildlife spotter-catchers as well as procedures for addressing ecological issues as they arise during construction, operation and rehabilitation works. |
| C17.07 | Develop fauna relocation protocols as part of fauna management measures including procedures if fauna is found during clearing activities, including in hollows of trees to be felled. |
| C17.08 | Prepare a fauna management plan for the project. |
| C17.09 | Develop weed management measures prior to initiation of construction activities in accordance with local and regional management guidelines and best practice advice prescribed in DERM's pest control factsheet series. |
| C17.10 | Liaise with Biosecurity Queensland and Gladstone Regional Council on project biosecurity and pest management programs. Notify Gladstone Regional Council of any new declared or notifiable pest species. These programs should particularly focus on the boundaries of the project site with the Environmental Management Precinct. |
| C17.11 | Develop and implement a mosquito management plan prior to construction that includes measures to control the occurrence of stagnant pools of water on the site especially after rainfall. |
| C17.12 | Develop and implement washdown strategies and procedures to prevent the spread of weeds. |
| C17.13 | Include measures in the pest management plan to control invasive plant species that may colonise the mudflats and degrade remaining habitat. |
| C17.14 | Prior to initiation of works, clearly mark access tracks to prevent secondary tracks becoming established. Use existing access tracks where practical. Where practical, the location and design of access tracks should avoid sites of high ecological value. |
| C17.15 | Locate construction equipment, laydown areas, turn-around areas, stockpiles and working areas within areas of existing disturbance where practical. |
| | Implement measures to reduce the impacts of light from the LNG plant and ancillary facilities including: |
| C17.16 | • Shield/direct the light source onto work areas where practical.<br>Common with Chapter 19, Marine and Estuarine Ecology, and Chapter 23, Landscape and Visual. |
| C17.17 | • Use long-wavelength lights, where practicable, including use of red, orange or yellow lights.<br>Common with Chapter 19, Marine and Estuarine Ecology. |
| C17.18 | • Lower the height of the light sources as far as practical.<br>Common with Chapter 19, Marine and Estuarine Ecology. |
| C17.19 | •–Avoid planned routine maintenance flaring at night during sensitive turtle reproductive periods (where practicable).<br>Common with Chapter 19, Marine and Estuarine Ecology. |
| C17.20 | Design lighting around the perimeter of the LNG plant to minimise impacts on roosting shorebirds, where practical. Lowest possible luminescent globes should be used in sensitive areas, particularly around intertidal zones, where practical. |
| C17.21 | Design construction lighting on the causeway at the mainland tunnel entry shaft and tunnel spoil disposal area to minimise impacts on roosting shorebirds. The lowest possible luminescent globes should be used in sensitive areas, particularly around intertidal areas, where practical. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Terrestrial Ecology (cont'd)** | |
| C17.22 | Induct all personnel prior to entering a project site, including on measures for managing the impacts on flora and fauna likely to be present. |
| C17.23 | Clearly mark no go zones, where required, including the semi-evergreen vine thicket (*Cupaniopsis*) fenced area on Boatshed Point and the critically endangered RE 12.2.2 on Hamilton Point (if the Hamilton Point South MOF is selected). |
| C17.24 | Prohibit access to the saltpans and fringing mangroves (RE 12.1.2 and 12.1.3) outside the planned area of disturbance of the mainland tunnel entry shaft and tunnel spoil disposal area. |
| C17.25 | Conduct preclearance surveys across project areas to be cleared of vegetation. The surveys will aim to determine whether any threatened species are present at each site. Appropriate mitigation measures will be implemented if threatened species are confirmed within the area. |
| C17.26 | Inspect the likely white-bellied sea-eagle nest on Hamilton Point for activity during breeding season prior to clearance, if this option is pursued. If active, formulate appropriate management measures, should the Hamilton Point MOF option be pursued. |
| C17.27 | Reduce vegetation clearing where practical and only after all other options such as selective clearing and trimming of vegetation have been considered. |
| C17.28 | Clearly mark trees for retention to avoid accidental clearing and develop clearance procedures prior to construction. The root zone should be adequately protected. |
| C17.29 | In areas where trees are planned to be left in place, take care to minimise damage to surrounding trees when felling trees into cleared areas or in natural slots between retained trees. |
| C17.30 | Inspect plants, soil, fill and any other such materials to be used in construction/rehabilitation works prior to entry to site. If supplied from within the fire-ant restricted area, these materials must be accompanied by a movement certificate or fire-ant declaration form. This also applies for the yellow crazy ant. |
| C17.31 | Prohibit pets of staff and contractors from entering the project area (unless assistance animals). |
| C17.32 | Adopt waste control measures to avoid introducing new external seed sources for exotic flora. |
| C17.33 | Prohibit hunting and trapping unless required for pest management. |
| C17.34 | Undertake all handling and management of fauna in compliance with permits issued by DERM. |
| C17.35 | Develop measures to prevent fauna entrapment and implement prior to construction where practical (e.g., the use of pipe caps if piping stored at ground level, string pipes with gaps for wildlife access). |
| C17.36 | Develop trench inspection procedures to remove trapped fauna, establish protection and refuge areas for wildlife trapped in the trench and methods to assist trapped fauna left in the trench. |
| C17.37 | Prohibit construction and operation activities within 'field' areas that are outside of the construction area of disturbance, i.e., areas exposed to bushfire fuels, during days of total fire ban. |
| C17.38 | Identify areas to be rehabilitated and develop procedures for restoration and maintenance. |
| C17.39 | Rehabilitate construction access tracks not required for operations. |
| **Freshwater Ecology** | |
| C13.04 | Design TWAF 8 to minimise disturbance to the of concern RE 11.3.4 ('*Eucalyptus tereticornis* and/or *Eucalyptus* spp. tall woodland on alluvial plains') to maintain connectivity of habitat along the Targinie Creek riparian zone.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality, and Chapter 17, Terrestrial Ecology. |
| C13.05 | Where practical, align the perimeter fence at TWAF 8 to adopt the alignment of the existing fence where it crosses Targinie Creek.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality, and Chapter 17, Terrestrial Ecology. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Freshwater Ecology (cont'd)** | |
| C13.06 | Design any intra-site access road crossing of Targinie Creek at TWAF 8 to include box culverts (or similar) to enable fauna movement under the road and along the wildlife corridor.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality and Chapter 17, Terrestrial Ecology. |
| C18.01 | Implement strategies and protocols relevant to the protection of freshwater aquatic communities, habitat and processes, as detailed in the Australian Pipeline Industry Association Code of Environmental Practice: Onshore Pipelines (APIA, 2009) as part of the project. |
| C13.07 | Keep the footprint of the mainland tunnel entry shaft and tunnel spoil disposal area to a minimum of 500 m clear of Boat Creek.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C17.22 | Induct all personnel prior to entering a project site, including on measures for managing the impacts on flora and fauna likely to be present.<br>Common with Chapter 17, Terrestrial Ecology. |
| C13.22 | Where works are required in watercourses, they will be confined to reduced width construction right of ways that preserve, to the extent practical, the integrity of the riparian vegetation and any associated wildlife corridors.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C18.02 | Limit the clearing of riparian vegetation to that necessary for safety. |
| C13.16 | Where waterway crossings are necessary, cross ephemeral streams in preference to permanent streams, where practical. Where pipeline waterway crossings are necessary, approach stream crossings perpendicular to the stream where practical, to reduce bank erosion risk and minimise the footprint within the bed and riparian zone.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C11.09 | Avoid works near stream banks during periods of heavy rainfall where possible. If works cannot be timed to avoid heavy rainfall, adopt additional measures, such as the use of berms and silt fences.<br>Common with Chapter 11, Geology, Landform and Soils, and Chapter 13, Surface Water Hydrology and Water Quality. |
| C18.03 | Prevent staff and contractors from camping, fishing or carrying out other recreational activities in waterways in the project area while on shift, to prevent the accidental introduction of aquatic pest species on fishing gear or bait. |
| C13.20 | Undertake earthworks and rehabilitation activities to facilitate drainage and reduce the potential for standing water to accumulate.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C13.21 | Avoid discharging tail water from the tunnel spoil disposal area into Boat Creek.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C18.04 | Define and adhere to machinery hygiene protocols to prevent the translocation of pest species, particularly weeds such as salvinia, cumbungi and para grass. |
| C13.15 | Do not abstract freshwater from watercourses, or dispose of effluent directly into freshwater watercourses, except clean stormwater.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| **Marine and Estuarine Ecology** | |
| C19.01 | Develop a construction management plan, which contains specific mitigation measures, performance indicators and management actions required to reduce impacts to the marine and estuarine ecological values. |
| C19.02 | Establish a marine offsets strategy for the project to compensate for the loss of marine and estuarine habitat as a result of the project. |
| | Implement measures to reduce the impacts of light from the LNG plant and ancillary facilities including: |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Marine and Estuarine Ecology (cont'd)** | |
| C17.16 | • Shield/direct the light source onto work areas where practical.<br>Common with Chapter 17, Terrestrial Ecology and Chapter 23, Landscape and Visual. |
| C17.17 | • Use long-wavelength lights, where practical, including use of red, orange or yellow lights.<br>Common with Chapter 17, Terrestrial Ecology. |
| C17.18 | • Lower the height of the light sources as far as practical.<br>Common with Chapter 17, Terrestrial Ecology. |
| C17.19 | • Avoid routine planned maintenance flaring at night during sensitive turtle-reproductive periods (where practical).<br>Common with Chapter 17, Terrestrial Ecology. |
| C15.02 | Develop a dredge management plan that considers the appropriate water and sediment monitoring data (e.g., current WBDD Project data) and will include: |
| C15.03 | • Requirements for monitoring of water quality. |
| C15.04 | • Actions to be taken to minimise impacts of dredging on sensitive areas should water quality monitoring data show performance criteria are exceeded. Finalise specific actions in the dredge management plan.<br>Common with Chapter 15, Coastal Processes and Chapter 16, Marine Water Quality and Sediment. |
| C19.03 | Comply with environmental and legal criteria of the Queensland Government environmental offsets policy as the overarching framework for a specific-issue offset policy. |
| C19.04 | Contribute to the development of a Port of Gladstone shipping activity strategy and management plan. Comply with applicable speed limits for the Port of Gladstone-Rodds Bay Zone B dugong protection area, as detailed in the management plan. |
| C19.05 | Install (where feasible) propeller guards (or equivalent) on high-speed vessels to reduce the impact of injury in the event of boat strike. |
| C19.06 | Implement soft-start procedures where a sequential build-up of warning pulses will be carried out prior to commencement of full-power pile-driving activities. |
| C19.07 | Undertake fauna observations prior to and during pile-driving and dredging activities to check for the presence of marine turtles, dugongs and cetaceans. Should fauna be spotted within the area of the works, implement procedures to minimise impact, such as reverting to soft-start piling or stopping temporarily to allow animals to move away from the area. |
| C19.08 | Keep dredging activities within the identified dredge footprint area. |
| C19.09 | Maintain a fauna-spotting function (where practical) during dredging activities. Do not commence dredging if marine mammals, turtles or crocodiles are spotted within the area of dredging, and stop temporarily if fauna is spotted within the area of the dredge head. In both cases, resumption of dredging must wait until fauna has moved away. |
| C19.10 | Project vessels servicing the LNG plant that originate from overseas ports must comply with Commonwealth and local government ballast water management systems and implement Australian Quarantine and Inspection Service hull hygiene measures. |
| C19.11 | All project vessels must comply with all applicable maritime law, especially when passing through the GBRMP. Project vessels will traverse the marine park via designated navigation routes with pilotage as required within port boundaries. |
| **Greenhouse Gas** | |
| C20.01 | Develop and implement a greenhouse gas standard as part of Arrow's HSEMS. |
| C20.02 | Identify and consider measures to reduce emissions intensity and improve the energy efficiency of the different project components throughout the design process. |
| C20.03 | Minimise greenhouse gas emissions through the progressive clearing of areas and implement rehabilitation as soon as practical. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Air Quality** |
| C21.01 | Design the LNG plant to comply with the air quality assessment criteria, which are based upon all relevant air quality standards and objectives. Compliance with these criteria will ensure protection of environmental values within the air quality impact assessment study area and all sensitive receptor areas. |
| C21.02 | Where feasible, apply low-emission technology to equipment with high combustion rates (e.g., gas turbines). |
| C21.03 | Fit compressors and boil-off gas recovery systems with dry gas seals and where practical, hydrocarbon pumps will be fitted with double seals. |
| C21.04 | Minimise fugitive emissions from sources such as pumps, seals, valves, connectors and pipe work via the application of the latest proven stage of development processes, facilities and methods of operation. These include using closed drainage, where practical, minimising the number of flanges, installing dry gas seals on compressors and vapour recovery systems and where applicable, double seals for hydrocarbon pumps. |
| C21.05 | Incorporate waste heat recovery units on the compressor drive gas turbine exhausts to provide process heat to use elsewhere in the LNG plant, thereby reducing operational requirements for gas-fired heaters. |
| C21.06 | Fit all stacks with emissions monitoring ports suitable for continuous monitoring even if continuous monitoring is not currently required to facilitate future monitoring should the need arise. |
| C21.07 | Reduce exposure time of bare soils on the ground surface as far as practicable, and undertake revegetation of bare surfaces as soon as practical following construction. |
| C11.20 | Control speed limits on site via posted speed limit signs and confine vehicles generally to marked trafficable areas. Common with Chapter 11, Geology, Landform and Soils. |
| C11.21 | Keep trafficked surfaces damp during construction with sprayed water when conditions are dry to suppress dust generation. Use water of a similar quality to that which is available in the locality and do not spray as concentrated flow. Common with Chapter 11, Geology, Landform and Soils. |
| C21.08 | Maintain construction vehicles and equipment regularly to reduce exhaust emissions. |
| C21.09 | Where practical, use low-sulfur diesel fuel in diesel-powered equipment (i.e., not more than 0.01% sulfur by mass). |
| C21.10 | Do not use chlorofluorocarbons (CFC), halogens or related materials listed as banned under the Montreal Protocol in new installations. |
| C21.11 | Where practical, limit the volume of hydrocarbons flared or vented to the atmosphere from the LNG plant. Ensure that the flare is luminous and bright (i.e., show smokeless combustion at operating design gas flow rate) and the relative density of emitted smoke does not exceed No.1 Ringelmann Number. |
| C21.12 | Do not vent boil-off gas to the atmosphere; instead route it to the feed gas inlet for reprocessing or sent to the end flash gas compressor for use in the high-pressure fuel gas system. |
| C21.13 | Use low-sulfur fuel in diesel-powered generators will (not more than 0.01% sulfur by mass). |
| C21.14 | Maintain equipment in accordance with manufacturer specifications in order to minimise fugitive emissions. |
| | **Noise and Vibration** |
| C22.01 | Identify during the detailed design of the LNG plant, specific acoustic treatment to be applied to each noise source. |
| C22.02 | Where practical, locate noise-making equipment to maximise the distance between noise sources (e.g., diesel generators) and sensitive receptors. The use of structures or natural topography to create barriers to noise may be used to lessen the noise impacts on sensitive receptors. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Noise and Vibration (cont'd)** | |
| C22.03 | Include appropriate methods to manage blasting activities in the construction environmental management plan. If required, carry out blasting activities in accordance with the guidelines for blasting noise and vibration. |
| C22.04 | Regularly maintain all machinery and equipment and check for excessive noise generation. |
| C22.05 | Where noise from a construction activity would exceed the project night time noise criteria of 45 dB(A) at a sensitive receptor, schedule, where practical construction activities to occur between 7.00 a.m. and 10.00 p.m. |
| C22.06 | Continually review the timing of construction activities to identify opportunities to reschedule concurrent activities where excessive noise is expected. |
| C22.07 | Ensure that project related noise generated during operation complies with the project noise criteria at all assessment locations. |
| **Landscape and Visual** | |
| C23.01 | Protect the tip of Boatshed Point from clearing and cutting to preserve areas of vegetation that help screen lower parts of the LNG plant and construction camp. |
| C23.02 | Where practical, retain the vegetation along the eastern boundary of the LNG plant site to provide some screening to views from the east. |
| C23.03 | Consider potential landscape and visual impacts where there are options for the siting of infrastructure. |
| C23.04 | Where practical, undertake further modifications to the development footprint during detailed design to minimise cutting into the high ground of the Curtis Island strike ridge system and to assist in maintaining a vegetated backdrop and visually absorbing the built form of the development. |
| C23.05 | Investigate potential areas for further retention of vegetation cover at all sites where practical. |
| C23.06 | Investigate opportunities for further planting of a forested landscape buffer around the eastern, southern and western boundaries of the LNG plant site, using bush regeneration techniques and endemic tree species of local provenance consistent, to the greatest extent, with the bushfire strategy. |
| C23.07 | Select materials that are sensitive to the site context where plant operability is not impacted. |
| C23.08 | Use a colour palette for built form that blends with the predominant background colours and which reflects natural hues from the surrounding landscape where plant operability is not impacted. |
| C23.09 | Investigate the use of new insulating paints that may allow greater flexibility in the colour of LNG structures without compromising plant operability or safety aspects. |
| C23.10 | Undertake the detailed lighting design in line with Australian standards. |
| C23.11 | Design aviation lighting to be consistent with the Gladstone Airport Obstacle Limitation Surface Plan (Randl, 2011). |
| C23.12 | Design shore protection to reflect natural forms, where practical. |
| C23.13 | Use industry standards for the construction camp to minimise landscape and visual impacts. |
| C23.14 | Develop landscape and rehabilitation plans for all project sites, particularly the selected TWAF site, which will require remediation after the first construction phase. |
| C23.15 | Consider visibility of stockpiles when siting these within laydown areas, i.e., use laydown areas that are more enclosed in preference to more open areas, wherever practical. |
| C23.16 | Investigate planting at the top, toe and on the retaining structure where terracing is undertaken. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Landscape and Visual (cont'd)** | |
| C23.17 | Consider planting of bands of screening vegetation parallel with the shoreline between elements of the LNG plant if terracing is considered impractical on Curtis Island. |
| C23.18 | Remove temporary structures following completion of construction works and where appropriate, undertake detailed grading of disturbed surfaces to achieve appropriate ground levels. |
| C23.19 | Undertake planting rehabilitation works at the earliest opportunity to minimise erosion and the presence of areas of bare soil (except where technical studies indicate an alternative approach). |
| C23.20 | Minimise night-time working and associated lighting impacts for activities (including construction of the LNG plant). Limit construction activities that need to be highly lit to daytime hours (to the greatest extent practical). |
| C17.16 | Shield/direct the light source onto work areas where practical.<br>Common with Terrestrial Ecology and Marine and Estuarine Ecology. |
| C23.21 | Use 'passive' lighting methods, where practical. These include reflective roadway markers, lines, warnings or information signs and furnishing reflectors. |
| C23.22 | Consider use of solar-powered LED studs, or similar, in roadways and paths of travel as an alternative to permanent lighting, where practical. |
| C23.23 | As part of the decommissioning plan to be developed for the project, investigate an appropriate after use of project areas including any rehabilitation requirements as appropriate. |
| **Indigenous Cultural Heritage** | |
| C24.01 | Develop an approved CHMP or a native title agreement that addresses Aboriginal cultural heritage in consultation with the endorsed Aboriginal parties for the project. |
| C24.02 | Comply with the approved CHMP or native title agreement that addresses Aboriginal cultural heritage. |
| C24.03 | Consider the cultural heritage management principles set out in Section 7.2.3 of Appendix 18, Indigenous Cultural Heritage Impact Assessment, completed for the project when developing a CHMP or native title agreement that addresses Aboriginal cultural heritage. Agree final principles with the relevant Aboriginal parties or native title parties. |
| **Non-indigenous Cultural Heritage** | |
| C25.01 | Prepare a heritage management plan prior to construction and which specifies how known and unknown heritage sites are to be managed during construction. |
| C25.02 | Record the following sites in detail prior to construction and destruction:<br>• Site No. 3: Post-cutting site.<br>• Site No. 4: Old yards.<br>• Site No. 5: Stock enclosure.<br>• Site No. 6: Historic fence line.<br>• Site No. 7: Pre-1870 track alignment.<br>• Site No. 8: Ruins of rendered brick building.<br>• Site No. 11: Various fence alignments (Targinnie). |
| C25.03 | Map the "Birkenhead" outstation (Site No. 1) and record in detail prior to construction activities. Archaeological traces of this site may exist and remote sensing and excavation may be employed prior to construction to identify the extent of cultural heritage. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Non-indigenous Cultural Heritage (cont'd)** | |
| C25.04 | The location of the grave (Site No. 2) at "Birkenhead" outstation is unknown. Employ remote sensing techniques prior to construction to try to locate the grave. Relocate the grave to an alternative location if discovered, to protect it from construction activities. |
| C25.05 | If the grave is not discovered prior to construction, implement a procedure for accidental discovery of remains in this area. |
| C25.06 | Include in the heritage management plan prepared prior to construction, requirements for accidental discovery and management of cultural heritage items or human remains. Conflict resolution and other contingencies will also be addressed in the plan. |
| **Social** | |
| C26.01 | Continue to liaise with other proponents to determine cumulative workforce housing requirement. Use house price and rental data from the REIQ's Queensland Market Monitor and Department of Communities Housing Market Report to determine whether the private market is able to provide sufficient dwellings in the local area for the construction and operation workforces. |
| C26.02 | Identify viable housing options for housing the non local construction workforce likely to reside outside of the construction camps, minimising sourcing housing in the private rental market for non permanent staff unless vacancy rates increase to 3% or higher. Possible options could include:<br>• Provide rental guarantees or other incentives to private investors to encourage the construction of new housing stock which can be used by project staff and remain available for the wider community following the end of the construction phase.<br>• Encourage all non local employees to live in company facilitated housing TWAF unless they have families or other circumstances that make this impractical.<br>• Provide direct and indirect investment in the housing market.<br>• Provide accommodation advice services for workers and their families.<br>Common with Chapter 27, Economics. |
| C26.03 | Continue to engage with the Office of the Coordinator-General and other proponents to identify co-operative strategies that address cumulative housing impacts. |
| C26.04 | Collect data on where workers are residing and whether they have a family with them. Determine the level of local employment and the likely number of non local workers and their families seeking accommodation in the study area.<br>Common with Chapter 27, Economics. |
| C26.05 | Continue to provide data to state and local government to facilitate the creation of a common data set across all major projects. The data collected will be in the format already agreed between existing proponents and the Office of the Coordinator General. |
| C26.06 | Identify preferred approach for facilitation of up to 90 houses during the construction phase and increasing up to 130 houses for long term housing for the non local operational workforce (at Stage1) through the project accommodation strategy. The strategy should assess the state of the market to meet this project generated demand and make the required market interventions to minimise adverse impacts upon the community.<br>Common with Chapter 27, Economics. |
| C26.07 | Identify preferred approach for facilitation of 380 beds in company-facilitated accommodation for construction management (Arrow Energy and contractor) single status workers and 225 beds for operational workers at Stage 1 through the project accommodation strategy.<br>Common with Chapter 27, Economics. |
| C26.08 | Identify opportunities to bring forward facilitation of housing intended for the operations workforce that can be used for the construction workforce.<br>Common with Chapter 27, Economics. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Social (cont'd)** |
| C26.09 | Provide information on the Arrow Energy website on actions taken to meet project housing needs and key data on workforce numbers and approximate numbers housed within the community.<br>Common with Chapter 27, Economics. |
| C26.10 | Collaborate with other proponents in the region and identify opportunities to share temporary accommodation where possible for the construction and maintenance workforces.<br>Common with Chapter 27, Economics. |
| C26.11 | Inform the tourist industry and other peak business bodies of anticipated time frames for peak temporary accommodation demand.<br>Common with Chapter 27, Economics. |
| C26.12 | Work with the Urban Land Development Authority to identify opportunities in the study area to bring additional affordable housing to market for existing residents.<br>Common with Chapter 27, Economics. |
| C26.13 | Work with the state government, the Gladstone Regional Council and the Indigenous community to identify opportunities to provide assistance to not-for-profit housing providers to support the Indigenous community.<br>Common with Chapter 27, Economics. |
| C26.14 | Provide $6.5 million or in kind support of the same value to other non government providers of social housing.<br>Common with Chapter 27, Economics. |
| C26.15 | Provide information on the Arrow Energy website on actions taken to support affordable housing initiatives to offset housing impacts.<br>Common with Chapter 27, Economics. |
| C26.16 | Provide $1 million in financial assistance to the GRC for emergency rental assistance.<br>Common with Chapter 27, Economics. |
| C26.17 | Expand the opportunities available for the region under the Brighter Future's program and the Social Investment Plan. |
| C26.18 | Design and construct the workers camp to have sufficient social and recreational facilities to cater for recreational, fitness and entertainment requirements. |
| C26.19 | Develop and provide workers with an induction and welcome kit which includes a statement of community expectations for new arrivals. Where FIFO workers come from overseas, ensure they are provided with an adequate Australian cultural awareness briefing and information on how to undertake day to day activities, for example banking or shopping. |
| C26.20 | Consult with the GRC and RCCC to identify which social, community or recreational infrastructure is being directly impacted by the project and to what extent. Liaise with the relevant body, for example the Gladstone Foundation, to coordinate efforts across all proponents and identify projects that may provide an equivalent offset or mitigation of impacts. |
| C26.21 | Ensure that there are no ongoing restrictions on the Calliope River boat ramp or Gladstone Marina during the operation of the project. |
| C26.22 | Prohibit non local construction workers and operators from engaging in fishing, crabbing or boating in any exclusion zone. |
| C26.23 | Prohibit all FIFO workers (with the exception of traditional owners) from fishing, crabbing and boating in the Gladstone Regional Council area, whilst on shift/ living in the construction camps. |
| C26.24 | Continue to provide state and local government departments responsible for educational, health and other social infrastructure with forecasts of workforce numbers and projected families to assist in their future service planning. This information will be provided in an agreed format that will allow these departments to plan for cumulative population change. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Social (cont'd)** |
| C26.25 | Post details on the Arrow Energy website of projects which receive funding or in kind support to offset or mitigate direct project impacts. |
| C26.26 | Publically release details of the Brighter Future program for Gladstone on the Arrow Energy website. This will include information on criteria for funding, funds expended, processes for applying and how often funding will be available for applications. |
| C26.27 | Identify the most appropriate methods to recruit and retain Indigenous Australians. This will be done in consultation with DEEDI, Traditional owners and other relevant Indigenous community representatives. |
| C26.28 | For underemployed or unemployed Indigenous people, identify apprenticeships or traineeships that could be made available.<br>Skills set summaries for these positions will be provided to work ready programs to allow them to tailor their training. These roles will be quarantined for successful Indigenous participants in the work ready programs. |
| C26.29 | Identify the most appropriate opportunities for Indigenous businesses to competitively tender to provide goods or services to the project during the operations stage.<br>Send information about these opportunities to the relevant businesses, or business groups. Arrow Energy website. |
| C26.30 | Provide assistance, such as business mentoring, to Traditional Owners and other interested members of the Indigenous community with developing business opportunities and capacity alignment with Arrow Energy's Indigenous Engagement team. Examples of the type of activities that occur as part of this assistance include:<br>• Identification of opportunities to allow joint partnering<br>• Briefings on what business systems and insurances are required to work on the project.<br>• Information on government programs that exist to help Indigenous businesses.<br>• Information on how to pool resources across businesses to tender on larger parcels of work.<br>The Arrow Energy procurement team and the officer responsible for Indigenous Engagement will provide this assistance. |
| C26.31 | Require major contractors to develop a plan that will clearly identify Indigenous opportunities (employment and business) for the project. |
| C26.32 | An Arrow Energy officer will be made responsible for Indigenous engagement to encourage participation and integration of Indigenous employees and track their welfare. |
| C26.33 | Arrow Energy will implement an Indigenous cultural awareness program for construction and operation staff and contractors. The workforce will be exposed to the program during induction. |
| C26.34 | Identify the range of skills required for the labour force and undertake a gap analysis against existing skills availability. Where gaps exist in consultation with the Department of Education and Training identify the method or strategy through which these skills will be filled, e.g., FIFO/DIDO or training.<br>Common with Chapter 27, Economics. |
| C26.35 | Determine how to maximise local employment opportunities and develop a recruitment plan to identify what positions will be targeted without negatively impacting on the availability of local services.<br>Common with Chapter 27, Economics. |
| C26.36 | Develop a policy that facilitates equal opportunity for all suitably qualified persons. |
| C26.37 | Where appropriate, identify opportunities where training provided by the project or other training providers will be able to meet skills gaps in the community for the project to assist in maximising local employment opportunities.<br>Common with Chapter 27, Economics. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Social (cont'd)** |
| C26.38 | Develop a policy identifying training pathways for students and school leavers to assist students in gaining employment upon graduation. This will be done in consultation with SAIN, EQIP, Education Queensland and QMEA. Where relevant training programs have been initiated by other proponents, Arrow Energy will consider coordinating support with these where appropriate.<br>Common with Chapter 27, Economics. |
| C26.39 | Undertake regular reviews of labour requirements and current skills sets to ensure that training strategies meet these needs. |
| C26.40 | Arrow Energy will work with group training organisations and encourage contractors to recruit and retain apprentices or trainees during operations.<br>Arrow Energy will sponsor group training positions during the operations stage of the project. |
| C26.41 | The following existing programs will have positions reserved for suitably qualified students and school leavers from the Gladstone region:<br>• Graduate Program (engineering, planning, social and environmental).<br>• Scholarships.<br>• Vacation Employment.<br>• School Based Training. |
| C26.42 | The following Arrow Energy programs will be expanded to suitably qualified local employees:<br>• Executive and Management Development Programs.<br>• External Education Program.<br>• Vocational/Trade Training.<br>• Specialist Training. |
| C26.43 | Arrow Energy will work with Skills Queensland to deliver work readiness and skills development training programs for vulnerable local people such as the long term unemployed or under skilled, in order to assist them to gain employment. Common with Chapter 27, Economics. |
| C26.44 | Develop a Local Industry Participation Plan (LIPP) in consultation with DEEDI and consistent with the Australian Government Australian Industry Participation Plan. |
| C26.45 | Provide QMI Solutions with the information they require to assist local businesses improve their skills base and tailor their operations to meet the project's needs. |
| C26.46 | Develop processes to ensure local business opportunities are considered in project procurement practises. These processes will allow competitive local business be given fair and reasonable opportunities to provide goods or services to the project. |
| C26.47 | Encourage contractors to source local goods and services where possible. |
| C26.48 | Encourage businesses who provide goods and services to the project to consider Indigenous procurement in order to maximise Indigenous employment opportunities. |
| C26.49 | Arrow Energy will continue to engage with key business bodies regarding appropriate opportunities for local businesses to supply goods and services to the project. |
| C26.50 | Facilitate the communication of the Local Procurement Policy to local service providers. This will involve ongoing communication of project procurement requirements, regular project updates during construction, overview of goods and services packages and supply chain. This will be communicated through initial procurement information sessions in Gladstone for potential suppliers and ongoing on the Arrow Energy website. |
| C26.51 | Participate in existing programs that provide technical assistance and briefings to potential local and regional businesses about opportunities and requirements (e.g., Gladstone Region Leaders in Business – Speakers Series and the Gladstone Tender Readiness Program). Briefings will contain information on management systems and other requirements. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Social (cont'd)** | |
| C26.52 | Collaborate with the existing job service that has been set up by other proponents for local businesses and use this to advertise for local positions. This will allow applicants to choose between industry and non industry jobs. |
| C26.53 | Provide information to the TAFE system to inform the specialised small business solutions programs on what is required to provide goods and services to the LNG industry. |
| C26.54 | In accordance with project requirements an emergency management plan will be developed that will cover joint emergency response planning in collaboration with emergency service providers and local neighbours (e.g., in response to boating or traffic accidents). |
| C26.55 | Ensure monitoring results of workplace health and safety are communicated to the public and to the RCCC as part of Arrow Energy's annual reporting. |
| C26.56 | Details of the approved traffic management plans will be made available on the Arrow Energy website. |
| C26.57 | Continue to liaise with Maritime Safety QLD regarding their safety education campaign for boat users and anglers. |
| C26.58 | The project will collaborate with other proponents to coordinate communications and responses to safety concerns such as increased activity in Gladstone Harbour or other activities associated with the LNG industry. |
| C26.59 | Arrow Energy will consult with landholders in close proximity to construction works in advance of works. |
| C26.60 | Arrow Energy will publically release information on how environmental impacts are being offset by the project. |
| C26.61 | Implement a community safety awareness program covering project activities in conjunction with industry and government partners. |
| C26.62 | Complementing the induction and welcome kit provided at induction (in the community investment and wellbeing action plan), non local employees will also be provided with relevant information on sexual health and fatigue management at induction. |
| C26.63 | Develop an employee wellbeing program that monitors the mental and physical health of employees and contractors. Information on support services to be provided on induction with updates provided at regular intervals. This program should allow for monitoring employee wellbeing with the potential to undertake surveys to measure progress. |
| C26.64 | A project code of conduct, based on Arrow Energy's existing Code of Conduct and 'drug and alcohol' policy will cover workforce behaviour while on shift or on site. This code will be made available to the community on the website. FIFO workers will be bound by these while in transit to and from the project as well as on shift. |
| C26.65 | Arrow Energy will explore the opportunity to stagger rostering with other proponents to avoid staff from all LNG projects passing through Gladstone simultaneously. |
| C26.66 | Arrow Energy will provide an onsite health service for the workforce on Curtis Island and will liaise with emergency services and Queensland health in the planning of this facility. |
| C26.67 | Arrow Energy will support programs that contribute to the health and wellbeing of Indigenous employees. |
| C26.68 | Arrow Energy will communicate information about measures to reduce the impact on air quality through the Arrow Energy website. |
| C26.69 | Details of measures to address impacts on visual amenity will be communicated on the Arrow Energy website. |
| C26.70 | Details of measures to address noise impacts will be available on the Arrow Energy website. |
| C26.71 | Continue to participate in the Industry Leadership Group for CSG Resource Projects. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Social (cont'd)** |
| C26.72 | Participate in the existing RCCC for Gladstone. |
| C26.73 | Participate in CSG Industry Monitoring Group established by APLNG and QCLNG. |
| C26.74 | As per the community investment and wellbeing plan liaise with the relevant body that can coordinate investment efforts across all proponents. |
| C26.75 | As per the housing and accommodation plan, continue to engage the Office of the Coordinator-General to manage housing and accommodation across the industry. |
| C26.76 | As per the workforce and training plan, continue to work with existing training providers to coordinate assistance for relevant training programs. |
| C26.77 | As per the local content and investment plan, collaborate with the job service established by other proponents for local businesses. |
| | **Economics** |
| C26.02 | Identify viable housing options for housing the non local construction workforce likely to reside outside of the construction camps, minimising sourcing housing in the private rental market for non permanent staff unless vacancy rates increase to 3% or higher. Possible options could include:<br>• Provide rental guarantees or other incentives to private investors to encourage the construction of new housing stock, which can be used by project staff and remain available for the wider community following the end of the construction phase.<br>• Encourage all non local employees to live in company facilitated housing or TWAFs unless they have families or other circumstances that make this impractical.<br>• Provide direct and indirect investment in the housing market.<br>• Provide accommodation advice services for workers and their families.<br>Common with Chapter 26, Social. |
| C26.04 | Collect data on where workers are residing and whether they have a family with them. Determine the level of local employment and the likely number of non local workers and their families seeking accommodation in the study area.<br>Common with Chapter 26, Social. |
| C26.06 | Identify preferred approach for facilitation of up to 90 houses during the construction phase and increasing up to 130 houses for long term housing for the non local operational workforce (at Stage 1) through the project accommodation strategy. The strategy should assess the state of the market to meet this project generated demand and make the required market interventions to minimise adverse impacts upon the community.<br>Common with Chapter 26, Social. |
| C26.07 | Indentify preferred approach for facilitation of 380 beds in company facilitated accommodation for construction management (Arrow Energy and contractor) single status workers and 225 beds for operational workers ( at Stage 1) through the project accommodation strategy.<br>Common with Chapter 26, Social. |
| C26.08 | Identify opportunities to bring forward facilitation of housing intended for the operations workforce that can be used for the construction workforce.<br>Common with Chapter 26, Social. |
| C26.09 | Provide information on the Arrow Energy website on actions taken to meet project housing needs and key data on workforce numbers and approximate numbers housed within the community.<br>Common with Chapter 26, Social. |
| C26.10 | Collaborate with other proponents in the region and identify opportunities to share temporary accommodation where possible for the construction and maintenance workforces.<br>Common with Chapter 26, Social. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Economics** |
| C26.11 | Inform the tourist industry and other peak business bodies of anticipated time frames for peak temporary accommodation demand.<br>Common with Chapter 26, Social. |
| C26.12 | Work with the urban land development authority (ULDA) to identify opportunities in the study area to bring additional affordable housing to market for existing residents.<br>Common with Chapter 26, Social. |
| C26.13 | Work with the state government, the GRC and the Indigenous community to identify opportunities to provide assistance to not for profit housing providers to support the Indigenous community.<br>Common with Chapter 26, Social. |
| C26.14 | Provide $6.5 million or in kind support of the same value to other non government providers of social housing.<br>Common with Chapter 26, Social. |
| C26.15 | Provide information on the Arrow Energy website on actions taken to support affordable housing initiatives to offset housing impact.<br>Common with Chapter 26, Social. |
| C26.16 | Provide $1 million in financial assistance to the Gladstone Regional Council for emergency rental assistance.<br>Common with Chapter 26, Social. |
| C26.34 | Identify the range of skills required for the labour force and undertake a gap analysis against existing skills availability. Where gaps exist in consultation with the Department of Education and Training, identify the method or strategy through which these skills will be filled, e.g., FIFO/DIDO or training.<br>Common with Chapter 26, Social. |
| C26.35 | Determine how to maximise local employment opportunities and develop a recruitment plan to identify what positions will be targeted without negatively impacting on the availability of local services.<br>Common with Chapter 26, Social. |
| C26.37 | Where appropriate, identify opportunities where training provided by the project or other training providers will be able to meet skills gaps in the community for the project to assist in maximising local employment opportunities.<br>Common with Chapter 26, Social. |
| C26.38 | Develop a policy identifying training pathways for students and school leavers to assist students in gaining employment upon graduation. This will be done in consultation with the Schools and Industry Network, Education Queensland Industry Partnership and the Queensland Minerals and Energy Academy. Where relevant training programs have been initiated by other proponents, Arrow Energy will consider coordinating support with these where appropriate.<br>Common with Chapter 26, Social. |
| C26.43 | Arrow Energy will work with Skills Queensland to deliver work readiness and skills development training programs for vulnerable local people such as the long term unemployed or under skilled, in order to assist them to gain employment.<br>Common with Chapter 26, Social. |
| C27.01 | Engage and collaborate with Construction Skills Queensland to identify potential strategies for increasing the capacity of local job seekers to develop appropriate skills for construction. |
| C27.02 | Inform and advise stakeholders of project goods and services requirements, and of opportunities and requirements for securing service provision and supply contracts. This will include implementation of a Local Content Strategy to aid suitable businesses in the tender process. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Economics (cont'd)** |
| C27.03 | Inform council and economic development organisations of goods and services required by the Arrow LNG Plant that are not currently available or are under-serviced from within Gladstone to attract investment and develop the supply chain. |
| C27.04 | Investigate options to develop relevant networks to connect local business and enable collaboration in meeting service supply requirements of the LNG industry. |
| C27.05 | Develop a detailed worker accommodation plan to accommodate workers during the period between final investment decision and commissioning of the construction camps. This will include continuing to liaise with the other proponents, housing providers and state and local government to determine the cumulative housing demand and cooperative strategies which address this demand. |
| C27.06 | Develop construction worker camps as soon as practical following final investment decision. |
| C27.07 | Make the local residential development market aware of the scale and timing of project accommodation requirements and construction and operations activities. |
| | **Traffic and Transport** |
| C28.01 | Develop a traffic management plan for the project in consultation with DTMR and Gladstone Regional Council. Methods to ensure public safety at project sites, avoid obstruction to other road users, address seasonal weather influences on transport arrangements and manage any issues including driver fatigue will be detailed in the plan. The traffic management plan will address the movement of oversized loads.<br>Common with Chapter 29, Hazard and Risk. |
| C28.02 | Undertake a pavement intersection assessment and bridge capacity assessment when preferred transport routes are identified. |
| C28.03 | Implement a formal local workforce car-pooling or busing strategy to minimise the number of local project personnel using the roads during peak hour and to maximise usage of accommodation on Curtis Island. A busing strategy may comprise a number of small buses travelling from areas central to where personnel live. A staff matching or car pooling strategy will also be considered. |
| C28.04 | Use DTMR/Gladstone Regional Council preferred freight routes where practical. |
| C28.05 | Separate pedestrian access from vehicle access in access to construction and operational work sites (where practical). |
| C28.06 | Consult DTMR and Gladstone Regional Council on the scope and timing of already identified upgrades and project specific upgrades (including potential contributions) that may be required when final routes for freight and workforce bus routes are confirmed. This process will take place during the preparation of the detailed traffic management plan for the project and may include, subject to final TWAF/mainland launch site selection and completion of the detailed logistics strategy:<br>• Timing of Gladstone–Mount Larcom Road upgrades and whether upgrades need to be brought forward.<br>• Design of a new intersection accessing the proposed tunnel entry site from Gladstone–Mount Larcom Road.<br>• Intersection A: Hanson Road/Blain Drive/Alf O'Rourke Drive (all transport scenarios). DTMR have identified works to this intersection; however, the project may necessitate additional works. Timing of DTMR works may need to be brought forward.<br>• Intersection B: Gladstone–Mount Larcom Road/Landing Road (transport scenario 3). The existing intersection layout is not expected to accommodate project related traffic at 2024 and 2026. DTMR has identified works at this intersection (four lanes required between 2020 and 2030). Timing of DTMR works may need to be brought forward to early in the 2020 to 2030 period to accommodate project traffic. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Traffic and Transport (cont'd)** |
| C28.06 (cont'd) | • Intersection C: Gladstone–Mount Larcom/Red Rover Road (transport scenario 3). DTMR have identified works to this intersection; however, the project may necessitate additional works. Timing of works may need to be brought forward due to the project. |
| C28.07 | Consult with providers of air services to Gladstone on the timing of construction and operations weekly shifts to aid commercial decision making by service providers on the frequency of services and capacity of aircraft. |
| C28.08 | Provide a share of funding toward the new instrument landing system at Gladstone Airport upon project FID. |
| C28.09 | Develop a shipping activity management plan in consultation with Gladstone Regional Council, Gladstone Ports Corporation, Maritime Safety Queensland and all contractors operating within the Gladstone Port.<br>Common with Chapter 29, Hazard and Risk. |
| C28.10 | Operators of project vessels, Arrow Energy staff and contractors, to comply with the Gladstone port procedures manual, which details LNG operating parameters. |
| C28.11 | Ensure that operators of project vessels, Arrow Energy staff and contractors comply with the LNG marine operations maritime safety management plan if/when this plan is agreed between Maritime Safety Queensland, Gladstone Ports Corporation and the other LNG proponents.<br>Common with Chapter 29, Hazard and Risk. |
| C28.12 | Ensure that operators of project vessels, Arrow Energy staff and contractors comply with Arrow Energy rules for marine vessels and LNG shipping operations in addition to following the Oil Companies International Marine Forum (OCIMF) and Society of International Gas Tanker and Terminal Operators guidelines (SIGTTO). Rules will address crew competencies, a three-stage approvals process for each LNG vessel (i.e., vetting of ships and operators prior to engagement to transport LNG), scheduling and other requirements and quality assurance. For the construction period, additional rules will address safety and competency requirements of smaller marine vessels and vessel operators involved with the project. |
| C28.13 | Provide support for tug and LNG carrier pilot training organised by all proponents, the Gladstone Ports Corporation, Maritime Safety Queensland and SMIT tugs. |
| | **Hazard and Risk** |
| C29.01 | Undertake qualitative and quantitative hazard and risk assessments (including process safety studies) in accordance with applicable regulations and standards as a part of the ongoing design process and throughout the life of the project. |
| C29.02 | Consult with relevant Queensland government agencies including emergency services organisations and maritime safety authorities on the management of hazards and risks in accordance with relevant legislative requirements, codes and standards. |
| C28.01 | Develop a traffic management plan for the project in consultation with DTMR and Gladstone Regional Council. Methods to ensure public safety at project sites, avoid obstruction to other road users, address seasonal weather influences on transport arrangements and manage any issues including driver fatigue will be detailed in the plan. The traffic management plan will address the movement of oversized loads.<br>Common with Chapter 28, Traffic and Transport. |
| C28.09 | Develop a shipping activity management plan in consultation with Gladstone Regional Council, Gladstone Ports Corporation, Maritime Safety Queensland and all contractors operating within the Gladstone Port.<br>Common with Chapter 28, Traffic and Transport. |
| C28.11 | Ensure that operators of project vessels, Arrow Energy staff and contractors comply with the LNG Marine Operations Maritime Safety Management Plan if/when this plan is agreed between Maritime Safety Queensland, Gladstone Ports Corporation and the other LNG proponents.<br>Common with Chapter 28, Traffic and Transport. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Land Use and Planning** |
| C30.01 | Design the feed gas pipeline to minimise the project land requirement and extent of potential disruption to existing and alternate land uses. |
| C30.02 | Site, design, construct and operate project components having regard to legislation, policy, and statutory instruments and guidelines. Compliance with design codes and standards of the project components during construction, operation and decommissioning will be assessed and determined through a range of post EIS applications for approvals, permits and licences. |
| C30.03 | Establish exclusion zones around the LNG plant and maritime areas to ensure the safety of LNG personnel, the public, shipping and maritime assets and do not unnecessarily prevent public access to areas of coastline. |
| C30.04 | Prior to construction, consult landowners within the project area on the potential direct impacts to their assets, land use activities, and any temporary disruption to supporting utility services and infrastructure. This consultation will inform the final property-specific design and mitigation measures. |
| C30.05 | Liaise with the Regional Harbour Master of Gladstone on the potential for telecommunications devices to affect aids to navigation infrastructure or services. |
| | **Waste Management** |
| C31.01 | Implement employee training and other programs that encourage employees to reduce waste. |
| C31.02 | Ensure that contractors comply with Arrow's Health, Safety and Environmental Management System (HSEMS) and implement a waste management plan in accordance with the procedure. |
| C31.03 | Substitute raw materials or inputs with an equivalent, less hazardous or toxic material, where practical. |
| C31.04 | Institute good housekeeping and operating practices, including substituting materials for an equivalent and more environmentally friendly option and inventory control to reduce the amount of waste resulting from materials that are out of date, off specification, contaminated, damaged, or excess to project needs. |
| C31.05 | Implement stringent waste segregation processes to prevent the co-mingling of water and waste streams. |
| C31.06 | Clear the smallest construction footprint practical, thereby reducing the generation of green waste, acid sulfate soils, overburden, topsoil and greenhouse gases. |
| C31.07 | Evaluate waste production processes and identify potentially recyclable materials. |
| C31.08 | Identify and recycle products that can be reintroduced into the process or activity at the site. |
| C31.09 | Establish recycling objectives and formal tracking of waste generation and recycling rates. |
| C31.10 | Install dedicated skip bins for designated wastes around the construction site. |
| C31.11 | Establish a dedicated waste sorting or laydown area early in the project. Store inert material such as concrete in this area, and periodically crush and screen when sufficient quantity has been gathered. Use crushed material as rock base and fill, or dispose to landfill. |
| C31.12 | Mulch leaves, branches and timber on site and use this for site stabilization or erosion control and landscaping. |
| C31.13 | Collect and recycle ferrous and non-ferrous metals, paper and cardboard, glass, spent sulfuric acid and batteries, and waste oils. Dispose of solid wastes that cannot be recycled or re-used at a landfill or licensed facility. |
| C31.14 | Require suppliers to consider measures and options to reduce packaging and increase recycling. Include this requirement in the tendering and contracting process. |
| C31.15 | Store wastes in a manner that prevents the co-mingling of, or contact between incompatible wastes and that allows for inspection between containers to monitor leaks or spills. |
| C31.16 | Provide adequate ventilation where volatile wastes are stored. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| | **Waste Management (cont'd)** |
| C31.17 | Provide hardstanding surfaces at oil storage areas, fuel filling points and the mechanical repair shop. |
| C14.04 | Store fuels, chemicals and hazardous wastes in appropriately sized bunded storage facilities (in leak-proof sealed containers).<br>Common with Chapter 14, Groundwater. |
| C31.18 | Install drainage and sump systems in appropriately sized bunded compounds to assist with the removal of any waste materials released into the containment system. |
| C31.19 | Locate stockpiles of waste materials (such as concrete, tyres and waste polyethylene) in dedicated laydown areas with appropriate drainage. |
| C31.20 | Label all storage containers for clear identification of the contents, as per the appropriate regulations. |
| C13.12 | Develop appropriate spill prevention and response plans to cover project activities and the types and quantities of fuel, oil and chemicals held at each site.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality and Chapter 14, Groundwater. |
| C13.13 | Train all relevant personnel in spill response and recovery procedures.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality and Chapter 16, Marine Water Quality and Sediment. |
| C31.21 | Cover waste storage bins for domestic and food wastes. |
| C31.22 | Use an appropriately licensed contractor to collect (on a regular basis) waste generated from accommodation quarters. |
| C31.23 | Strip topsoil from areas of planned soil disturbance to provide material for rehabilitation, where practical. |
| C31.24 | Stockpile excess overburden (that is not suitable for hardstand use or site fill) on site, where practical. Overburden will be managed to ensure runoff is controlled and erosion is minimised. |
| C31.25 | Handle waste chemicals in accordance with the appropriate material safety data sheet (MSDS). |
| C31.26 | Provide sufficient space to allow for the segregation and storage of wastes. |
| C31.27 | Treat the following wastes in the effluent treatment plant, with the exception of sewage from the pioneer camp and the TWAF:<br>• Contaminated or potentially contaminated stormwater from process areas at the LNG plant.<br>• Dry weather flow such as water from wash-down bays and liquids wastes from the laboratory.<br>• Effluent from LNG operations such as wastewater and slops oil from the boil-off gas compressor area and the flare knock-out water.<br>• Gas turbine wash water.<br>• Oily water from the slops oil tank.<br>• Sewage and greywater from the accommodation areas and the LNG plant. |
| C14.08 | Collect sewage and greywater generated from the pioneer camp in portable disposal units or other mobile collection facilities. Use a licensed waste contractor to service the sewage facilities and dispose of effluent at a licensed waste management facility. Dispose of sewage from the mainland TWAF through a connection to the local sewerage network or ensure that it is collected in portable disposal units or other mobile collection facilities.<br>Common with Chapter 14, Groundwater. |
| C31.28 | Design the effluent treatment plant package units to meet the final effluent discharge requirement. |
| C31.29 | Design the effluent treatment plant based on the first 30 minutes of peak rainfall flow estimation from process areas. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Waste Management (cont'd)** | |
| C31.30 | Monitor treated effluent and reroute any discharge that is off-specification back to the effluent treatment plant for retreatment. |
| C31.31 | Make alternative storage and disposal options available during times of system failure and in conditions preventing discharge to land such as rain events. Distribute the effluent treatment plant discharge to tanks for re-use on site. The tanks can be by-passed and the treated effluent discharged to the marine outfall if necessary. |
| C31.32 | Maintain records of inspection, maintenance, sampling, and cleaning of the effluent treatment plant. |
| C31.33 | Do not dispose of any waste in landfills or by incineration on Curtis Island. |
| C31.34 | Irrigate to land or re-use on site treated wastewater from the effluent treatment plant. |
| C31.35 | Develop a recycled water management plan for the project. Undertake a site assessment and desktop study to select appropriate sites, vegetation and irrigation methods to support the development of the plan. |
| C31.36 | Direct brine from the reverse osmosis plant into Port Curtis via a diffuser outfall pipe located a sufficient distance offshore to ensure free flowing current conditions to adequately disperse the brine. |
| C31.37 | Collect the clean catchment runoff through peripheral drains at the LNG plant site discharging to Port Curtis. |
| C16.01 | Design of the discharge outfall from the LNG plant will include a three-port diffuser at the end of the pipeline located close to the water surface (or the ports angled towards the surface) to maximise dilution of the negatively buoyant discharge stream.<br>Common with Chapter 16, Marine Water Quality and Sediment. |
| C31.38 | Install signs on site clearly indicating drains that discharge directly to the marine environment. |
| C31.39 | Transport excess concrete to the mainland for disposal or re-use if there is no use for the material on site. |
| C13.10 | Manage all surface water generated from the LNG plant site by a stormwater treatment system to ensure discharged water complies with regulatory requirements.<br>Common with Chapter 13, Surface Water Hydrology and Water Quality. |
| C31.40 | Engage an appropriately licensed waste contractor (on an as-required basis) to remove from site those specific liquid wastes that cannot be processed on site. |
| C31.41 | Engage an appropriately licensed waste contractor to transport off site all solid waste that cannot be reprocessed or recycled on site, for disposal at a recycler, reprocessor or other waste management facility such as a landfill. The majority of the solid waste will be disposed of at the Benaraby Regional Landfill. Agreement for the disposal of solid waste at this landfill will be obtained from Gladstone Regional Council. |
| C31.42 | Ensure all vehicles entering and leaving Curtis Island are clean, and loads securely stowed, and covered where practical. |
| C31.43 | Record all regulated wastes removed from the site in a waste register. |
| C31.44 | Dispose of all regulated wastes at licensed waste management sites within Queensland, unless a specialised treatment is required that is not available in Queensland at the time treatment and disposal is required. |
| C31.45 | Transport all regulated wastes by a waste transporter with the appropriate DERM authority to collect and dispose of the waste. |
| C31.46 | Ensure that vehicles transporting regulated waste are licensed to carry the particular type of waste and that operators complete appropriate waste tracking documentation. |

**Table A8.1 Arrow LNG Plant: Commitments (cont'd)**

| Number | Commitment |
|---|---|
| **Waste Management (cont'd)** | |
| C31.47 | Develop an emergency response plan for the project and include spill contingency or emergency measures. Make material safety data sheets available at the LNG plant and other project sites to aid in the identification of appropriate spill clean-up and disposal methods. |
| C31.48 | Ensure that specific spill prevention procedures cover the unloading and loading activities at the LNG jetty and MOF in accordance with applicable international standards and guidelines. Spill prevention procedures will specifically address advanced communications and planning with the receiving terminal. |
| C31.49 | Manage combustible wastes and ignition sources appropriately to eliminate fire hazards. |
| C31.50 | Divert firewater generated in process areas or other areas draining to the controlled discharge facility to the effluent treatment plant. Additional firewater will be directly discharged through the marine outfall. |