

# Statement of Reasons

## GOLD VALLEY ENERGY PTY LTD – KITTYHAWK MICRO LNG PROJECT

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### PROPOSAL

Gold Valley Energy Pty Ltd (the Proponent) submitted the Notice of Intent (NOI) for the Kittyhawk Micro LNG Project (the Proposal) to the Northern Territory Environment Protection Authority (NT EPA) on 25 September 2019 for consideration under the *Environmental Assessment Act 1982* (EA Act). Further information was requested on 22 November 2019 to inform the NT EPA's decision. The Proponent responded to the further information request on 8 December 2019.

The Proposal is located on a 15 ha site within the proposed Kittyhawk Industrial Estate at Middle Arm, about 16 km southeast of Darwin city and 11 km southwest of Palmerston. The key characteristics of the Proposal are summarised in Table 1. A detailed description of the Proposal is provided in Section 4 of the NOI.

The Proposal is to construct and operate a small scale facility that would produce 250 tonnes per day of liquefied natural gas (LNG) sourced from the Blacktip gas field in the Joseph Bonaparte Gulf approximately 245 km southwest of Darwin. Feed gas would be transported to the Proposal via the Bonaparte, Amadeus and Wickham Point gas pipelines. The Proponent estimated the production capacity of the Proposal to be equivalent to 0.72% of the Ichthys and Darwin LNG facilities production combined. A single mixed refrigerant process would be used for liquefaction involving:

- purification of natural gas using amine to remove CO<sub>2</sub> and H<sub>2</sub>S
- drying of natural gas with molecular sieves to remove residual water
- removal of mercury from the natural gas via a mercury filter
- residual heavy hydrocarbon removal using molecular sieves
- liquefaction of the purified, dried gas via a cold box refrigerant system to produce LNG
- removal of excess nitrogen from the LNG via a nitrogen rejection/end flash gas unit.

A cooling system comprising direct air cooling, closed loop water cooling and an evaporative cooling tower would be required to remove heat from the process. A flare system would be used to burn waste gas.

Power for the Proposal would be generated by two 3.5 MW high efficiency gas engines using gas produced on site. A grid power connection would potentially be used as a backup during planned maintenance and for start-up purposes, with an approximate import of 3.5 MW. A boil off gas unit would recover and compress boil off gas from LNG storage and loading for use as fuel gas for the gas engines.

Approximately 4500 m<sup>3</sup> of LNG would be stored onsite in tanks. The Proponent's concept design includes a configuration of either nine 500 m<sup>3</sup> tanks or five 900 m<sup>3</sup> tanks. The stored LNG would be pumped to a truck loading facility via loading arms and loaded onto triple road tankers for transport (5-6 trucks per day) along heavy vehicle routes to remote energy users within ~1500 km of Darwin. The LNG would provide an alternative fuel source to diesel with reduced emissions (~24% less CO<sub>2</sub>) and reduced energy costs (~20%) for heavy vehicles and other remote applications. The NOI stated that this would result in economic benefits to the NT economy and deliver environmental benefits such as reduced greenhouse gas and sulfur dioxide emissions.

**Table 1: Key Proposal characteristics**

| Characteristic               | Description/size/quantity  |
|------------------------------|--|
| Activity description         | Conversion of natural gas to LNG.  |
| Location                     | Lot 2 within proposed Stage 1 development of the Kittyhawk Industrial Estate. Lot 4 is proposed as an alternative, should Lot 2 be unavailable.  |
| Land zoning and tenure       | Land is zoned for Development (DV). The Proponent would obtain tenure from the Land Development Corporation (LDC) once the subdivision is completed.   |
| Site overview                | The site has been previously used for gravel extraction and is dominated by native bushland. Terrain is variable consisting of flat to gently sloping eucalyptus woodland leading to lower slopes with pandanus and melaleuca. About 6 ha of the 15 ha footprint would require clearing.   |
| Surrounding area overview    | Beyond the site boundary are marine fringing areas and two tidal tributaries of the Elizabeth River to the east and west. About 60-70% of the site has been previously cleared. The Proposal is located 255 m northwest of the existing Weddell Power Station, ~3 km south east of Bladin Village and ~6.5 km from the nearest residential area of Bellamack. Other industrial developments in the vicinity include the Channel Island Power Station, Darwin LNG, Ichthys Onshore LNG facility and the BOC helium facility.                                  |
| Major equipment / components | Inlet facilities, acid gas removal unit (AGRU), dehydration unit, mercury removal unit, heavy hydrocarbon removal unit, liquefaction unit (cold box), cooling system, nitrogen rejection / end flash gas unit, LNG storage tanks and loading unit, refrigerant storage and make-up unit, fractionation unit, safety vent and flare system, boil off gas unit, power generation and distribution, demineralised softened water and circulation water unit, additional utilities and auxiliary systems, diesel storage, firefighting system and sewage system. |
| Water demand                 | During operations 7 kL/h (168 KL/d and 61.32 ML/y) via reticulated supply.   |
| Electrical demand            | Up to 3.5 MW via grid connection for commissioning, start-up, black start and during periods of site power generation maintenance.   |
| Gas usage                    | Up to 15 Terajoules per day (TJ/d)   |
| Air emissions                | Estimated 0.04 million tonnes per annum (Mtpa) CO <sub>2-e</sub> , 0.45 tonnes per annum (tpa) SO <sub>x</sub> , 170 tpa NO <sub>x</sub> , 0.1 tpa particulates, 0.165 tpa H <sub>2</sub> S.   |
| Stormwater                   | Clean stormwater discharged via infiltration and dissipation in accordance with Stormwater Management Plan and development approval conditions.<br><br>Potentially contaminated stormwater (first flush) directed to the accidentally oil contaminated (AOC) collection pit with a corrugated plate interceptor (CPI) unit to recover oil for offsite disposal.  |
| Liquid waste                 | About 7 tonnes per day of reject reverse osmosis water, reused on site where practicable, or disposed to land via irrigation. Commissioning liquid wastes, process water and amines reused on site (where practicable) with any excess disposed of offsite by a licensed waste contractor. Sewage and grey water either disposed of offsite by a licensed waste contractor or treated on site with septic or alternative treatment systems.  |
| Solid waste                  | Some construction waste. Several listed wastes and other solid wastes would be produced during operations. Waste disposal would be via a licensed waste contractor.  |

Construction of the facility is estimated to take 10 months, followed by commissioning (~6 months) and start-up (~2 months). The plant would be designed to operate continuously for 20+ years and would be decommissioned and removed at the end of its operational life. Approximately 30 to 40 people would be employed during construction and 20 people employed during operations, with

the LNG transport contract to provide an additional 12 jobs. A shutdown workforce of approximately 30 people would be required for about two weeks every two years.

## CONSULTATION

The NOI and further information has been reviewed as a notification under the EA Act in consultation with Northern Territory Government (NTG) advisory bodies (see Attachment B) and the responsible Minister, in accordance with clause 8(1) of the Environmental Assessment Administrative Procedures (EAAP).

## JUSTIFICATION

Having regard to the NOI and further information, the NT EPA evaluated the potentially significant environmental impacts and risks associated with the Proposal in line with the NT EPA's environmental factors and objectives, and in accordance with the requirements under the EA Act. The NT EPA identified five environmental factors (Table 2) that could potentially be significantly impacted by the Proposal. The NT EPA considered the importance of other environmental factors during the course of its assessment, however those factors were not identified as being potentially significantly impacted.

**Table 2. Key environmental factors**

| Theme                  | Key Environmental Factor                   | Objective   |
|------------------------|--|---|
| Air                    | Air quality and greenhouse gases           | Maintain air quality and minimise emissions and their impact so that environmental values are protected.  |
| Land                   | Terrestrial flora and fauna                | Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.  |
|                        | Terrestrial environmental quality          | Maintain the quality of land and soils so that environmental values are protected.  |
| Water                  | Inland water environmental quality         | Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected. |
| People and Communities | Social, economic and cultural surroundings | Protect the rich social, economic, cultural and heritage values of the Northern Territory.  |

### 1. Air quality and greenhouse gases

**Objective:** *Maintain air quality and minimise emissions and their impact so that environmental values are protected.*

The Proposal would produce a number of atmospheric pollutants including CO, CO<sub>2</sub>, SO<sub>x</sub>, NO<sub>x</sub>, H<sub>2</sub>S, particulates and volatile organic compounds (VOCs). Emissions would be generated from direct and fugitive sources including flaring, venting and gas combustion engines for power generation. Dust generated from vehicle movements and excavation during construction may also impact ambient air quality.

The Proponent noted that the feed gas stream for the Proposal is required to meet Amadeus gas pipeline specifications and therefore there is certainty that the concentration of potential air pollutants including H<sub>2</sub>S, mercury and VOCs is limited to the pipeline transport requirements. Additionally, the Proponent stated that gas sourced from the Blacktip gas field naturally has a low mercury and H<sub>2</sub>S content, and that Amadeus pipeline gas measurements for these pollutants are reported below detectable limits. Air pollutant emissions estimates from the Proposal are provided at Table 1. Approximately 76% of the estimated greenhouse gas emissions from the Proposal are from onsite power generation.

The Proponent conducted Gaussian air dispersion modelling to determine ambient concentrations of benzene and H<sub>2</sub>S from the acid gas removal unit. Modelling was undertaken consistent with the New South Wales (NSW) guideline for modelling and assessment of air pollutants.<sup>1</sup> Modelling calculations indicated that, in a worst case scenario, at the nearest receptor the ground level concentration of H<sub>2</sub>S is expected to be 0.24 parts per billion by weight (ppb(w)) and the maximum ground level concentration at a distance of 1 km is 6.1ppb(w), both of which are well below the detectable limit for human smell.<sup>2</sup>

The ground level concentration of benzene at the nearest receptor was calculated as 0.05 ppb(w) and the maximum ground level concentration at a distance of 1 km is 1.23 ppb(w). The NSW guideline<sup>1</sup> sets the impact assessment criteria for benzene at 9 ppb averaged over one hour. Modelling calculation results indicate the predicted worst case scenario benzene emissions are well below this assessment criteria.

The Proponent compared average ground level concentrations<sup>3</sup> of nitrogen dioxide, sulfur dioxide, ozone and particulates (PM10 and PM2.5) from 2018/19 and expressed these as a percentage of the ambient air quality NEPM<sup>4</sup> criteria, indicating <2% of the criteria for oxides of sulfur and nitrogen and <25% of the criterion for ozone. Particulate concentrations ranged from 27-43% of the NEPM criteria for PM10 and 17-55% for PM2.5, noting a significant increase in particulates during the dry season due to bushfires.

To provide context on the relative volume of emissions, the Proponent calculated emissions from the Proposal as a percentage of the combined emissions from nearby operating large scale LNG facilities<sup>5</sup>. This indicated that the proposed emissions would comprise <1% of the CO<sub>2</sub>, sulfur oxides and particulates emissions; and <5% of the nitrogen oxides and H<sub>2</sub>S emissions of those facilities.

Based on the modelling and calculations outlined above, the Proponent concluded that air emissions from the Proposal would not impact on any receptors, would have no material effect on the ambient air quality of the Darwin region, and would not significantly limit the air shed capacity to accommodate future urban or industrial growth. The Proposal is not expected to contribute a significant portion of, or increase to, annual greenhouse gas emissions in the NT.

The basis of design for the Proposal has adopted the approach of reducing environmental risks to 'as low as reasonably practicable' (ALARP) and the Proponent has committed to investigate and implement several measures to avoid or reduce emissions and increase efficiency. Such measures

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<sup>1</sup> NSW EPA, 2016. *Approved methods for the modelling and assessment of air pollutants in NSW*.

<sup>2</sup> Based on limit of 8ppb(v) from: Amoore J E, Hautala E. *Odor as an aid to chemical safety: Odor thresholds compared with threshold limit values and volatilities for 214 industrial chemicals in air and water dilution*. Journal of Applied Toxicology 3: 272-290, 1983.

<sup>3</sup> NT EPA 2019, *Northern Territory Air Quality Monitoring network*. Available at: <https://nt.gov.au/environment/environment-data-maps/air-quality-monitoring>

<sup>4</sup> National Environmental Protection Council 1998, *National Environment Protection (Ambient Air Quality) Measure*. Available at: <http://www.nepc.gov.au/nepms/ambient-air-quality>

<sup>5</sup> Ichthys LNG is located 6km to the north-northwest <https://www.inpex.com.au/our-projects/ichthys-lng-project/>; and Darwin LNG is located 10km to the northwest <http://www.conocophillips.com.au/what-we-do/our-projects-activities/darwin-lng/>

include use of end flash gas in power generation as an alternative to venting, battery use to increase power station efficiency and reduce flaring, waste heat recovery, use of evaporative cooling, optimising thermal efficiency and minimising fugitive emissions. The Proponent considered the available options for disposal of acid gas (including incineration and hot or cold venting) and calculated that venting would produce the least emissions due to the additional fuel required for incineration.

The Proponent committed to develop and implement an air emissions monitoring and management plan (AEMMP) that would require it to:

- conduct gas engine exhaust stack sampling for NO<sub>x</sub>, SO<sub>x</sub> and particulates during onsite commissioning
- monitor and maintain records of dark smoke events from the gas flare
- sample BTEX, mercury and H<sub>2</sub>S in the feed gas stream and (if measured in the feed gas stream) the acid gas removal unit vent stream to validate model predictions
- monitor ground level concentrations of VOCs and H<sub>2</sub>S from the acid gas removal unit vent to validate model predictions and evaluate against assessment criteria
- engage a specialist consultant with air quality monitoring and modelling expertise to assist in the development of the AEMMP
- consult with Environment Division of the Department of Environment and Natural Resources (DENR) during development of the AEMMP.

The NT EPA supports the Proponent's commitments to develop the AEMMP and to implement measures to minimise emissions of air pollutants and greenhouse gases from the Proposal.

The NT EPA considers that the Proposal is unlikely to have a significant impact on air quality or greenhouse gases locally or regionally (in consideration of cumulative emissions), due to the relatively low volume of emissions that would be generated. The NT EPA recognises the potential for cumulative impacts of emissions on the Darwin airshed, however considers that the contribution from the Proposal is not likely to be significant overall.

The NT EPA considers that the Proposal is likely to meet its objective for air quality and greenhouse gases.

## 2. Terrestrial flora and fauna

**Objective:** *Protect the NT's flora and fauna so that biological diversity and ecological integrity are maintained.*

Flora and fauna surveys of the Kittyhawk Estate, including the Proposal site, were conducted in 2018 and 2019<sup>6</sup>. Vegetation mapping indicates that, in addition to areas of previous heavy disturbance and clearing (>60%) there are two main vegetation types; mid woodland of *Eucalyptus miniata*, *Eucalyptus tetradonta* and *Corymbia bleeseri* with a tussock grass understorey; and mid open woodland of *Melaleuca leucadendra*, *Corymbia polysciada* and *Melaleuca viridiflora*. Within the 15 ha Proposal footprint, ~6 ha would require clearing of native vegetation.

Some riparian species are present along ephemeral drainage lines, however these areas are not considered a distinct riparian vegetation community that would be classified as significant vegetation in accordance with the NT Land Clearing Guidelines<sup>7</sup>. Large trees with hollows suitable for fauna are present in small stands within the Eucalypt woodland. The Proposal is adjacent to

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<sup>6</sup> EcOz, 2019, *Threatened Species Survey Report Kittyhawk Estate NT Land Development Corporation*. Darwin NT.

<sup>7</sup> DENR 2019, *Land Clearing Guidelines*. Department of Environment and Natural Resources. NT Government. Darwin NT. Available at: [https://nt.gov.au/\\_data/assets/pdf\\_file/0007/236815/land-clearing-guidelines-2019.pdf](https://nt.gov.au/_data/assets/pdf_file/0007/236815/land-clearing-guidelines-2019.pdf)

significant mangrove vegetation, however no mangroves would be disturbed or impacted by the Proposal.

Targeted threatened species surveys indicated the presence of two threatened flora species; Darwin cycads (*Cycas armstrongii*) and *Typhonium praetermissum*. The risk to the regional population of *Cycas armstrongii* is low as the species is present at low densities in an isolated patch of remnant vegetation. *T. praetermissum* is present in a 1.22 ha patch of 21 plants extending from the eastern boundary of Lot 2 towards the centre of Lot 4. The NOI notes that the translocation of individual *T. praetermissum* plants would be implemented following the subdivision of land for Kittyhawk Estate and prior to the Proponent receiving tenure. The risks from the proposal to *T. praetermissum* are therefore considered to be low.

Fauna surveys indicated the presence of one threatened fauna species in areas of intact woodland across the Kittyhawk Estate, the Black-footed Tree-rat (*Mesembriomys gouldii gouldii*) listed as 'endangered' under the *Environment Protection and Biodiversity Conservation Act 1999* and 'vulnerable' under the *Territory Parks and Wildlife Conservation Act 1976*. The Black-footed Tree-rat has undergone a significant decline in range and abundance, with over 50% of the population estimated to have declined over the last decade.<sup>8</sup>

The Flora and Fauna Division of DENR advised that intact native vegetation to the north of the Proposal may have value as foraging habitat or movement corridors for the Black-footed Tree-rat, and the lot configuration in the Kittyhawk Estate subdivision is designed to retain this vegetation. Habitat within the Proposal area is unlikely to be suitable and is of insufficient extent to support the Black-footed Tree-rat and therefore the risk from the Proposal on this species is low.

Several weed and pest species are likely to occur within the Proposal area. Two declared weeds - Gamba Grass (*Andropogon gayanus*) and Perennial Mission Grass (*Cenchrus polystachios*) - and one pest species - Feral pig (*Sus scrofa*) were recorded during field surveys. There is potential for construction works to result in the introduction and spread of declared weeds through vehicle movements and vegetation clearing that could affect surrounding areas. To mitigate this risk, the Proponent has committed to implementing weed and invasive species management measures, conducting weed management awareness training and undertaking control and eradication programs if required in accordance with the *Weeds Management Act 2001*.

The NT EPA is satisfied that the potential impacts and risks to terrestrial flora and fauna can be mitigated through implementation of the management measures and plans discussed in the NOI. The NT EPA considers that its objective for terrestrial flora and fauna is likely to be met.

### 3. Terrestrial environmental quality

**Objective:** *Maintain the quality of land and soils so that environmental values are protected.*

The Proposal has the potential to result in soil quality impacts due to erosion, disturbance of acid sulfate soils and contamination due to spills or releases of hydrocarbons or other chemicals. The Proposal area is characterised by four distinct land units with slopes ranging from 0.5 to 3% comprising shallow to moderately deep gravelly lithosols and yellow earths.<sup>9</sup>

The Proponent committed to developing and implementing a Project Sediment and Erosion Control Plan that would be reviewed and endorsed by a certified professional in erosion and sediment control. The NOI stated that drainage, sediment and erosion controls would likely include

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<sup>8</sup> Woinarski, J. C. Z., Burbidge, A. A., & Harrison, P. L. 2014. *The action plan for Australian mammals 2012*. Collingwood, Australia: CSIRO Publishing.

<sup>9</sup> EcOz, 2018, *Primary Erosion and Sediment Control Plan Stage 1 Kittyhawk Estate Land Development Corporation*, Darwin NT.

stormwater drainage channels, diversion bunds, rock checks, silt fences and erosion protection such as mulched vegetation, matting, rock aggregate and soil stabilisers.

A preliminary geotechnical study concluded that acid sulfate soils are unlikely to be present within the proposed site boundary but may exist in estuarine areas below 5 m AHD adjacent to the site boundary<sup>10</sup>. The Proponent committed to undertake preliminary testing for acid sulfate soils and prepare and implement acid sulfate soil management procedures if they occur within the area of proposed disturbance.

The Proponent committed to implementing measures to avoid soil contamination during the Proposal, such as secondary containment of hydrocarbons and chemicals in accordance with Australian standards, isolation of drainage systems during bulk chemical transfer, implementing a Spill Prevention and Response Plan and management of any contaminated water.

The Proponent acknowledged that it would be required to hold a Major Hazard Facility Licence for the Proposal under the *Work Health and Safety (National Uniform Legislation) Act 2011* (WHS Act), and committed to comply with all relevant obligations under the WHS Act. This includes identifying major incidents and hazards, conducting a comprehensive and systematic safety assessment, establishing a safety management system, preparing a safety case and implementing an emergency plan with adequate measures to control risks<sup>11</sup>. The NT EPA considers that licensing and regulation under the WHS Act would reduce the risk of significant spills, leaks or explosion to an acceptable level.

The NT EPA supports the Proponent's commitments and considers that the potential risks and impacts to terrestrial environmental quality from the Proposal could be effectively mitigated through implementation of the environmental management plan and associated sub-plans outlined in the NOI. Based on these mitigation measures and procedures, the NT EPA considers that the objective for terrestrial environmental quality is likely to be met.

#### **4. Inland water environmental quality**

**Objective:** *Maintain the quality of groundwater and surface water so that environmental values including ecological health, land uses, and the welfare and amenity of people are protected.*

The Proposal site drains towards the east into Wirraway Creek which joins the Elizabeth River and drains into Darwin Harbour. The Proposal has the potential to influence surface and groundwater quality as a result of sedimentation, spills of hydrocarbons or other chemicals, and disposal of process water to ground via irrigation.

A baseline assessment of surface water and groundwater quality<sup>12</sup> undertaken for the Kittyhawk Estate development indicates water quality in the vicinity of the Proposal is generally good, with recorded exceedances above guideline values likely to be associated with the local geology and natural processes.

Inland water environmental quality has the potential to be significantly impacted by the Proposal if there was a major hydrocarbon or chemical spill resulting in mobilisation of contaminants to surface or groundwater. To avoid this, the Proponent committed to implementing standard measures including; bunding and containment of chemicals and liquid wastes; spill prevention and response procedures, testing and verification of wastewater quality prior to discharge or disposal; a

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<sup>10</sup> Douglas Partners, 2018, *Report of Geotechnical Assessment. Proposed Middle Arm Industrial Precinct Channel Island Road*, Wickham NT.

<sup>11</sup> NT WorkSafe 2019. *Major hazard facilities*. Available at: <https://worksafe.nt.gov.au/safety-and-prevention/major-hazard-facilities>.

<sup>12</sup> EcOz Environmental Consultants 2018, *Water sampling and monitoring report – Kittyhawk Estate*.

stormwater drainage system; implementation of erosion and sediment controls; groundwater monitoring; and regular site inspection and audit.

The Proposal is located within the Darwin Rural water control district, however it is not within a water allocation planning area. The site overlies the Burrell Creek groundwater system, which is not suitable for water supply. No groundwater extraction is associated with the Proposal.

The Proposal includes discharge of non-contaminated process water (demineralised and softened water reject streams) to ground by irrigation and infiltration. The NT EPA considers that provided this activity is undertaken in conjunction with appropriate water quality testing and verification prior to discharge, and a groundwater monitoring program to detect potential impacts, the risk to groundwater quality is low.

The NT EPA supports the Proponent's commitment to develop and implement a Water Emissions Monitoring and Management Plan (WEMMP) with assistance from a specialist environmental consultant with expertise in waste water monitoring and management. The NT EPA is also supportive of the commitment to consult with the DENR Environment Division during development of the WEMMP and to determine whether specific environmental approvals or licences are required.

The NT EPA is satisfied that the potential impacts and risks to inland water environmental quality are not significant with implementation of the proposed mitigation and management measures presented in the NOI and Additional Information. The NT EPA considers that its objective for inland water environmental quality is likely to be met.

## 5. Social, economic and cultural surroundings

**Objective:** *Protect the rich social, economic, cultural and heritage values of the Northern Territory.*

### Cultural considerations

There are no known records of heritage items within the site as confirmed by online database searches and consultation with the Heritage Branch of the NT Department of Tourism, Sport and Culture. There are no nominated, provisional or declared heritage places located within or in the vicinity of the site nor any previously recorded archaeological sites and archaeological surveys were not recommended by the Heritage Branch.

Consultation with the Aboriginal Areas Protection Authority identified that Authority Certificate C2019/029 was issued to the LDC in April 2019 under the *Northern Territory Aboriginal Sacred Sites Act 1989* for activities associated with development of Kittyhawk Estate, including the Proposal area. The Authority Certificate identifies a number of sacred sites on and in the vicinity of the wider Kittyhawk Estate and includes associated restricted works areas and conditions. However, no known Aboriginal sacred sites occur within the Proposal area. The Proponent committed to; adhere to the conditions of the Authority Certificate issued to LDC; undertake workforce training; and implement a chance finds procedure to protect sacred sites if any are subsequently identified in the Proposal area.

### Social and economic considerations

The Proposal is located in the Kittyhawk Industrial Estate within the wider Middle Arm Industrial Precinct which was set aside by the Northern Territory Government to accommodate large strategic industries for downstream gas processing and gas related developments.<sup>13</sup> There are no

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<sup>13</sup> Northern Territory Government 2019, *Middle Arm Industrial Precinct*. Available at: <https://theterritory.com.au/invest/investment-opportunities/middle-arm-industrial-precinct>

residential areas in close proximity to the Proposal, with the nearest being 6.5km away at Bellamack.

Noise generated during construction and operation of the Proposal is not expected to exceed acceptable ambient noise levels at any residential, institutional or educational areas. The NOI stated that plant design specifications for noise are consistent with the NT EPA Northern Territory Noise Management Framework Guidance,<sup>14</sup> and that design levels would not to exceed 70 dBa at the site boundary (under normal operating conditions), 55 dBa during the day and 45 dBa at night, at the nearest noise sensitive receptors.

The generation of artificial light from the Proposal has the potential to result in light spill to the environment. The plant would be lit at night during operations and light from the elevated flare may be visible periodically, although the flare is expected to burn cleanly without generating significant amounts of smoke. The NOI stated that the proposed flare capacity is significantly smaller than that of nearby LNG facilities and the Proponent considered that any visual amenity impacts would not be significant.

The proposed workforce is small, sourced predominantly from local residents and is not expected to have a significant impact on the accommodation, goods or services demand. The Proposal may provide long-term employment opportunities for local residents and opportunities for local businesses.

The Proponent has committed to ongoing consultation with stakeholders for the duration of the Proposal and to implement mitigation measures to safeguard the community and the environment from potential adverse impacts, including a complaints management system.

The NT EPA considers that impacts from the Proposal on social, economic and cultural surroundings are not likely to be significant with implementation of the proposed management measures detailed in the NOI.

### Cumulative impacts

Consultation with NT government agencies raised some concern about the potential cumulative impacts of existing, approved and proposed developments on the wider Middle Arm Peninsula and how the Proposal may contribute to the overall impact on environmental and social values. Due to the relatively small scale of the proposed facility and the limited social impacts, the NT EPA considers that the potential cumulative impacts from the Proposal have been adequately addressed in the NOI.

### **Conclusion**

The NT EPA considers that the potential environmental impacts and risks associated with the Proposal are not significant and that the Proposal does not require assessment under the EA Act.

Comments from NTG advisory bodies have been provided to the Proponent and the NT EPA has provided recommendations to the Proponent to ensure that potential impacts on the environment are minimised and responsibilities under the legislation can be met.

### **DECISION**

The proposed action has been examined by the NT EPA and preliminary investigations and inquiries conducted. The NT EPA has decided that the potential environmental impacts and risks of the proposed action are not so significant as to warrant environmental impact assessment by the NT EPA at the level of a Public Environmental Report or Environmental Impact Statement, under

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<sup>14</sup> NT EPA 2018, *Northern Territory Noise Management Framework Guideline*. Available at: [https://ntepa.nt.gov.au/\\_data/assets/pdf\\_file/0004/566356/noise\\_management\\_framework\\_guideline.pdf](https://ntepa.nt.gov.au/_data/assets/pdf_file/0004/566356/noise_management_framework_guideline.pdf)

provisions of the *Environmental Assessment Act 1982*. However, the proposed action may require assessment and approval under the *Waste Management and Pollution Control Act 1998* and the *Planning Act 1999* to ensure the environmental issues associated with the proposed action are effectively managed.

This decision is made in accordance with clause 8(2) of Environmental Assessment Administrative Procedures, and subject to clause 14A the administrative procedures are at an end with respect to the proposed action.

A handwritten signature in blue ink, appearing to read 'P. Vogel', is written over a horizontal line.

DR PAUL VOGEL AM MAICD

CHAIRPERSON

NORTHERN TERRITORY ENVIRONMENT PROTECTION AUTHORITY

19 DECEMBER 2019

**Attachment B: Northern Territory Government Advisory bodies consulted on the Notice of Intent**

| Department  | Division   |
|---|--|
| Department of Environment and Natural Resources                   | Flora and Fauna<br>Water Resources<br>Weeds<br>Environment<br>Bushfires NT<br>Rangelands |
| Department of Infrastructure, Planning and Logistics              | Planning<br>Transport and Civil Services<br>Infrastructure                               |
| Department of Primary Industry and Resources                      | Mining Compliance<br>Petroleum<br>Primary Industry<br>Fisheries                          |
| Department of Tourism, Sport and Culture                          | Parks and Wildlife<br>Heritage<br>Tourism NT<br>Arts and Museums                         |
| NT Police, Fire and Emergency Services                            | Business Improvement and Planning  |
| Department of Health  | Environmental Health<br>Medical Entomology   |
| Department of Trade, Business and Innovation                      | Economics and Policy<br>Strategic Policy and Research                                    |
| Department of Local Government, Housing and Community Development | Maintenance Planning<br>Housing supply   |
| Power and Water Corporation                                       |  |
| Aboriginal Areas Protection Authority                             | Technical  |
| Department of the Attorney-General and Justice                    | Commercial Division<br>NT Worksafe   |
| Land Development Corporation                                      |  |
| Department of the Chief Minister                                  | Economic and Environmental Policy<br>Social Policy                                       |