# Amendment Report

## Application for Licence Amendment

### Division 3, Part V *Environmental Protection Act 1986*

| | |
|---|---|
| **Licence Number** | L8159/2004/2 |
| **Licence Holder** | EDL LNG (WA) Pty Ltd |
| **ACN** | 064 437 789 |
| **File Number:** | DER2014/001067-3 |
| **Premises** | Maitland LNG Facility<br>Maitland Strategic Industrial Area, North West Coastal Highway<br>Legal description –<br>Part of Lot 3002 on Deposited Plan 42721<br>Certificate of Title Volume 2607 Folio 417<br>As defined by the coordinates in Schedule 1 of the amended licence |
| **Date of Report** | 14/05/2020 |
| **Status of Report** | FINAL |

# 1. Definitions and interpretation

## Definitions

In this amendment report, the terms in Table 1 have the meanings defined.

**Table 1: Definitions**

| Term | Definition |
|---|---|
| AACR | Annual Audit Compliance Report |
| ACN | Australian Company Number |
| AER | Annual Environment Report |
| Amended Licence | the amended licence issued under Part V, Division 3 of the EP Act, with changes that correspond to the assessment outlined in this amendment report. |
| Amendment Report | refers to this document |
| Category/ Categories/ Cat. | categories of prescribed premises as set out in Schedule 1 of the EP Regulations |
| CEO | means Chief Executive Officer. |
| CO | carbon monoxide |
| Delegated Officer | an officer under section 20 of the EP Act |
| Department | means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act. |
| DBNGP | Dampier to Bunbury Natural Gas Pipeline |
| DWER | Department of Water and Environmental Regulation |
| EP Act | *Environmental Protection Act 1986* (WA) |
| Existing Licence | The licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of and during this amendment |
| Licence Holder | EDL LNG (WA) Pty Ltd |
| LNG | Liquid Natural Gas |
| $m^3$ | cubic metres |
| mtpa | million tonnes per annum |
| NATA | National Association of Testing Authorities, Australia |
| NEPM | National Environmental Protection Measure |
| Noise Regulations | *Environmental Protection (Noise) Regulations 1997* (WA) |

| Term | Definition |
|---|---|
| NOx | Oxides of nitrogen |
| PM | particulate matter |
| prescribed premises | has the same meaning given to that term under the EP Act. |
| premises | refers to the premises to which this amendment report applies, as specified at the front of this amendment report. |
| Risk Event | as described in *Guidance Statement: Risk Assessment* |
| $SO_x$ | oxides of sulfur |
| TEG | Tri Ethylene Glycol |
| UDR | *Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA) |

# 2. Amendment description

This amendment is made pursuant to section 59 of the *Environmental Protection Act 1986* to amend licence L8159/2004/2 granted to EDL LNG (WA) Pty Ltd for its Maitland LNG facility.

The guidance statements that have informed the assessment and decision outlined in this amendment report are listed in Appendix 1.

## 2.1. Purpose and scope of assessment

An application was received from the licence holder EDL LNG (WA) Pty Ltd (EDL) on 7 June 2019 to amend existing licence L8159/2004/2 for the Maitland LNG facility. The application sought for the licence to allow for operation of a gas fuelled reciprocating engine (EGM04, gas engine) on the premises. The gas engine EGM04 was rented and installed at the premises in 2011 to temporarily provide electricity to an external party. The gas engine was subsequently purchased and is required on a permanent basis to continue production of electricity for provision to the external party. The licence holder is therefore seeking assessment and inclusion of the infrastructure to the licence. The gas engine is located within the premises boundary and will not increase the design capacity of the premises of 73,000 tonnes of LNG per annual period.

Table 2 lists the documents submitted during the assessment process.

**Table 2: Documents and information submitted during the assessment process**

| Document/information description | Date received | DWER Reference |
|---|---|---|
| EDL LNG (WA) Pty Ltd - Maitland licence amendment application | 7 June 2019 | DWERDT165970 |
| Response to request for information – Maitland licence amendment (L8159/2004/2) | 12 July 2019 | DWERDT17905 |
| Response 2 to request for information – Maitland licence amendment (L8159/2004/2) | 5 August 2019 | A1811909 |

The requested inclusion of operation of a gas engine at the premises is considered by the Delegated Officer to present a potential change to the risk profile of emissions and discharges from the premises and, as such, has been considered in a risk assessment (Table 11) in accordance with DWER's published Regulatory Framework.

This amendment report only considers emissions associated with the proposed changes outlined above. Emissions associated with operation of the existing infrastructure have been previously subject to risk assessment through the premises licence assessment and therefore are not considered in this assessment.

## 2.2. CEO amendments

In conjunction with the licence holder's amendment application, the CEO has initiated an amendment to the type and style of licence, and consolidation of separately issued instruments relating to L8159/2004/2. Conditions of the existing licence have been transferred, but not reassessed, to the amended licence. Where appropriate some conditions have been removed or have been modified where condition requirements were unclear. The obligations of the licence holder have not changed in making these changes. Some additional conditions have also been included in the amended licence. Section 10.1 (Table 12) provides a detailed description of the amendments to the licence. A summary of the CEO initiated amendments is provided below.

1. Update to the format and appearance of the licence to reflect the new Department details

and licence format.

2. Update and addition of definitions where required.
3. Extension to the licence duration in accordance with the CEO initiated amendment notice issued on 29 April 2016 to extend licence expiry dates for almost all licensed prescribed premises.
4. Incorporation of operational requirements specified in conditions 1, 2, 8 and 9 of the existing licence into a single condition and specifying the infrastructure or equipment requirements are applicable to.
5. Inclusion of authorised discharge points for discharges to air (combustion emissions) and land (stormwater emissions) previously assessed for the premises but not specified in the existing licence.
6. Inclusion of monitoring requirements for stormwater discharges to land in order to verify compliance with the emission limit specified in the existing licence.
7. Incorporation of monitoring requirements for discharges to air (including stack sampling and monitoring of dark smoke emissions) which were specified in conditions 4-7 of the existing licence into a single condition, inclusion of appropriate sampling and analysis methods, and clarification of the monitoring regime.
8. Removal of the AACR form set out in Attachment 2 as the current version of the form is available from the Department's website.
9. Inclusion of additional conditions relating to record keeping and non-compliance notification requirements.
10. Inclusion of the details required to be provided to the Department in the event of a reportable dark smoke emission event as the required details were not specified in the reporting requirement in condition 5 of the existing licence.
11. Inclusion of notification requirements as well as updating of AACR and AER conditions to align with the Department's current condition format.

# 3. Premises information

## 3.1. Premises background

The licence holder has been operating a small-scale LNG facility within the Maitland Strategic Industrial Area since the first licence to operate the premises was issued under the EP Act in 2007. A history of approvals relating to the premises which have been granted under Part V, Division 3 of the EP Act is included in Table 3. The relevant prescribed premises category and throughput authorised under the existing licence is described in Table 4.

**Table 3: Works approval and licence history for the Maitland LNG facility**

| Instrument | Issued | Amendment |
|---|---|---|
| W4063/2004/1 | 7 March 2005 | Works approval issued for construction of the Maitland LNG facility. |
| L8159/2004/1 | 12 July 2007 | Licence for operation of the Maitland LNG facility first issued. The licence was a nil condition licence. |
| L8159/2004/2 | 5 July 2012 | Licence reviewed and re-issued with relevant conditions added. |
| L8159/2004/2 | 14 May 2020 | Amendment to licence to include operation of a gas engine on the premises to provide power to an external party. |

**Table 4: Prescribed premises category**

| Category | Description | Approved premises production or design capacity |
|---|---|---|
| Category 34 | Oil or gas refining: premises on which crude oil, condensate or gas is refined or processed. | < 73,000 tonnes per year |

## 3.2. Operational aspects

The licence holder operates a small-scale LNG production facility at the premises. Produced LNG is transported via road trains to a number of gas fired power stations within the West Kimberley region. A brief overview of the activities undertaken at the premises related to the production of LNG is included below.

### Gas feed and pre-treatment

The LNG production facility receives natural gas from the DBNGP. The natural gas is directed to a pre-treatment system to remove carbon dioxide ($CO_2$), water and other impurities. An amine scrubbing column absorbs the removed $CO_2$ and trace amounts of sulphur from the feed gas. Molecular sieve absorber beds are used to remove water from the gas, most of which will come from the amine system.

When the molecular sieves become saturated with water, they are heated and regenerated by a side stream of feed gas (regeneration gas), which collects the moisture and is later used to fuel the power generation system's gas turbines.

### Liquefaction process

Treated gas is then cooled in two stages in the liquefaction process. First the gas is cooled to minus 60 degree celsius (°C) to remove the heavier hydrocarbon fraction (this is similar to liquefied petroleum gas and includes propane, butane and ethane). Traces of methane in the heavy hydrocarbon fraction are recovered and further cooled with the remaining gas to minus 150°C. The cooled gas is piped in liquid form to LNG storage tanks. There are six double-skinned, vacuum insulated 325 kilolitre (kL) capacity LNG storage bullets at the premises.

### Flaring

The premises includes a flare to enable the safe disposal of process gas during start-up, shut-down and during upset conditions. Fuel gas collected in the fuel gas headers and excess to the LNG facility's process heating and power generation requirements is also disposed via the flare. The flare has been designed for smokeless operation.

### Power generation

There is no power supply within the Maitland Strategic Industrial Area therefore power generating infrastructure has been established at the premises to provide power for LNG production. Three 2.8 MW solar centaur gas turbines are installed. Typically only one gas turbine is operated at partial load however, occasionally one turbine is operated at full load and a second turbine at part load during peak plant requirements. The third gas turbine is a back-up for use during emergency or maintenance periods as required. Regeneration gas from the pre-treatment stage, and the recovered heavy hydrocarbon fraction from the liquefaction process are used as fuel for the gas turbines, supplemented with natural gas from the DBNGP as required.

The premises also includes a diesel powered black start generator operated for 30 minutes once per week and a period of approximately four days once per year during shut-down of the LNG plant.

## Emissions

The key emission sources on the premises are the gas turbines which generate power for the facility, the flare and a TEG burner. These emission sources discharge combustion gases including NOx, CO, SOx, VOCs and PM to the air as a result of the combustion of natural gas, regeneration gas and recovered hydrocarbons from the LNG production process.

The gas turbines were not new at their time of installation and therefore did not include NOx reduction technology which is typically applied in newer gas turbines. Retrofitting of NOx reduction technology was considered by the licence holder to have limited benefit due to the turbines being operated predominantly at partial load where the technology has limited effect. Due to the lack of NOx emission control it was originally predicted that NOx emissions of around 520 mg/$m^3$ would occur however stack emission monitoring undertaken in 2012 demonstrated emission rates were significantly less at approximately 260 mg/$m^3$.

Air quality modelling for discharges to air was originally undertaken in 2005 prior to construction of the premises to determine predicted ground level concentrations (GLCs) of pollutants at the premises boundary based on the predicted emission rates for the key emission sources. The modelling was subsequently updated in 2012 based on measured emissions and operating data to confirm predicted GLCs were able to meet the NEPM standards at the premises boundary. The NEPM sets ambient air quality standards for CO, $NO_2$, $SO_2$ and PM for the protection of human health and well-being.

The outcomes of the 2012 modelling are summarised in Table 5. The results are based on measured emissions from all three gas turbines (although no more than two are in operation at once) as well as estimated emissions from the flare and TEG burner (monitoring if these emission sources is not undertaken but has been estimated to be equivalent to three times the average of the gas turbine emissions). Assessment of the modelling predictions which was undertaken for the existing licence concluded that NEPM criteria will be met at the premises boundary and the most significant emission is NOx. Actions implemented by the licence holder to reduce NOx emissions include having stack heights of 10 m for the gas turbines to aid in NOx dispersion, overhaul of one of the gas turbines in 2012 and regular maintenance of the gas turbines.

A summary of recent stack emission monitoring results is included in Table 6. The summary illustrates that NOx emissions are below the 2012 measured emission rate of approximately 260 mg/$m^3$.

**Table 5: 2012 modelled GLCs at the premises boundary based on operating data and measured emissions**

| | NOx | | $SO_2$ | | | CO |
|---|---|---|---|---|---|---|
| | **1 hr average** | **Annual average** | **1 hour average** | **24 hour average** | **Annual average** | **8 hour average** |
| Model Predicted GLC | 210 µg/$m^3$ | 42 µg/$m^3$ | 399 µg/$m^3$ | 26 µg/$m^3$ | 0.003 µg/$m^3$ | 320 µg/$m^3$ |
| NEPM | 246 µg/$m^3$ | 62 µg/$m^3$ | 571 µg/$m^3$ | 229 µg/$m^3$ | 57 µg/$m^3$ | 11,240 µg/$m^3$ |
| % NEPM | 85% | 68% | 70% | 11% | <1% | 2.8% |

**Table 6: Measured emissions from the Maitland LNG facility gas turbines**

| Gas Turbine | Units | NOx | | | $SO_2$ | | | CO | | | VOCs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **2016** | **2017** | **2018** | **2016** | **2017** | **2018** | **2016** | **2017** | **2018** | **2016** | **2017** | **2018** |
| GT1 | g/s | NA | 2.981 | NA | NA | <0.0761 | NA | NA | 0.929 | NA | NA | <0.042 | |
| | mg/$Nm^3$ | NA | 100.012 | NA | NA | <2.86 | NA | NA | 31.152 | NA | NA | <1.401 | |
| GT2 | g/s | 7.27 | 2.639 | 1.57 | <0.088 | <0.0761 | <0.0415 | 0.22 | 0.783 | 0.0763 | NA | NA | <0.00234 |
| | mg/$Nm^3$ | 235 | 99.131 | 177 | <2.86 | <2.86 | <4.66 | 7.1 | 29.427 | 8.56 | NA | NA | <0.248 |
| GT3 | g/s | 7.84 | NA | 1.55 | <0.088 | NA | <0.0418 | 0.199 | NA | 0.0569 | <0.05 | NA | NA |
| | mg/$Nm^3$ | 255 | NA | 172 | <2.86 | NA | <4.66 | 6.49 | NA | 6.33 | <1.51 | NA | NA |

# 4. Amendment application

The licence holder has requested a gas engine is included as authorised infrastructure at the premises. The gas engine is used to generate power for provision to an external party.

The gas engine is a 1 MW Jenbacher J320 and is located next to the three 2.8 MW gas turbines which were originally established at the premises (Figure 1). The licence holder estimates the gas engine will be operated for approximately 2,000 hours per year predominantly during the summer period. The gas engine is a lean burn engine which is designed to reduce the formation of NOx emissions. Emissions from the gas engine are released to atmosphere via a 5 m high stack.

The expected emissions for the gas engine, based on the manufacturer's specifications (NOx and CO) and NPI calculations ($SO_2$ and VOCs) are detailed in Table 7. Comparing with measured emission rates from the existing gas turbines on the premises (Table 6) the predicted emission rates are similar to the existing infrastructure and therefore are not expected cause a significant increase in the GLC of pollutants.

**Table 7: Predicted emission rates for the 1 MW Jenbacher J320 gas engine at the Maitland LNG facility**

| Units | NOx | $SO_2$ | CO | VOCs |
|---|---|---|---|---|
| mg/Nm$^3$ | <500 | 3.7 | <1,500 | 563 |
| g/s | 0.027 | 0.0002 | 0.08 | 0.03 |

Note 1: Values corrected to 5% $O_2$

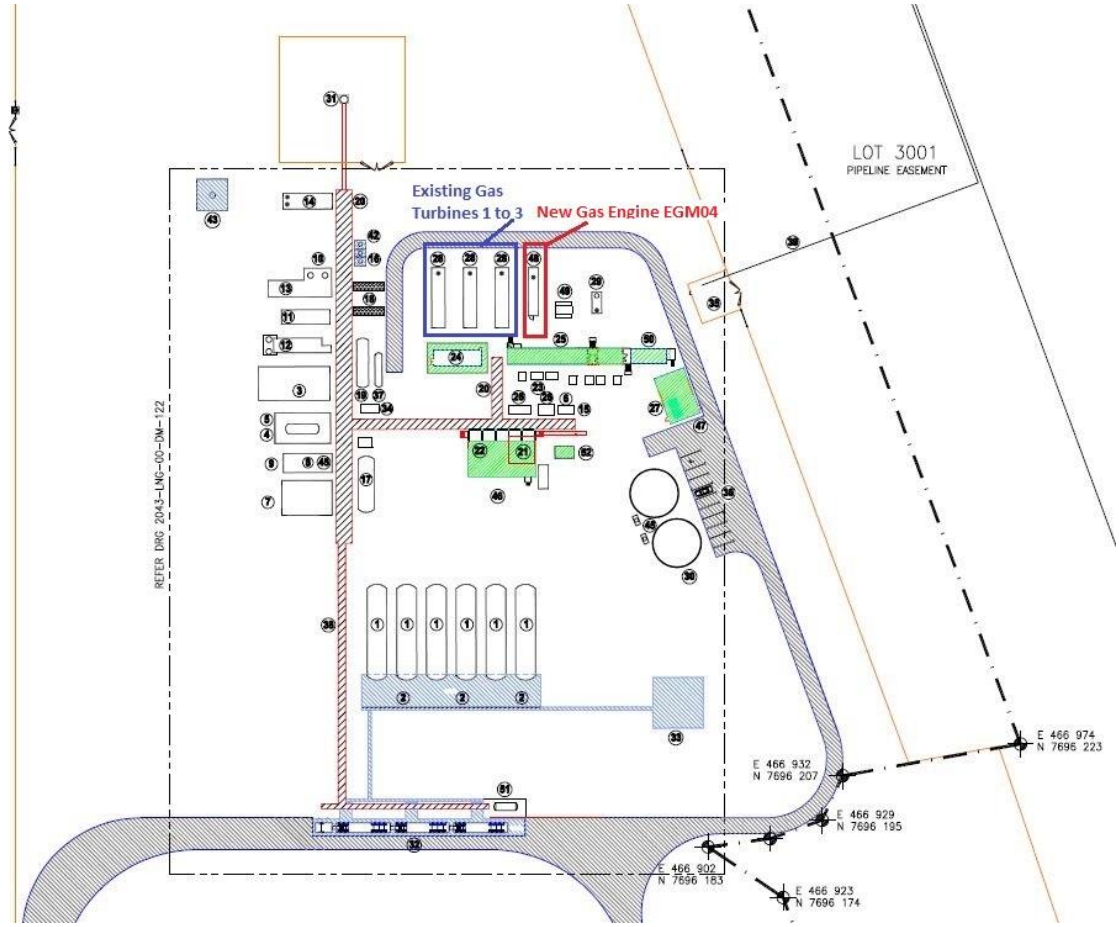


**Figure 1 Location of new gas engine in relation to existing gas turbines**

# 5. Infrastructure

The infrastructure established at the premises, as it relates to Category 34 activities, is detailed in Table 8 and with reference to the site layout and discharge points map (attached in the amended licence). The only additional infrastructure which has been added to the premises which was not considered in the previous licence assessment for the Maitland LNG facility is the 1 MW Jenbacher J320 gas engine.

**Table 8: Maitland LNG facility prescribed premises infrastructure**

| | **Infrastructure** | **Site Plan Reference**<br>**Schedule 1, Maps – Site layout and discharge points map in the amended licence** |
|---|---|---|
| **Prescribed Activity Category 34** | | |
| Natural gas is transported to the Maitland LNG facility via the DBNGP. The gas is refined to produce LNG for transport to power generators in the West Kimberly. Power supply for the gas treatment is generated on site as there is no connection to power services in proximity to the premises. A gas engine has been established on the premises for generation of power for provision to an external party. | | |
| 1. | 3 x 2.8 MW solar centaur gas turbines | 28 |
| 2. | 1x 1MW Jenbacher J320 gas engine | 48 |
| 3. | 1 x Black start generator | 29 |
| 4. | 6x 325 kL LNG storage vessels | 1 |
| 5. | 1x Flare | 31 |
| 6. | 1 x TEG heater | 14 |
| 7. | 1 x TEG tank | 42 |
| 8. | 1 x Drains tank | 43 |
| 9. | 1x LNG production train (73,000 tonnes per annum) | NA |
| 10. | 1 x Amine storage tank | 16 |
| 11. | 1x Ethane storage tank | 37 |
| 12. | 1x Nitrogen storage | 51 |
| 13. | 1 x LNG truck loading facility | 32 |
| 14. | 1 x 325 $m^3$ LNG impoundment basin/stormwater collection sump | 33 |

# 6. Other approvals

The licence holder has provided the information in Table 9 relating to other approvals applicable to the amendment application.

**Table 9: Relevant approvals**

| **Legislation** | **Number** | **Approval** |
|---|---|---|
| *Planning and Development Act 2005* | P2269 | Local Government Authority – City of Karratha – Development Approval granted on 7 July 2010 for the gas processing plant |
| | 1434D AMD | Local Government Authority – City of Karratha – Development Approval granted on 7 May 2020 for the gas engine |

| | | |
|---|---|---|
| *Dangerous Goods Safety (Storage and Handling of Non-explosives) Regulations 2007* | Dangerous Goods Storage licence DGS020640 | The Dangerous Goods Storage licence was issued by the then Department of Mines and Petroleum (now DMIRS) on 21 October 2011 |

# 7. Consultation

The Application was sent to the local Government authority (City of Karratha) for comment on 24 October 2019. No comments or objections to the Application were received from the City.

The draft Amendment Report and Amended Licence were provided to the Licence Holder for review and comment on 5 November 2019. A response was received from EDL on 28 November 2019. An additional response to the draft documents was received from the Licence Holder on 12 May 2020 together with evidence of Development Approval for the gas engine. Comments received from EDL are detailed in Appendix 2 and have been considered in the final Amendment Report and Licence.

# 8. Location and receptors

The premises is located within the Maitland Strategic Industrial Area approximately 15 km south west of the City of Karratha, within the Pilbara region of Western Australia. The Maitland Strategic Industrial Area was previously part of the Karratha Pastoral Station and is currently largely undeveloped with the Maitland LNG facility being the only development established within the estate.

The Maitland Strategic Industrial Area is located on a coastal plain typified by low relief. The area is dissected by a series of alluvial channels predominantly flowing in a north-west direction into a series of tidal creek systems. The premises has been established within an area which is above the 100 year Annual Recurrence Interval flood level approximately 7.5 km east of the Maitland River.

Vegetation within the Maitland Strategic Industrial Area and surrounds has been significantly disturbed by fire and grazing. There are no known threatened or priority flora or ecosystems within 2 km of the premises. There are several locations recorded as “Other Heritage Places” under the *Aboriginal Heritage Act 1972* within or in close proximity (< 100 m) to the premises.

Table 10 below lists the relevant sensitive land uses in the vicinity of the prescribed premises which may be receptors relevant to the proposed amendment.

**Table 10: Receptors and distance from premises boundary**

| Residential and sensitive premises | Distance from prescribed premises |
|---|---|
| Karratha Station | ~5.5 km south |
| Miaree Pool Rest Area | ~7.3 km south-west |
| Karratha City | ~14.6 km north-east |

# 9. Risk assessment

In undertaking its risk assessment, DWER will identify all potential emission pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment associated with the amendment.

To establish a Risk Event there must be an emission, a receptor which may be exposed to

that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Table 11.

Table 11 below describes the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. The table identifies whether the emissions present a material risk to public health or the environment, requiring regulatory controls.

**Table 11: Risk assessment for proposed amendments during operation**

| Risk Event | | | | Consequence rating[1] | Likelihood rating[1] | Risk[1] | Reasoning | Regulatory controls (refer to conditions of the granted instrument) |
|---|---|---|---|---|---|---|---|---|
| **Source/ Activities** | **Potential emissions** | **Potential receptors, pathway and impact** | **Applicant controls** | | | | | |
| Operation of one additional 1 MW gas engine for approximately 2,000 hours per year | Combustion products NOx, SOx, CO, VOCs and trace amounts of particulates | Air/windborne pathway causing impacts to health of closest human receptors approximately 5.5 km south of the premises (Karratha Station) | The gas engine has lean burn technology to achieve emission rates of <500 mg/N $m^3$.<br>The gas engine has a 5 m high stack from which combustion products are emitted to aid in dispersion of emissions. | Minor | Rare | Low | The predicted emission rates for the additional gas engine are similar to measured emission rates from the existing gas turbines. Operation of the additional gas engine is therefore not expected to significantly increase pollutant GLCs.<br>As modelling has previously predicted that the NEPM criteria will be met at the premises boundary (with 3 gas turbines in operation), and there is a 5.5 km separation distance to the nearest public sensitive receptor, the Delegated Officer considers that there is a low risk of combustion products impacting on human health.<br>Existing monitoring requirements for the gas turbines are considered sufficient to confirm that emissions remain in accordance with assessed levels, and monitoring of emissions from the additional gas engine has been included in the amended licence. A condition authorising the emissions which have been assessed for the premises infrastructure has been included in the amended licence together with clarification of monitoring methods and frequency to ensure monitoring data is reliable and accurate. | Condition 2 has been included in the amended licence to specify the emission points and types of pollutants which have been assessed (either previously or through this amendment report) and are authorised to be discharged from point sources within the premises. The condition includes the height of the emission points as this aids in dispersion of pollutants to minimise contribution to ambient GLCs.<br>Condition 4 has been included in the amended licence which specifies annual monitoring of NOx emissions from the gas turbines and additional gas engine. This condition replaces conditions 6 and 7 of the existing licence and clarifies the required sampling and analysis methods and frequency of sampling which was not explicit in the existing licence conditions. An additional parameter of volumetric flow rate has also been included in the monitoring program to facilitate reporting of results in the required units.<br>Reporting requirements for the monitoring results in an AER are specified in condition 12, which replaces condition 10 of the existing licence. |

| Risk Event | | | | Consequence rating[1] | Likelihood rating[1] | Risk[1] | Reasoning | Regulatory controls (refer to conditions of the granted instrument) |
|---|---|---|---|---|---|---|---|---|
| **Source/ Activities** | **Potential emissions** | **Potential receptors, pathway and impact** | **Applicant controls** | | | | | |
| | Noise and light emissions | Air/windborne pathway causing amenity impacts to the closest human receptors approximately 5.5 km south of the premises (Karratha Station) | The gas engine and existing turbines are within enclosures to minimise noise emissions. There are no additional light sources associated with the gas engine. | Minor | Rare | Low | The Maitland Strategic Industrial Area includes a 2 km 'Special Control Area' around the core development area to act as a buffer to ensure separation of industry and sensitive land uses. The Delegated Officer considers that there is sufficient separation distance to the closest public sensitive receptors at the Karratha Station for there to be a very low risk of amenity impact from noise or light emissions from operation of an additional gas engine on the premises. The Delegated Officer considers that the provisions of the Noise Regulations are sufficient to regulate noise. | None required. |

*Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the Department's Guidance Statement: Risk Assessments (February 2017)*

# 10. Decision

The Delegated Officer has reviewed the risk events associated with the ongoing operation of an additional gas engine on the premises and has determined that emissions from the gas engine are not likely to significantly increase pollutant GLCs above previously predicted levels, and these are not expected to impact on the health of the closest sensitive public receptors. The risk profile of the Premises has therefore not been altered as a result of the requested amendment. The existing gas turbine monitoring regime, with the inclusion of the additional gas engine, is appropriate to provide confirmation that NOx emission rates remain within the predicted levels described in this report.

## 10.1. Summary of amendments

For this licence amendment, in addition to the licence holder's requested change, the CEO has also initiated an amendment to the type and style of licence, consolidation of separately issued instruments relating to L8159/2004/2, and removal, modification or inclusion of new conditions to align with the Department's current standard licence and condition format, or clarify requirements.

Table 12 provides a detailed description of the amendments made to the licence through the transfer of existing conditions, modification of existing conditions and addition of new conditions. The Table will act as record of implemented changes. All proposed changes have been incorporated into the amended licence as part of the amendment process.

**Table 12: Summary of conversion and amendment for licence L8159/2004/2**

| Existing licence condition | Amended licence condition | Description |
|---|---|---|
| Expiry date: 12 July 2017 | 12 July 2022 | On 29 April 2016, a Notice of Amendment to extend the expiry date of licences was issued. The licence expiry for L8159/2004/2, was changed from 17 July 2017 to 17 July 2022. The new expiry is specified on the licence cover. |
| Definitions | | Definitions have been moved from the beginning of the licence to Table 6.<br>The definition and contact details for the Director were changed to the CEO and updated to reflect current contact details. Additional definitions relevant the conditions of the amended licence were added. |
| 1, 2, 8, 9 | 1 | Infrastructure and equipment<br>In keeping with the current licence format in use by the Department, operational requirement for infrastructure and equipment have been incorporated into condition 1 (Table 1) of the amended licence. Liquid chemical storage requirements have been replicated in the condition and the tanks to which the storage requirements apply have also been specified. The requirement for chemicals which react dangerously to be kept in separate bunds has been removed as this is covered under the requirements of Dangerous Goods Storage legislation and the premises is subject to a Dangerous Goods Storage licence.<br>Stormwater management requirements have been replicated in the condition with the exception of the requirement to divert stormwater from areas where it has the potential to be contaminated which has been removed as the amended licence only authorises discharge of clean stormwater from a specified discharge location. |
| | 2 | Authorised discharge points<br>The amended licence includes condition 2 which authorises discharges to air and land from the premises. This is a new condition which has been applied in order to specify the discharges which have either been previously assessed, or assessed in this report, and are |

| Existing licence condition | Amended licence condition | Description |
|---|---|---|
| | | authorised to occur. This condition has been applied in accordance with the Department's current regulatory framework. |
| 8 (ii) | 3 | Discharge limits<br>The discharge limit for stormwater discharged to land has been replicated in condition 3 of the amended licence with changes to the style and format of the condition to align with current requirements. The parameter the discharge limit applies to has been clarified by modifying the specified parameter from hydrocarbon to total recoverable hydrocarbons. The discharge points the limit applies to are also specified in the condition. |
| 3 | 4 | Specified actions<br>The requirement to immediately remove leaks/spills has been replicated as a specified action in condition 4 of the amended licence. |
| 4, 5, 6, 7 | 5, 6 | Monitoring<br>The gas turbine emission monitoring requirements have been replicated in condition 5 of the amended licence. The monitoring requirements have been expanded to include flow monitoring to facilitate reporting in the specified units. The gas turbines and gas engine have been specified as monitoring locations. Due to the premises typically only operating 1 or 2 gas turbines at any one time, the frequency of monitoring has been clarified by specifying annual monitoring must be undertaken for units that are operating at the time of monitoring, but that a minimum of two must be monitored in each annual period. Condition 6 is also included in the amended licence to specify a timeframe between annual monitoring events to ensure they are adequately spaced.<br><br>The dark smoke emission monitoring requirements, and reportable dark smoke event trigger for the flare have been replicated in condition 5 of the amended licence.<br><br>The existing licence specifies a limit for hydrocarbon concentration in stormwater discharge however does not include monitoring requirements to provide evidence the limit has not been exceeded. Stormwater discharge monitoring requirements for total recoverable hydrocarbons have therefore been specified in condition 5 of the amended licence. The monitoring is only required prior to discharge from the stormwater collection sump or the drains tank bund. The monitoring frequency has therefore been specified as only prior to discharge and must be undertaken no more than 6 hours before the discharge to ensure it is a representative sample of the water being discharged. The condition specifies sampling is to be undertaken in accordance with relevant Australian Standards and that analysis is to be undertaken by a NATA accredited laboratory in order to ensure the accuracy and validity of monitoring results as these are used to demonstrate limits have not been exceeded. |
| | 7, 8 | Records<br>New conditions have been included in the amended licence specifying record keeping requirements for the premises. Record keeping has been included as a requirement in line with the Department's standard requirements on operational licence which are intended to ensure adequate records are maintained relating to premises operation. |
| 5 | 9 | Notification<br>Notification requirements for reportable dark smoke events have been replicated in condition 9 of the amended licence which specifies reporting requirements when reportable event criteria are exceeded. |

| Existing licence condition | Amended licence condition | Description |
|---|---|---|
| | | The condition has been modified to specify the information to be reported to the CEO as this was not specified in the existing licence conditions. |
| 10, 11 | 10, 11 | AACR and AER<br>The annual reporting conditions have been updated to the Department's current requirements and remove reference to Attachment 2 which has been removed from the licence. A current version of the AACR form is available from the Department's website. |
| Attachment 1 | Schedule 1 | The premises map has been updated with new aerial imagery.<br>An additional map showing the site layout and discharge points has also been included in Schedule 1.<br>The premises boundary coordinates have been moved from the premises map to Table 7 of the Schedule. |
| Attachment 2 | - | The attachment has been removed as the AACR form in the licence is not the current approved form. The form is now available on the Department's website (www.dwer.wa.gov.au). |

# 11. Conclusion

Based on the assessment in this amendment report, the Delegated Officer has determined that a licence amendment will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

For this licence amendment, DWER has considered the application details and past environmental assessment reports as detailed in this report. The amendment also includes changes to the numbering, wording and format of existing licence conditions, however the intent of the conditions remains the same.

The amended licence issued as a result of this assessment consolidates and supersedes all previously authorised licences and amendment notices previously issued in relation to the premises.

**Carmen Standring**
**A/Manager, Process Industries**
REGULATORY SERVICES

*An officer delegated by the CEO under section 20 of the EP Act*

# Appendix 1 Key documents

| | Document title | In text ref | Availability |
|---|---|---|---|
| 1. | Licence L8159/2004/2 – Maitland LNG Facility | L8159/2004/2 | accessed at www.dwer.wa.gov.au |
| 2. | Environmental Assessment Report Licence L8159/2004/2 – Maitland LNG Facility | Maitland EAR | |
| 3. | EDL LNG (WA) Pty Ltd - Maitland licence amendment application | EDL 2019a | DWERDT165970 |
| 4. | Email correspondence: Response to request for information – Maitland licence amendment (L8159/2004/2) | EDL 2019b | DWERDT17905 |
| 5. | Email correspondence: Response 2 to request for information – Maitland licence amendment (L8159/2004/2) | EDL 2019c | A1811909 |
| 6. | Email correspondence: EDL LNG (WA) Pty Ltd - Review of Draft Licence - Licence Amendment L8159/2004/2 | EDL 2019d | A1846166 |
| 7. | Email correspondence: EDL LNG (WA) Pty Ltd - Maitland Licence | EDL 2020 | A1846166 DWERDT282153 and DWERDT282346 |
| 8. | DER, July 2015. *Guidance Statement: Regulatory principles.* Department of Environment Regulation, Perth. | DER 2015a | accessed at www.dwer.wa.gov.au |
| 9. | DER, October 2015. *Guidance Statement: Setting conditions.* Department of Environment Regulation, Perth. | DER 2015b | |
| 10. | DER, November 2016. *Guidance Statement: Environmental Siting.* Department of Environment Regulation, Perth. | DER 2016 | |
| 11. | DER, February 2017. *Guidance Statement: Risk Assessments*. Department of Environment Regulation, Perth. | DER 2017 | |
| 12. | DWER, June 2019. *Guideline: Decision Making*. Department of Water and Environmental Regulation, Perth. | DWER 2019 | |

## Appendix 2 Summary of Licence Holder's comments on risk assessment and draft conditions

| Condition | Summary of Licence Holder's comment | DWER response |
|---|---|---|
| 1 (Table 1) | Requested the wording of the operational requirements for the sumps and stormwater drains be amended to allow for contaminated stormwater to be removed from the premises as there is no infrastructure on the premises for the treatment of stormwater. | As per section 2.1, the licence amendment and report only considers emissions associated with the proposed changes. The Application did not include emissions associated with operation of the existing stormwater infrastructure. As per section 2.2, the CEO initiated an amendment to the type and style of licence to the Department's current version. Conditions of the existing licence were transferred, but not reassessed, to the amended licence and where appropriate some conditions have been removed or have been modified where condition requirements were unclear.<br><br>The existing licence included a condition requiring stormwater that had come into contact with waste to be diverted to a sump or retained on the Premises for treatment to achieve a hydrocarbon concentration < 15 mg/L prior to discharge or reuse. These existing requirements have been retained in the amended licence although in a different format. The operational requirements for stormwater infrastructure in Table 1 were adjusted to ensure they do not preclude the Licence Holder from removing potentially contaminated wastewater from the Premises for offsite treatment/disposal. |
| 2 (Table 2) | Requested the wording of the emission type in Table 2 be amended from uncontaminated stormwater which meets the *discharge limit* specified in Table 3 to uncontaminated stormwater that meets the *criteria* specified in condition 3. Reasoning was provided that there is no specific discharge point for stormwater and that clean water is discharged to ground from bunds. | No change has been made to the wording discharge limit as it aligns with the Department's regulatory framework. The emission description was altered slightly to make it clear that it refers to emissions of stormwater which meet the discharge limit specified. The applicable discharge point location is the stormwater collection sump and drains tank bund. While the Licence Holder has advised they do not currently have infrastructure for treatment of stormwater, no reassessment of stormwater management or emissions has been undertaken as part of the licence amendment. The existing licence allows for discharge or reuse of treated stormwater that meets the discharge limit, |

| Condition | Summary of Licence Holder's comment | DWER response |
|---|---|---|
| | | therefore the amended licence includes conditions which authorise this. |
| 3 (Table 3) | Requested the discharge limit is removed and conditions are included which authorise stormwater accumulated in bunds to be released to the ground when the stormwater is considered uncontaminated or transported office for treatment if contaminated. | No risk assessment of stormwater management or conditions has been undertaken as part of the amendment as this was not part of the Application. Therefore the discharge limit for stormwater discharged to the environment has been retained. The limit does not preclude the Licence Holder from removing contaminated stormwater from the Premises for treatment/disposal. |
| 5 (Table 4) | Requested requirement for sampling of stormwater discharged to the environment to comply with AS/NZS 5667.1, AS/NZS 5667.10, and analysis to be NATA accredited are removed as they are new requirements. NATA accredited laboratory testing is impractical as the samples would need to be transported to Perth which will significantly restrict the capacity to release water from bunds in a timely manner when it is required.<br>The Licence Holder instead proposes to undertake field testing using calibrated instruments which can produce instant results. | Monitoring of stormwater discharged to the environment from the stormwater collection sump and drains tank bund is a new requirement included in the amended licence. As per section 10.1, the requirement was included in the amended licence because the existing licence included a limit for hydrocarbons in stormwater which is discharged. In order to demonstrate compliance with the limit, monitoring of hydrocarbons within the stormwater is required. Therefore a requirement to monitor stormwater prior to discharge has been included in the amended licence. The condition specifies use of recognised sampling and analysis methods to ensure monitoring results are reliable and accurate in order to demonstrate compliance with the licence limits.<br>While the Delegated Officer notes that the Licence Holder is unable to obtain analysis results in a short timeframe prior to the intended discharge of water, the conditions do not prevent the licence holder from discharging stormwater pending the receipt of analysis results. The results are used as evidence that limits have been met prior to discharge. The Licence Holder is able to establish their own internal controls, such as additional field sampling and analysis, to provide confidence that discharge limits will be met. Non-NATA accredited field analysis is typically only authorised in licences where sample holding times for a parameter are unable to be met.<br>Additional to the above, the Licence Holder did not provide sufficient detail of the proposed field testing instruments/method |

| Condition | Summary of Licence Holder's comment | DWER response |
|---|---|---|
| | | to assess whether these may be a suitable alternative to NATA accredited analysis. |
| 6 | The Licence Holder requested that the condition wording is amended to say that the licence holder must ensure that annually required monitoring is undertaken in each annual period and that the condition is included as a note to Table 4 not a separate condition. | The comment was noted however the Delegated Officer considers that the conditions of the licence adequately and clearly prescribe the frequency of monitoring. The description of monitoring frequency in Condition 5 (Table 4) was adjusted from Annually (if operating) to Each annual period (if operating) to clarify that annual monitoring requirements apply to the annual period. Condition 6 specified there is to be at least 9 months between monitoring events in each annual period. |