



Licence Number	L7336/1998/10
Licence Holder	Alinta DEWAP Pty Ltd
ACN	058 070 689
Registered business address	Level 11 20 Bridge Street SYDNEY NSW 2000
Date of amendment	17 March 2017
Prescribed Premises	Category 52: Electric power generation
Premises	Port Hedland Power Station Lot 255 on Plan 192056 and Part of Lot 1497 on Plan 404497 BOODARIE WA 6722

Amendment

The Chief Executive Officer (CEO) of the Department of Environment Regulation (DER) has amended the above licence in accordance with section 59 of the *Environmental Protection Act 1986* as set out in this Amendment Notice. This Amendment Notice constitutes written notice of the amendment in accordance with section 59B(9) of the EP Act and follows.

Date signed: 17 March 2017

Jonathan Bailes
A/SENIOR MANAGER – INDUSTRY REGULATION (PROCESS INDUSTRIES)
LICENSING AND APPROVALS

an officer delegated under section 20 of the Environmental Protection Act 1986 (WA)

Amendment Notice

This notice is issued under section 59 of the *Environmental Protection Act* 1986 (EP Act) to amend the licence issued under the EP Act for a prescribed premises as set out below. This notice of amendment is given under section 59B(9) of the EP Act.

The following DER Guidance Statements have informed the decision made on this amendment:

- Guidance Statement: Regulatory Principles (July 2015)
- Guidance Statement: Setting Conditions (October 2015)
- Guidance Statement: Decision Making (November 2016)
- Guidance Statement: Risk Assessment (November 2016)
- Guidance Statement: Environmental Siting (November 2016)

Amendment Description

On 26 August 2016, Alinta DEWAP Pty Ltd (the Licence Holder) submitted an application to DER for an amendment to Licence L7336/1998/10 for the Port Hedland Power Station (the Premises).

The amendment application relates to a proposal to decommission an existing Frame-6B gas turbine (TG 301) at the Boodarie satellite site and replace it with a LM6000PF gas turbine generator with auxiliaries. The Licence Holder advised that decommissioning and construction works will essentially involve a like-for-like replacement and will not result in an increase in the design capacity of the power station.

The replacement of the Frame-6B gas turbine with a new LM6000PF gas turbine will result in an overall reduction in emissions of oxides of nitrogen (NO_x), as the LM6000PF turbine uses dry low NO_x technology. There will, however, be a corresponding increase in carbon monoxide (CO) emissions. Table 1 compares the expected emissions from the LM6000PF with current emissions from the Frame-6B.

Table 1: LM600 emissions against Frame-6B emissions

Emission type		Current rate (Frame 6B)	Proposed rate (LM6000)
NO _x	g/s	28	2.2
	t/yr	2,199	67
CO	g/s	0.5	4.8
	t/yr	38	147
CO ₂	t/yr	383,160	137,891

As part of the licence amendment application, the Licence Holder submitted an acoustic assessment performed in August 2016 to ascertain the baseline environmental noise from the existing Boodarie turbines. The acoustic assessment found that noise levels attributable to the operation of the Boodarie turbines received at the nearest noise sensitive receptor (South Hedland ~6km to the east) complied

with the *Environmental Protection (Noise) Regulations 1998* (Noise Regulations).

The Licence Holder has advised that the turbine upgrade work will use a similar selection of equipment installed in a different arrangement. Based on indicative estimates provided by the manufacturer of the new turbine, the sound power level of the LM6000PF could be 10 dB(A) higher than the Frame-6B, after taking account of the standard attenuation provided in the enclosure package which houses the turbine.

As part of the amendment, the Delegated Officer has also updated the premises address and removed quarterly reporting of emissions to air.

Location, environmental siting and potential receptors

The Premises are split across two separate locations connected by a transmission line and is operated as a single power station. The Premises are comprised of five Frame-6B gas turbine generators, three at the Hedland site and two at the Boodarie satellite site (refer Figure 1).

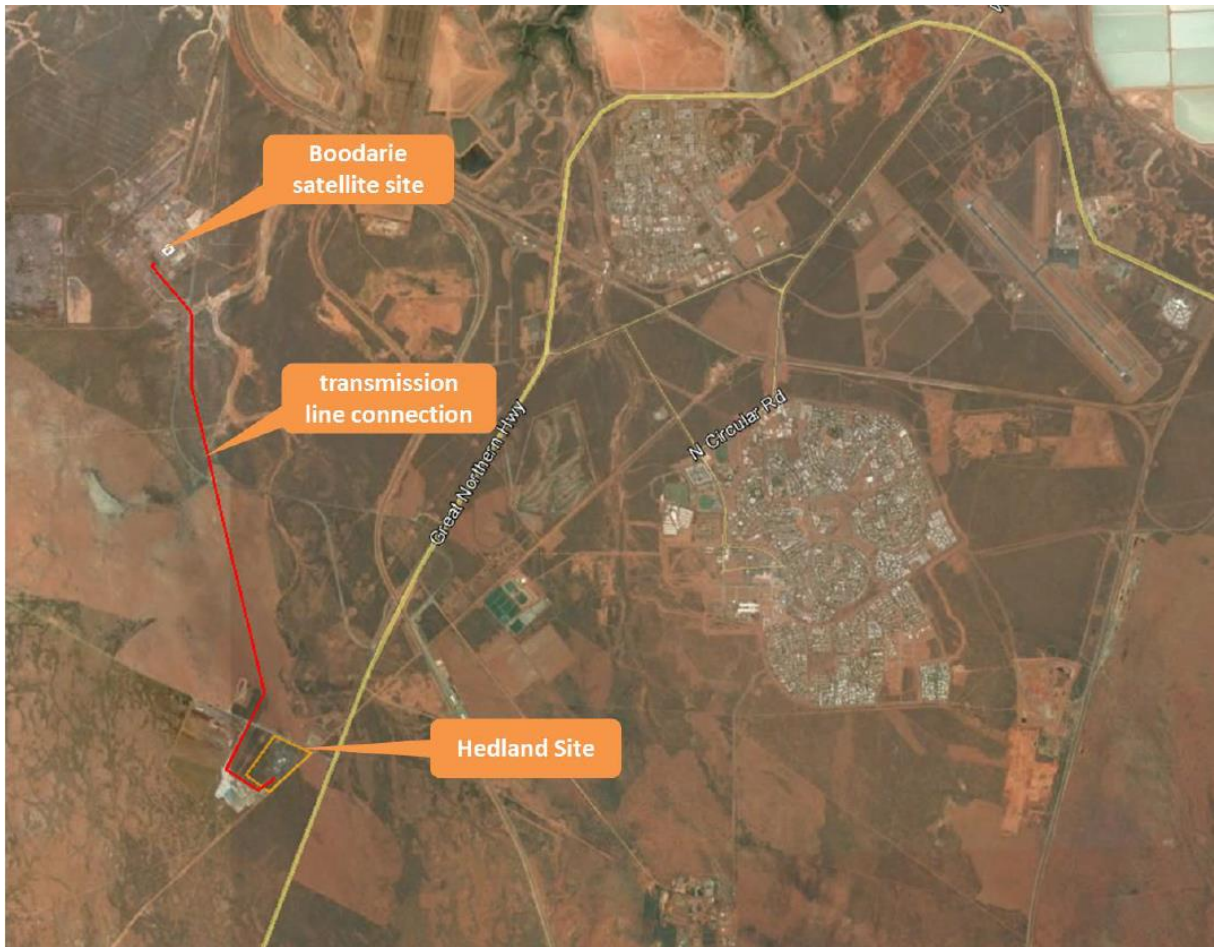
The Boodarie satellite site is located within the Boodarie Industrial Estate zoned 'Strategic Industry' in accordance with the Town of Port Hedland's Town Planning Scheme No. 5. The distance to nearest receptors is shown in Table 2 below.

The Boodarie satellite site is located on a relatively small part of a larger lot occupied by BHP Billiton. Therefore, the Delegated Officer has not considered the industrial land surrounding the Boodarie satellite site as a potential receptor.

Table 2: Receptors and distance from prescribed activity (Boodarie site)

Residential and Sensitive Premises	Distance from Prescribed Activity
Wedgfield Industrial Estate	4.7 km east
Port Hedland residential area	6.5 km east-southeast
Environmental receptors	Distance from Prescribed Activity
Beebingarra Creek: watercourse, minor, non-perennial	700 m south-east
Saline Coastal Flat (mangrove)	2.2 km northeast

Figure 1 – Port Hedland Power Station



Risk Assessment

Tables 3 and 4 below describe the Risk Events associated with the amendment consistent with the *Guidance Statement: Risk Assessments*. Both tables identify whether the emissions present a material risk to human health or the environment, requiring regulatory controls.

Table 3: Risk assessment for proposed amendment during construction

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning
Source/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts				
Category 52: Electric power generation Decommissioning of the old TG301 and construction of the new LM6000PF gas turbine	Emissions to air: dust particulates during decommissioning and installation activities	Neighbouring industrial premises (Wedgfield) 4.7km E	Air	Public health and amenity	Slight	Unlikely	Low	Minimal demolition / construction works required. No clearing or material earthworks is required. The existing concrete foundations and high voltage cabling currently in use by the Frame-6B turbine will be re-used for the new turbine with only minor modifications (extension of concrete footings by ~1m). Decommissioning and construction period estimated to take a maximum of six months.
	Noise: generated during decommissioning and installation activities	Neighbouring urban area (South Hedland) 6.5km ESE			Slight			The new turbine and generator are fully enclosed in a custom self-bunded acoustic enclosure. Noise emissions during construction are not expected to be appreciably different than during normal operation of the turbines. <i>The Environmental Protection (Noise) Regulations 1997</i> regulate noise emissions from industrial sites.

Table 4: Risk assessment for proposed amendment during operation

Risk Event					Consequence rating	Likelihood rating	Risk	Reasoning	
Source/Activities	Potential Emissions	Potential Receptors	Potential Pathway	Potential Adverse Impacts					
Category 52: Electric power generation	Operation of the new LM6000PF gas turbine	<p>Emissions to air: generated by operation of the new gas turbine (Oxides of nitrogen (NOx), carbon monoxide (CO), sulfur dioxide, particulates) in combination with the existing turbine</p>	Neighbouring industrial premises (Wedgefield) 4.7km E	Air	Public health and amenity	Slight	Rare	Low	<p>The new turbine will result in a decrease in NOx emissions but an increase in CO emissions. Air emissions will be discharged via a stack located 15.6m above ground level. The premises is located within a 'Strategic Industry' zone.</p> <p>The Delegated Officer considers that the design of the gas turbine, the location of the premises, and the separation distance between the source and potential receptors is sufficient to ensure there are no adverse impacts on potential receptors.</p>
		<p>Noise: generated by operation of the new gas turbine in combination with existing turbine</p>	Neighbouring urban area (South Hedland) 6.5km ESE						Minor

Decision

The Delegated Officer has considered all of the above information and determined the risk of emissions (air and noise) from the proposed amendment to be **Low**. The Delegated Officer has therefore granted the licence amendment.

New licence conditions have been included on the licence to permit the Licence Holder to complete the proposed construction works and submit certification once complete.

Changes to tenure relating to the Boodarie Strategic Industrial Estate have been processed by the Department of Lands. Therefore, the Delegated Officer has amended the licence to reference the new lot and deposited plan numbers.

The Licence Holder has been reporting calculated air emissions quarterly to DER in accordance with condition 5.23. Quarterly reports submitted to date indicate that emissions are compliant with current emission limits on the licence. Condition 5.2.1 requires the Licence Holder to submit an annual environment report containing calculated and measured emissions. The Delegated Officer considers that annual reporting is sufficient and has removed the quarterly reporting requirement.

Licence Holder's Comments

The Licence Holder was provided with the draft Amendment Notice on 7 March 2017. The Licence Holder responded on 10 March 2017 waiving the remaining comment period (until 28 March 2017). No comments were submitted on the draft Amendment Notice.

Amendment History

Table 5 provides the amendment history for Licence L7336/1998/10.

Table 5: Licence Amendment History

Instrument	Issued	Amendment
L7336/1998/10	05/12/2013	Licence issued
L7336/1998/10	29/04/2016	Amendment by notice to change the licence expiry date to 7 December 2025
L7336/1998/10	17/03/2017	Amendment Notice 1 Decommissioning of a Frame-6B (TG 301) gas turbine and construction, commissioning and operation of a LM6000PF gas turbine at the Boodarie satellite site.

Amendment

- The licence prescribed premises location is amended from the address below:

Lot 255 on Plan 192056 and part Lot 203 on Plan 220594

to the new address below:

Lot 255 on Plan 192056 and Part of Lot 1497 on Plan 404497

- Condition 1.1.2 of the licence is amended by the insertion of the following definition:

‘CEO’ for the purpose of correspondence means;
 Chief Executive Officer
 Department Div.3 Pt.V EP Act
 Locked Bag 33
 CLOISTERS SQUARE WA 6850
 Email: info@der.wa.gov.au

- Table 2.2.1 of the licence is amended by the deletion of the text shown in strikethrough below and the insertion of the red text shown in underline below:

Table 2.2.1: Point source emission points to air		
Emission point reference	Emission Point	Source, including any abatement
A1- A3	Stack 1, 2, 3	Respective stacks of the three 30 MW each, gas turbine units with auxiliary diesel backup at Lot 255 on Plan 192056
A4-A5	Stack 4,5	Respective stacks of the two 30 MW each, single fuel gas turbine units at part Lot 203 on Plan 220594 <u>1497 on Plan 404497</u>

- The licence is amended by the deletion of the following condition 5.2.3:

5.2.3 The Licensee shall submit the information in Table 5.2.2 to the Director according to the specifications in that table.

Table 5.2.2: Non-annual reporting requirements				
Condition or table (if relevant)	Parameter	Reporting period	Reporting date (after end of the reporting period)	Format or form¹
Condition 1.3.2	NOx CO	Quarterly	28 calendar days	AR1

Note 1: Forms are in Schedule 2

5. The licence is amended by the insertion of the following conditions 6.1 to 6.4:

6 Works

6.1 The Licensee must construct the infrastructure listed in Column 1 in accordance with the requirements set out in Column 2 of Table 6.1.

Table 6.1 Infrastructure Requirements Table	
Column 1	Column 2
Site Infrastructure	Specified Requirements
<i>LM6000PF gas turbine generator including auxiliaries</i>	<ul style="list-style-type: none"> • Cased in an acoustic enclosure package; • Utilises Dry Low Emissions technology.
<i>HV Generator, excitation system and auxiliaries</i>	<ul style="list-style-type: none"> • Generator lube oil skid with capacity of 9,464L; • Installed in a concrete bund sized to allow for the entire contents of the lube oil system plus one day's maximum rainfall plus 20% freeboard.
<i>Lube oil system</i>	<ul style="list-style-type: none"> • 946L capacity; • Self-bunded.
<i>Fin fan coolers</i>	<i>None specified</i>
<i>11/0.4kV auxiliary transformer</i>	<i>None specified</i>
<i>Fuel gas and filtration systems</i>	<i>None specified</i>
<i>Exhaust Stack (re-used)</i>	<ul style="list-style-type: none"> • Exhaust outlet located a minimum of 15.6 meters above ground level

6.2 The Licensee must not depart from the requirements specified in the Infrastructure Requirements Table except:

- (a) where such departure is minor in nature and does not materially change or affect the infrastructure; or
- (b) where such departure improves the functionality of the infrastructure and does not increase risks to public health, public amenity or the environment.

6.3 The Licensee must upon completion of the works as per condition 6.1 provide to the CEO an engineering certification from a suitably qualified professional confirming each item of infrastructure as specified in Table 6.1 has been constructed with no material defects.

6.4 The Licensee must ensure that the equipment and infrastructure in Table 6.1 are maintained in good working order.

Appendix 1: Key Documents

	Document Title	In text ref	Availability
1	Licence L7336/1998/10 – Port Hedland Power Station	L7336/1998/10	accessed at http://www.der.wa.gov.au
2	Licence Amendment Application: Alinta DEWAP Pty Ltd - Port Hedland Power Station	-	DER records (A1157484)
3	Supplementary Information to Licence Amendment Application: Alinta DEWAP Pty Ltd - Port Hedland Power Station	-	DER records (A1184221)
4	DER, July 2015. <i>Guidance Statement: Regulatory principles</i> . Department of Environment Regulation, Perth.	DER 2015a	accessed at http://www.der.wa.gov.au
5	DER, October 2015. <i>Guidance Statement: Setting conditions</i> . Department of Environment Regulation, Perth.	DER 2015b	
6	DER, November 2016. <i>Guidance Statement: Risk Assessments</i> . Department of Environment Regulation, Perth.	DER 2016b	
7	DER, November 2016. <i>Guidance Statement: Decision Making</i> . Department of Environment Regulation, Perth.	DER 2016c	