



APA DEWAP Pty Ltd

1 July 2024

APA Network - System Description



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Further information can be found here:

Webpage: [North West Interconnected System \(NWIS\) | APA Group](#)

1. Introduction

1.1. Purpose

This document is APA DEWAP Pty Ltd's ("ADEWAP") System Description prepared in accordance with the Pilbara Network Rules ("PNR") and the Pilbara Network Access Code ("PNAC") for the APA Network in the Pilbara.¹ This document also sets out information relevant to the Harmonised Technical Rules ("HTR").

1.2. Legislative framework

Section 36 of the PNAC establishes the need for ADEWAP² to publish a system description in relation to the APA Network which is subject to light regulation under the PNAC.

The system description requirements are set out in Section 9 of the PNAC as follows:

9. The "system description requirements" for a light regulation network are that the description includes at least:
- (1) a map showing the geographical extent of the light regulation network;
 - (2) a simplified single line diagram of the light regulation network that shows the location of key facilities;
 - (3) all constraint rules which may affect access to or use of the network;
 - (4) current limit advice provided to the ISO under the PNR;
 - (5) any other technical constraints in the light regulation network that will or are reasonably likely to materially affect access to or use of the network;
 - (6) reasonable information about the light regulation network's capacity in key location.

1.3. Effective date

This System Description is correct as at 1 July 2024.

ADEWAP will update the System Description as required.

1.4. Other relevant information

Other documents prepared in relation to PNAC information requirements include:

- ADEWAP User Access Guide
- ADEWAP Services and Pricing Policy
- ADEWAP Contributions Policy
- ADEWAP Queuing Policy
- ADEWAP Planning Standard & Criteria.

These documents can be found here [North West Interconnected System \(NWIS\) | APA Group](#)

¹ For the purposes of this document, references to "APA Network" have the same meaning as Alinta Port Hedland Network as defined in the PNAC.

² The term "ADEWAP" in this document refers to the Network System Provider (NSP) for the Alinta Port Hedland network as set out in the PNAC.

2. ADEWAP system

The assets associated with ADEWAP's Port Hedland operations include the APA Network and the operation of its Port Hedland Power Station.

2.1. ADEWAP Port Hedland assets

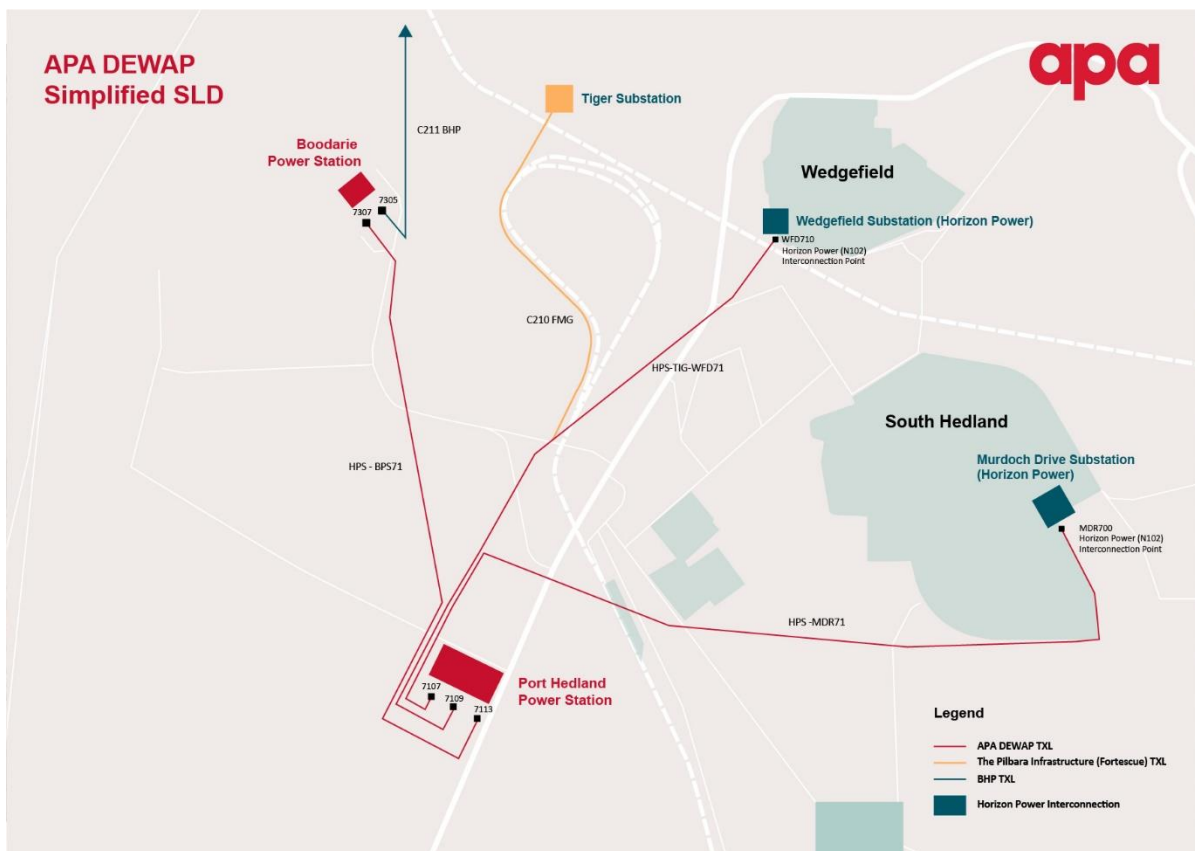
The APA Network consists of three 66kV feeders comprising of about 25km of 75MVA conductor, of which:

- two feeders connect Port Hedland Power Station to the Horizon Power network substations of Wedgefield and Murdoch; and
- a single line runs between and connects the Port Hedland Power Station's two sites of generation (at Port Hedland and Boodarie).

The Port Hedland Power Station's two sites of generation at Port Hedland and Boodarie sit around 5km apart, however they are configured, operate and are dispatched as a single power station. The ADEWAP Port Hedland Power Station has an operational capacity of around 175MW.

Figure 1 provides a map of the geographical location and single line diagram of the APA Network.

Figure 1 Geographical map and single line diagram



2.2. Thermal ratings

The table below sets out the thermal ratings and limits of the transmission lines on the APA Network.

Table 1: APA Network thermal ratings and limits

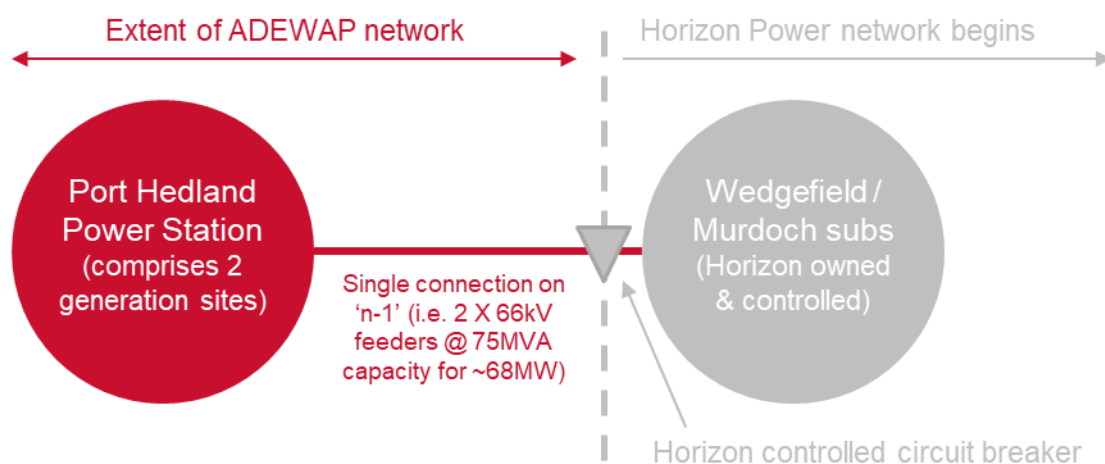
Transmission line	Summer 45°C	Limiting component	Protection operate limit	MVA
Port Hedland Power Station – Boodarie Power Station 66kV Line	1014A	Conductor	1560A	109
Port Hedland Power Station – Murdoch Drive Substation 66kV Line	670A	Conductor	1560A	75
Port Hedland Power Station – Wedgefield Substation 66kV Line	860A	Conductor	1560A	98

2.3. APA Network operation

ADEWAP operates the APA Network on a 'n-1' basis. Therefore, the two 66kV feeders that connect ADEWAP's Port Hedland Power Station to the Horizon Power network (at Wedgefield and Murdoch) operate as a single connection on an n-1 basis. This provides approximately 68MW of firm network capacity.

Figure 2 presents a conceptual view of this below.

Figure 2: Concept of APA Network operation philosophy



This mode of n-1 operation is necessitated by good electricity industry practice, since the loss of a single 66kV feeder would see all load immediately transfer to the 66kV feeder which remains in service. Operating on an n-1 basis therefore avoids the 66kV feeder that remains in-service being overloaded, and therefore also lost due to the load exceeding its physical thermal capacity.

2.4. APA Network capacity

At the time of this publication, there are three contracted users of the APA Network who all have firm network usage rights under long term agreements. In total, these users have contracted 120MW of firm network capacity, which operates in conjunction with a contractually set tiered ranking of priority. There is a further 50MW of non-firm, 'as available' capacity that is also contracted by the three existing users.

The combination of the APA Network users' current contracted firm plus non-firm network usage rights see no availability of firm network capacity capable of being contracted by new prospective users of the APA Network without user funded augmentation in accordance with the ADEWAP Contributions Policy available on the APA website.

Further information found here:

[North West Interconnected System \(NWIS\) | APA Group](#)