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Port Hedland Solar Farm: Exemption from 3.2.5.2(f) of the Harmonised Technical Rules

Final Decision

8 April 2025



Contents

1. Executive Summary	2
2. Exemption application	3
2.1. Regulatory framework	3
3. Draft decision	4
3.1. Stakeholder submissions	4
4. Consultation with ISO	5
4.1. ISO advice	5
5. Final decision	7

1. Executive Summary

The Access Applicant (ADEWAP Pty Ltd in its capacity as a generator) is seeking connection for the Port Hedland Solar Farm within APA's existing Port Hedland Power Station at 33 kV and is seeking an exemption under part 64(1) of the Pilbara Network Rules (PNR) from clause 3.2.5.2(f) of the Harmonised Technical Rules (HTR).

ADEWAP Pty Ltd in its capacity as a Registered Network Service Provider (NSP) has reviewed and consulted on the proposed exemption, including seeking advice and approval from the Pilbara independent system operator (ISO) on whether it believes that it should be granted.

The NSP is satisfied that the exemption:

- is in accordance with Good Electricity Industry Practice (GEIP); and
- will not have any effect on the Registered NSPs and Network Users of its Network or any Network in the Power System.

In its advice, the ISO has recommended a set of conditions for granting the exemption. The NSP is satisfied that the Access Applicant's proposed exemption accommodates these conditions as detailed in section 4.1.

The NSP's Final Decision is to grant the ADEWAP Pty Ltd an indefinite exemption from clause 3.2.5.2(f) of the Harmonised Technical Rules for the purposes of connecting the Port Headland Solar Farm to the Port Headland Power Station.

2. Exemption application

ADEWAP Pty Ltd in its capacity as a Registered Network Service Provider (NSP) received an exemption request from an Access Applicant (ADEWAP Pty Ltd in its capacity as a generator).

The Access Applicant is seeking to connect the Port Hedland Solar Farm with APA's existing Port Hedland Power Station and under the HTR, is required to have a circuit breaker with close inhibit interlock as the feeder circuit breaker is connected at a distribution voltage level (33kV).

Instead, the Access Applicant is seeking an exemption from clause 3.2.5.2(f) of the HTR using part 64(1) of the PNR.

The application for the exemption included a Technical Note that outlined the problem statement and basis for requesting the exemption, as required under part 64(2) of the PNR. This can be found in Appendix A of the Draft decision¹.

2.1. Regulatory framework

The PNR establish rules for the operation, management, security and reliability of Pilbara networks and the functions of the ISO. The PNR incorporates the HTR which describe the technical performance requirements of the power system, and the obligations of network service providers to provide transmission and distribution systems that achieve these requirements.

Clause 3.2.5.2(f) of the HTR relates to protection requirements for generation facilities that are used to manage the risk of a generating unit re-energising a deenergised power system.

Clause 3.2.5.2(f) states that:

"If a generating unit is connected to the distribution system, the generator must provide a circuit breaker close inhibit interlock with the feeder circuit breaker at the NSP's substation in accordance with the requirements agreed between the generator and the NSP in accordance with GEIP.

{Note: This interlock is required in addition to the islanding protection specified in subclause 3.2.5.2(d) (3) on account of the potential safety hazard if a deenergised distribution feeder was energised by an embedded generating unit.}"

The Access Applicant's connection is designed with two 33 kV collector circuits at a 33 kV switchboard that forms part of the Registered NSP's covered network. Clause 3.2.5.2(f) of the HTR therefore applies as it is connected to a distribution system and is required to have a circuit breaker with close inhibit interlock with the feeder circuit breaker connected at the distribution voltage level.

The procedures for the application and granting of an exemption from one or more requirements of the HTR are outlined in Part 64 of the PNR.

As the Facility in question is greater than 10 MVA, the NSP must consult with the ISO regarding the proposed exemption.² Furthermore, the NSP and the Access Applicant are also part of a Vertically-Integrated NSP and as such, the NSP cannot grant an exemption without approval from the ISO³.

Consequently, the NSP has consulted with the ISO regarding the Access Applicant's request for exemption in accordance with sections 64(3) and 64(4) of the PNR.

¹ https://admin.apa.com.au/media/fjchamfm/250328_draft_decision_submission_phsf_htr_3252-f.pdf

² Refer to section 64(4) of the Pilbara Network Rules.

³ Refer to section 64(3) of the Pilbara Network Rules.

3. Draft decision

The NSP released its Draft decision on the 28 February 2025⁴ that proposed granting the Access Applicant an exemption from clause 3.2.5.2(f) of the HTR for an indefinite period with no proposed conditions.

The NSP noted the intention of the clause was management of a safety risk arising with overhead 33 kV distribution feeders in populated areas which would be unacceptable without feeder circuit breakers. It accepted that the same level of risk did not arise in the design submitted by the Access Applicant.

The NSP was satisfied that the exemption should be granted in accordance with GEIP as the safety hazard intended to be managed through compliance with clause 3.2.5.2(f) of the HTR was adequately managed through the design of the solar farm.

Consequently, no advantages were identified in requiring the Access Applicant to comply with clause 3.2.5.2(f) of the HTR and include feeder circuit breakers in the design.

The proposed exemption would not have any effect on the Registered NSPs and Network Users of its Network or any Network in the Power System.

Consultation on the Draft decision was open for submissions until the 24 March 2025 in accordance with the Expedited Consultation Process⁵.

3.1. Stakeholder submissions

The NSP received one submission from Horizon Power on the Draft decision, which has been published on the APA website⁶.

The stakeholder had no concerns with the NSP's Draft decision to grant the Port Hedland Solar Farm an exemption from clause 3.2.5.2(f) of the HTR.

It recognised that the ISO was being consulted on the exemption to consider overall impact on System Security, Reliability and the Pilbara Electricity Objective.

⁴ https://admin.apa.com.au/media/fjchamfm/250328_draft_decision_submission_phsf_htr_3252-f.pdf

⁵ Refer to section A1.3 of the Pilbara Network Rules

⁶ https://admin.apa.com.au/media/3andubdh/250326_horizon_power_submission_phsf_htr_3252-f.pdf

4. Consultation with ISO

APA DEWAP has worked closely with the ISO throughout the access and connection process for the Port Hedland Solar Farm.

On 7 February 2025, the NSP requested the ISO review the Access Applicant's request for exemption from clause 3.2.5.2(f) of the HTR in accordance with sections 64(3) and 64(4) of the PNR and confirm whether the exemption poses any security risks and that it can be granted.

Under section 64(6), the ISO must as soon as practicable, and in any event within 4 weeks of the consultation commencing, determine, and advise the Registered NSP:

- a) Whether the exemption is or is not likely to cause or contribute to any adverse impact on Security, Reliability or the Pilbara Electricity Objective;
- b) Whether the exemption is or is not consistent with the constrained access regime in Subchapter 9.1 of the Pilbara Network Rules; and
- c) of any conditions the ISO recommends be placed on the exemption.

4.1. ISO advice

The ISO provided its advice on APA DEWAP's exemption request for the Port Hedland Solar Farm from HTR clause 3.2.5.2(f) on the 7 March 2025.

The ISO concluded that:

- the exemption is not likely to cause or contribute to any adverse impact on System Security, Reliability or the Pilbara Electricity Objective.

The Access Applicant demonstrated that its anti-islanding functions and latching logic will prevent inadvertent re-energisation of a de-energised power system and achieve the safety objectives of HTR clause 3.2.5.2(f). In addition, the risk of any unintended black start event is significantly reduced by placing the reclose authority solely under the Registered NSP's control.

- the exemption is consistent with the constrained network access⁷ framework in the PNR.

The ISO considered that the change will not impact known existing constraints or the ability of other facilities on the Registered NSP network to respond to constraint directions issued under the constrained network access regime. This is because the exemption includes the application of engineering controls so that the inverters cannot re-energise a de-energised power system.

Further, the exemption does not identify or interact with any legacy rights, build-out rights or other rights contemplated in subchapter 9.1 of the PNR.

In summary, the ISO considered the exemption may be granted but recommended the following conditions be placed on the Access Applicant:

- a) Ensure the facility does not re-energise the de-energised section of the power system via the PoC circuit breakers, by meeting the following conditions:
 - i. Anti-islanding protection must be installed and enabled at the 33 kV PoC circuit breakers in accordance with GEIP and approved by the Registered NSP.
 - ii. Anti-islanding protection elements at the 33 kV PoC circuit breakers must remain active until the upstream 33 kV busbar voltage and frequency have returned to within the defined trip parameters.

⁷ Subchapter 9.1 of the HTR - Constrained network access

- iii. Anti-islanding trip signals for the 33 kV PoC circuit breakers must be latched within the relevant protection relays, and a local manual reset by the Registered NSP must be required before the circuit breakers can be closed.
 - iv. The facility's inverter start-up sequence must include a permissive control scheme that requires the power system frequency and voltage to be within frequency and voltage operating standards of HTR clause 2.2.1 and 2.2.2 respectively.
- b) Only the Registered NSP is to have the authority to close the PoC circuit breakers.

5. Final decision

The NSP's Draft decision was to grant the Access Applicant an exemption from clause 3.2.5.2(f) of the HTR for an indefinite period with no proposed conditions.

The NSP is satisfied that the exemption:

- is granted in accordance with GEIP as the safety hazard intended to be managed through compliance with clause 3.2.5.2(f) of the HTR has been adequately managed through the design of the solar farm; and
- will not have any effect on the Registered NSPs and Network Users of its Network or any Network in the Power System.

The ISO has also provided its advice on the exemption request including recommending a set of conditions for granting the exemption.

In making its decision, the NSP has considered its consultation with stakeholders and the advice received from the ISO, including its accompanying conditions. The NSP is satisfied that the Access Applicant's proposal for exemption fully accommodates the conditions proposed by the ISO.

The NSP's Final Decision is therefore to grant the exemption from clause 3.2.5.2(f) of the HTR subject to these conditions:

- a) Ensure the facility does not re-energise the de-energised section of the power system via the PoC circuit breakers, by meeting the following conditions:
 - i. Anti-islanding protection must be installed and enabled at the 33 kV PoC circuit breakers in accordance with Good Electricity Industry Practice (GEIP) and approved by the Registered NSP.
 - ii. Anti-islanding protection elements at the 33 kV PoC circuit breakers must remain active until the upstream 33 kV busbar voltage and frequency have returned to within the defined trip parameters.
 - iii. The anti-islanding trip signals for the 33 kV PoC circuit breakers must be latched within the relevant protection relays, and a local manual reset by the Registered NSP must be required before the circuit breakers can be closed.
 - iv. The facility's inverter start-up sequence must include a permissive control scheme that requires the power system frequency and voltage to be within frequency and voltage operating standards of HTR clause 2.2.1 and 2.2.2 respectively.
- b) Only the Registered NSP is to have the authority to close the PoC circuit breakers.

The exemption is granted for an indefinite period.

