Pilbara Networks Rules Rule Change Proposal Submission

PRC_2022_01
Integrated LNG Systems

Submitted by:

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12 The Coordinator is responsible for administering the rule change process under Appendix 2 of the PNR and approving rule change proposals, except where a protected provision is concerned in which case Ministerial approval is required from the Minister for Energy.

13 The Coordinator must not approve a rule change proposal if the Coordinator is not satisfied that the rule change proposal is not consistent with the Pilbara electricity objective, defined in Rule 119(2), being the promotion of efficient investment in, and efficient operation and use of, services of Pilbara networks for the long-term interests of consumers of electricity in the Pilbara region in relation to:

(a) price, quality, safety, reliability and security of supply of electricity; and

(b) the reliability, safety and security of any interconnected Pilbara System.

14 The Coordinator is also required to have regard to certain matters in making such a decision, including:

(a) the contribution of the Pilbara resources industry to the State's economy;

(b) the nature and scale of investment in the Pilbara resources industry; and

(c) the importance to the Pilbara resources industry of a secure and reliable electricity supply;

(d) the nature of electricity supply in the Pilbara region, including whether or not regulatory approaches used outside the Pilbara region are appropriate for the region, Pilbara network users and Pilbara networks; and

(e) any other matter that the Coordinator considers relevant.

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15 The ISO has a range of functions conferred under Part 8A of the EI Act, the Regulations, PNR and PNAC, including a function to maintain and improve power system security in any Pilbara network, along with a function to facilitate overall network coordination and planning for interconnected Pilbara systems.

16 The ISO takes its independence seriously with appropriate internal protocols having been adopted to ensure that it is able to do this notwithstanding the fact that its members and directors include Horizon Power, Alinta Energy and Rio Tinto.

17 Rule A2.3.5(g) provides for the ISO's role as a

Conclusions from preliminary functional review

19 ISO has undertaken a high-level review of the Proposal in the context of the PNR with a focus on the likely impact of the Proposal on the ISO's ability to perform its functions.

20 The upshot of that review is set out in Schedule One. In summary, the ISO anticipates that the following functions of the ISO may be adversely impacted by the Proposal or carry some degree of uncertainty:

(a) to maintain and improve system security across the Pilbara interconnected system in accordance with Rule 32(1);

(b) to administer the protocol framework in accordance with Rule 33(1)(c);

(c) given the absence of a representative power system model to date, the ISO's ability to create, maintain, manage and operate the power system model in accordance with Rules 33(1)(f) and Subchapter 4.4 of the PNR;

(d) to oversee the generation adequacy regime in accordance with Rule 33(1)(i) and Chapter 6 of the PNR.

i. While Chapter 6 does not apply to a non-covered network, considering the amount of generation installed at the Pluto Facility, the ISO will require visibility and power system model validity in order to perform its generation adequacy function.

(e) to procure essential system services, energy balancing and settlement in accordance with Rules 33(1)(m) and 33(1)(n), and Subchapters 8.1 and 8.2; and

(f) to undertake rule compliance monitoring and enforcement in accordance with Rule 33(1)(s) and Subchapter 12.1.

21 With respect to the ISO's functions that could foreseeably be adversely impacted by the Proposal, ISO believes that many of these impacts may be unintended and can be adequately mitigated

(d) **Network faults**: Over and above the generation and load loss, provide a list of credible contingencies within the Pluto Facility and undertake dynamic contingency assessment considering protection clearance times where applicable. In the event that the credible contingency list is unavailable or it is not possible to simulate, key network element losses and three phase bus faults shall be assessed at the main generation busbar and at each load centre.

(e) **Network impact assessment**: Undertake the system dynamic studies with generation dispatch and load level adjustments for a range of NWIS system wide credible contingency scenarios, including the most onerous operating conditions, which shall be discussed with the registered NSP. The impact assessment study shall include credible contingencies consisting of fault scenarios on the NWIS system primary elements, generation trip and load rejections to assess system wide performance.

Conceptual issues with adapting the integrated mining systems framework the GEIP Standard

Summary of position

Proposed Rule 5A provides that the PNR applies to 'integrated LNG systems' to the extent necessary to achieve or promote certain ***specified purposes*** to a ***GEIP standard***.

This establishes an interpretive lens of sorts when applied to integrated LNG systems, having the practical effect of requiring that each element of the PNR be assessed for application in the context of proposed Rule 5A.

While this approach is consistent with the drafting in respect of an integrated mining system, the ISO queries that the provision, when adopting a 'market' GEIP definition of the kind contained in the PNR, may introduce uncertainty, including in respect of required standard of prudent and appropriate conduct and benchmarks, not least of all because LNG facilities are otherwise universally operated on a stand-alone basis.

In addition to the ISO undertaking its own further consideration of the matter, the ISO considers that the TWG should be asked to identify technical issues that arise from this aspect of proposed Rule 5A, and whether improvements and/or greater specificity may be required in respect of integrated LNG systems.

26 In its Proposal, Woodside submitted that the PNR historically catered for exceptions to aspects of the PNR that do not comfortably align with the unique circumstances that apply to certain resources industry operators. An example that Woodside noted was the particular carve outs in the PNR for 'integrated mining networks' which limit the reach of the PNR in respect of operators in the mining industry.

27 Proposed Rule 5A, which is canvassed in broad terms, serves to limit the reach of the PNR in respect of the proposed new category of network, the 'integrated LNG network', borrowing from drafting contained in Rule 5 of the PNR.

28 The ISO appreciates the conceptual elegance of adapting the 'integrated mining system' definition but notes that the unique characteristics of an LNG facility introduces an element of uncertainty in relation to the project, which is not present in the context of an integrated mining system, particularly one that was electrically connected prior to the commencement of the PNR.

the efficient operation and use of services of Pilbara networks for the long term interests of consumers and, ultimately, with the Pilbara Electricity Objective.

Recommendation

39 Given the matters discussed above, the ISO considers that:

(a) the proposed TWG be requested to consider the application of GEIP in the context of the Pluto Facility in order to ascertain whether t

(b) the requirements in these rules and the harmonised technical rules regarding the approval and

In ISO's view, the proposed limits on directions are problematic from a conceptual standpoint as they often require multiple decision-makers to make determinations in respect of whether certain thresholds have been satisfied. Often, these decision-makers needs to be dynamic and responsive with their actions and the ISO is concerned that their ability to achieve this is complicated by the proposed amendments as the question of whether these various thresholds are satisfied may lead to reasonable disagreement between parties.

In ISO's view, the proposed amendments are also problematic from a practical standpoint, and so Woodside's role in determining whether they can reduce injections of electricity to the Pluto Facility in respect to a systems operations direction should be understood by the proposed TWG and should be agreed to by ISO, prior to connection occurring.

56 Rule 33(1)(k) of the PNR, and Chapter 7 more generally, provide for ISO's function in respect of system operations.

57 More particularly, the ISO, through the ISO Control Desk, is required to maintain the power system at a secure state, and upon the occurrence of a contingency event, return the power system to a secure state as soon as practicable.

58 If an active protocol is in effect, the ISO Control Desk takes on the function of the Incident Coordinator, which includes managing incidents in accordance with the active protocol and issuing system operations directions to the extent the protocol permits, with a view to achieving the system security objective. Horizon Power, as the ISO's delegate, performs the functions of the Incident Coordinator.

59 The Proposal includes specific provisions designed to ensure that system operations directions cannot be given in a form that interferes with the operation of the Pluto Facility, such that the only directions that may be given are limited to:

(a) reduce withdrawals of electricity;

(b) reduce injections of electricity; or

(c) disconnect the Pluto Facility from the NWIS.

60 The Proposal also inserts new Rule 172(4), applicable to the NSP of an integrated LNG network, a controller of a facility forming part of an system, which expand the grounds on which a participant can refuse to comply with various things, including various notices, directions and procedures, except where those notices, directions and procedures require it to reduce its withdrawal, disconnect from the Horizon Power network or reduce its injection of electricity but only if the controller or network user believes in good faith it can do so in a way which does not affect the reliability, security and/or safety of the integrated LNG system or compliance with applicable laws.

61 In the ISO's view, there are two practical challenges with this formulation:

(a) first, given that each of the networks represent a distinct power

(b) by extension, Horizon Power's statutory powers under the *Energy Operators (Powers) Act 1979* (WA) in respect of various matters.

68 At least to a certain degree, the ISO considers that the system security function relies on a baseline position of technical rule compliance and otherwise compliance with access contracts to function effectively.

69 Consequently, if the intention behind the proposed amendment is to allow for the PNR to override the provisions of access contracts under which an integrated LNG network obtains access to a covered network, then the ISO simply notes that this is unusual and the potential consequences should be considered by the TWG and Horizon Power in particular, when considering the baseline assumptions on which principles of system security are built.

Maitland Facility

70 In its Proposal, Woodside submitted that the renewable energy development that forms the Maitland Project will be fully compliant with the HTR and no exemption will be applied for in respect of it. However, the ISO is concerned that the definition of an integrated LNG system appears sufficiently broad to capture networks that are not directly electrically connected or contiguous, which carries the risk that the Maitland Project is captured in the definition of an integrated LNG system.

71 The ISO proposes that the Proposal should be revised to clarify this position.

Coordinating planned outages etc.

72 Rule 33(1)(j) of the PNR, and Subchapter 7.3 and 7.4 more generally, provides for ISO's system coordination function, which requires the ISO to be responsible for liaising with registered NSPs and essential system service providers to coordinate planned outages, commissioning, testing and any scheduling conflicts that may arise.

73 Rule 182(3) provides the ISO with the ability to resolve scheduling conflicts by giving a direction to

2. Please provide an assessment whether the change will better facilitate the achievement of the Pilbara electricity objective.

78 ISO acknowledges that Woodside's Proposal is intended to address the current barriers to LNG producers connecting to the NWIS, and to encourage existing LNG producers to connect to the NWIS, which will create a more coordinated, reliable network. Accordingly, ISO is generally supportive of any proposal that intends to develop the Pilbara resources industry.

79 However, for the above reasons, and until the issues raised in the first section of this submission are addressed, it is unclear whether the Proposal will better facilitate the achievement of the Objective in its current form.

3. Please indicate if the proposed change will have any implications for your organisation (for example changes to your IT or business systems) and any costs involved in implementing the changes.

80 If the Proposal is accepted, the ISO anticipates that it may

4. Please indicate the time required for your organisation to implement the change, should it be accepted as proposed.

82 Given the preliminary stage of the network impact assessment carried out by Woodside, it is difficult to anticipate the exact time required to implement these changes at this stage. This should be assessed as an outcome of the TWG once relevant impact assessment and network operational analysis and studies have been concluded.

Schedule One **1** **1** **1**

Function

Function	Reference	Explanation	Does this function apply to the Pluto Facility	1	1
Procedures Function - "to develop and administer *procedures* under Subchapter 3.6"	Rule 33(1)(b) Subchapter 3.6 Rule 53 Rule 103 Rule 141	The ISO develops procedures to assist with the performance of its other functions.	The proposed rule change hardcodes the requirement for the ISO to have regard to Rule 5A when developing procedures relating to: governing the relationship between the ISO and registered NSPs under Rule 53; notices, communications and system requirements under Rule 103; and metering procedures under Rule 141. It will apply to the Pluto Facility to the extent that the function is necessary to achieve or promote the Rule 5A Threshold.	It is likely that proposed rule change will require the ISO to meet the Rule 5A Threshold where making a procedure that applies to the Pluto Facility. Further, for the procedure to apply to the Pluto Facility from time to time, it will also need to meet the Rule 5A Threshold. This may impact on the ISO's performance of its development of procedures.	
Protocol Framework Function - "to administer the *protocol framework* under Subchapter 3.7"	Rule 33(1)(c) Subchapter 3.7 Rule 77(2)	The ISO creates framework that governs the collective response of various participants in the event of a system incident. This function is heavily tied in with the ISO's Security Function.	As amended, Rule 77(2) hardcodes the requirement for the ISO to have regard to Rule 5A when developing the protocol framework. It will apply to the Pluto Facility to the extent that the function is necessary to achieve or promote the Rule 5A Threshold.	The proposed rule change may have an impact on the ISO's performance of its function with respect to the Pluto Facility as it must: - first, determine whether the relevanIBÃÎCre0qqBYB)D0C©	

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				the same risks as outlined for the Visibility Function below, as these are related functions.
Visibility Function - "to manage the *visibility* regime under Subchapter 4.3"	Rule 33(1)(e) Subchapter 4.3 Rule 105(3)(c)	The ISO must ensure that the ISO control desk has access to certain data and information on the 'visibility list', which it requires to achieve the system security objective. This function is tied in with the ISO's Security Function.	As amended, Rule 105(3)(c) hardcodes the requirement for the ISO to determine whether a proposed inclusion to the visibility list is necessary to achieve or promote the Rule 5A Threshold. It will apply to the Pluto Facility to the extent that the function is necessary to achieve or promote the Rule 5A Threshold.	The applicability of this function rests on two aspects of the drafting. First, for the relevant provisions to apply at all in respect of the Pluto Facility, the Rule 5A Threshold must be met. Second, if the provision does apply, then as amended the application must be subject to a specific consideration of the Rule 5A Threshold. This is likely to have an impact on the ISO's performance of the function. The inability to perform this function poses the following risks: - Maintaining system security for loss of generation and/ or large loads at Pluto. - Identifying voltage and primary frequency support required to maintain HTR compliance at the point of connection and throughout the NWIS. - ISO's control desk coordination for faults and other contingency events across the NWIS.

Function

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				also possible that ISO may have to consider an additional reference node in the NWIS network as a result of the Pluto Facility being connected to the network.	
Generation Adequacy Regime Function - "to oversee the generation adequacy regime"	Rule 33(1)(i) Chapter 6 Rule 152(1)(a)	The ISO is responsible for ensuring that the power system			

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				undertaking its function as efficiently and informally as practicable, as a greater compliance burden may be borne by other affected parties.	
Control Desk Function - "through the *ISO control desk*, to participate in, to participate in *system operations activities* under Subchapter 7.5"	Rule 33(1)(k) Subchapter 7.5 Rule 172(4) Rule 188(2)(vi) Rule 188(4) Rule 188A Rule 189 Rule 191(2) A4.28				

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			that the above does not extend to constraint directions issued under Rule 258. As amended, Rule 188A provides that the ISO (in its role as incident coordinator), the ISO control desk, or the relevant entity may, at any time and for any reason, disconnect the Pluto Facility from the NWIS if it is reasonably necessary under GEIP to achieve the system security objective, provided that the relevant person gives Woodside or the relevant network user as much notice as practicable in the circumstances.	Once again, this may cause the ISO to rely more heavily on directing other facilities, which may lead to a disproportionate loss of autonomy and unfavourable impact on other facilities. The effect of the proposed rule change is that the ISO's ability to issue a direction in respect of the Pluto Facility is subject to significant carve outs. Notably, the insertion of Rule 172(4) provides that, if a direction is issued in respect of Pluto Facility to reduce its injection of electricity at the relevant interconnection point, the NSP, controller or network user (as the case may be), to make an assessment as to whether it can do so safely. If it cannot do so, then instead they must disconnect at the relevant interconnection point
Referral of Protocol Function - "to undertake post-incident discussion and investigations under Subchapter 7.6 including in relation to matters referred under rule 84"	Rule 33(1)(l) Subchapter 7.6 Rule 193	The ISO must discuss, investigate and subsequently report on unplanned outages or incidents that either jeopardised, or have the potential to jeopardise, the system security objective to a significant extent.	As amended, Rule 193(2)(b) arguably requires ISO to have regard to Rule 5A when carrying out its function. It will apply to the Pluto Facility to the extent that the function is necessary to achieve or promote the Rule 5A Threshold.	It is unlikely that the proposed rule change would prevent ISO from engaging with the relevant Woodside entity in relation to its investigations under Subchapter 7.6.	
Essential System Services Function -	Rule 33(1)(m)	The ISO must procure primary (and potentially secondary)	Woodside has represented in its submissions that it will procure	The proposed rule change is unlikely to impact on the ISO's	

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"to procure *essential system services* under Subchapter 8.1"	Subchapter 8.1	essential system service providers to regulate frequency control and ensure there is sufficient spinning reserve.	an "exit service" only in relation to the Pluto Facility and, as such, the Pluto Facility would not export electricity into the NWIS except in a contingency scenario. This means that the Pluto Facility would not be suitable for the provision of Essential System Services.	ability to perform this function. However, the assessment of essential system services will require detailed modelling of the Pluto Facility.	
Energy Balancing Function - "to undertake energy balancing under Subchapter 8.2 and settlement under Subchapter 8.3"	Rule 33(1)(n) Subchapter 8.2 – 8.3	The ISO must develop and maintain a procedure for energy balancing and fofor energy 17.54 1			

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			any legacy priority rights are needed.		
Access and Connection Function - "to provide *access* and connection services under Subchapter 9.2"	Rule 33(1)(p) Subchapter 9.2 Rule 269(a)	The ISO must supervise the application process for network access contracts. This may involve supervision, assisting with the preparation and processing of			

Function	Reference	Explanation