SYSTEM COORDINATION BULLETIN

QUARTERLY UPDATES: 1 JULY 2023 - 30 SEPTEMBER 2023

In accordance with Rule 288 of the Pilbara Network Rules (the Rules), the ISO must periodically, at least once every quarter, publish a bulletin giving brief information on matters discussed in system coordination reports which may impact the operational and commercial decisions of Pilbara electricity market participants.

The report is to include details of:

- The incidence and extent of constraint directions issued;
- The incidence and extent of system operations directions and precontingent directions issued;
- The incidence and extent of non-compliances with directions; and
- The incidence and extent of noteworthy incidents in the power system (including contingencies, pre-contingent actions, shortfalls in essential systems services and occasions on which the power system was not in a secure state or was outside the technical envelope) together with, for each incident:
  1. Information about the circumstances that caused the incident; and
  2. Information about the actions the ISO and registered NSPs took in response to the incident; and
  3. The results of any post-incident discussion or investigation.

The ISO must not include any confidential information in the System Coordination Bulletin. The ISO has consulted with the information owners as required under the Rules prior to publishing this bulletin (see Subchapter 11.2 of the Rules).

This System Coordination Bulletin should be read in conjunction with Chapter 7 of the Rules and the Interim Protocol Framework Procedure.

INCIDENCE AND EXTENT OF DIRECTIONS ISSUES

Table 1 provides details of the incidence and extent of the directions issued under the Rules, including:

- Pre-contingent [Rule 79];
- Systems operations [Rule 188];
- Emergency [Rule 189]; and
- Constraint [Rule 258].

Table 1: Directions issued

DATE	TYPE OF DIRECTION	FACILITY DIRECTED	REASON	COMPLIANCE WITH DIRECTION (Y/N)
N/A	N/A	N/A	N/A	N/A

There were no directions issued for the reporting period.

NOTEWORTHY INCIDENTS IN THE POWER SYSTEM

Table 2 provides an overview of noteworthy incidents that occurred in the power system during the reporting period.

For the purposes of this System Coordination Bulletin, a noteworthy incident in the power system includes contingencies, pre-contingent actions, shortfalls in essential system services and occasions on which the power system was not in a secure state or was outside the technical envelope [see Rule 163], which might have been credibly expected to adversely affect [see Rules 166 and 183(5)]:

- Security or reliability, as defined by the System Security Objective; or
- The ability of any part of a covered transmission network to benefit from essential system services; or
- The ability of a covered NSP to provide transmission voltage contracted network services; or
- Anything else ISO determines as a noteworthy incident.

As per Rule 162, the “System Security Objective” is to:

- Maintain the power system inside the Technical Envelope where practicable, and otherwise promptly return it to inside the Technical Envelope; and
- Maintain the power system in a Secure State where practicable, and otherwise return it to a Secure State as soon as practicable; and
- Otherwise — to a GEIP standard maintain, and to a GEIP standard seek to improve, security and reliability.

Table 2: Noteworthy incidents in the power system

DATE	DESCRIPTION OF CIRCUMSTANCES THAT CAUSED THE INCIDENT	ACTIONS TAKEN BY ISO AND NSP IN RESPONSE TO INCIDENT	POST INCIDENT DISCUSSION OR INVESTIGATION (Y/N)
July and September 2023	Planned transmission circuit outages in the West Pilbara resulting in planned non-credible islanding events.	Pre-outage risk assessments were conducted collaboratively by the relevant Registered NSPs and shared with the ISO and all system coordination participants. The ISO Control Desk enabled Secondary FCESS in the resultant non-credible islands. Alternative energy supply arrangements were put in place by affected NWIS participants.	N
12/07/2023	A generating unit tripped at 20 MW, causing a frequency excursion to 49.74 Hz. Frequency recovered and stabilised above 49.75 Hz within 7 seconds.	As the system was in a secure and normal operating state, the frequency excursion was managed by generator droop response, including responses from ESS providers. After frequency stabilised, the loss of generation was picked up by the primary FCESS response.	N
17/07/2023	A generating unit tripped at 24 MW, causing a frequency excursion to 49.66 Hz. Frequency recovered and stabilised above 49.75 Hz within 8 seconds.	As the system was in a secure and normal operating state, the frequency excursion was managed by generator droop response, including responses from ESS providers. After frequency stabilised, the loss of generation was picked up by the primary FCESS response.	Y
31/08/2023	A generating unit tripped at 25 MW, causing a frequency excursion to 49.71 Hz. Frequency recovered and stabilised above 49.75 Hz within 6 seconds.	As the system was in a secure and normal operating state, the frequency excursion was managed by generator droop response, including responses from ESS providers. After frequency stabilised, the loss of generation was picked up by the primary FCESS response.	N
5/09/2023	Load rejection in the West Pilbara during a planned islanding event caused a frequency excursion to 50.31 Hz in the islanded section of the system. Frequency recovered and stabilised to below 50.25 Hz within 6 seconds.	As the event occurred in an islanded section of the system, the frequency excursion was managed by the secondary FCESS response in the island.	N
September 2023	Potential protected industrial action by the Offshore Alliance at Chevron's LNG production facilities presented a risk of material gas supply disruptions in the Pilbara and associated electricity supply curtailments.	Generators' exposure to gas curtailments discussed in system coordination meetings. Real-time communications among system coordination participants was maintained as the situation developed.	N

RESULTS OF POST-INCIDENT DISCUSSIONS OR INVESTIGATION

Table 3 provides an overview of results of post-incident discussions or investigations during the reporting period.

In accordance with Subchapter 7.6 of the Rules, the ISO may conduct informal discussions [Rule 196] or investigations [Rule 197] on the following:

- a Contingency or other event which in the ISO's opinion jeopardised, or had the potential to jeopardise, the System Security Objective to a significant extent; or
- an unplanned outage of a facility or network element for which a planned outage would be a notifiable event; or
- a Protocol being activated or the ISO referring any other matter relating to the Protocol Framework.

The primary objective of ISO's post-incident discussions and investigations is, with a view to maintaining and improving security and reliability, to enable and promote:

- continuous improvement of the Rules, the Procedures, and the operation of the power system; and
- appropriate accountability for Rules Participants.

Table 3: Post-incident discussions or investigations

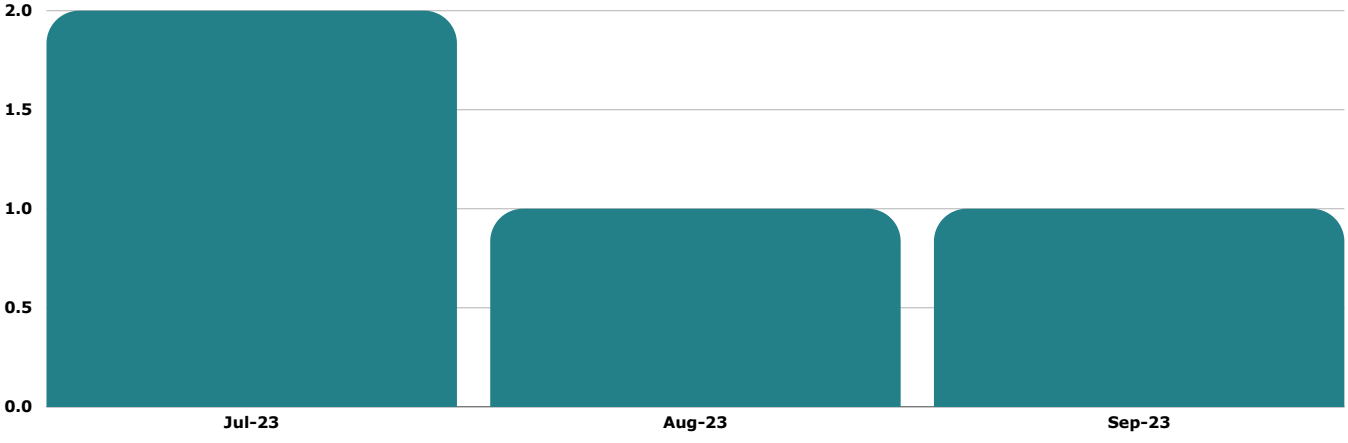
DATE	OVERVIEW OF INCIDENT AND DISCUSSION OR INVESTGATIONS	RESULTS AND RECOMMENDATIONS
17 July 2023	**Event Description** While the system was in normal operating conditions and in a secure state, a generating unit tripped at 24 MW output. Frequency dropped to a low of 49.66 Hz over 2 seconds, recovering back to 49.75 Hz within 4 seconds and stabilising at 49.87 Hz within 7.7 seconds of the trip. **Purpose of Informal Discussion** The ISO elected to conduct an informal discussion of the event with the purpose to assess the technical performance of the contracted ESS generators against the minimum droop response requirements of the Harmonised Technical Rules (HTR), specifically, HTR 3.3.4.4(e)(1)(A) and HTR 3.3.4.4(f)(1).	The ISO concluded that all except one of the generating units online at the time of the trip exhibited the minimum droop response required by HTR 3.3.4.4(e)(1)(A) and HTR 3.3.4.4(f)(1). The ISO requested the Registered Controller of the exceptional generating unit to undertake further investigations into the droop response of that unit, and to report back to the ISO on the outcomes of its investigations.

SYSTEM METRICS - EVENTS

Table 4: Unplanned events

EVENT	SUM OF EVENTS THIS REPORTING PERIOD	SUM OF EVENTS YEAR-TO-DATE	SUM OF TRADING INTERVALS THIS REPORTING PERIOD	SUM OF TRADING INTERVALS YEAR-TO-DATE
Abnormal frequency events	4	4	4 (0.09% of trading intervals for the quarter)	4 (0.09% of trading intervals for the year)
UFLS	0	0	0	0
UFIS	0	0	0	0
Unplanned islanding events	0	0	0	0
Secondary FCESS enablement (unplanned)	0	0	The ISO monitors this metric, but does not publish this information as it is commercially sensitive	The ISO monitors this metric, but does not publish this information as it is commercially sensitive
Protocol activations	0	0	0	0
System operations directions, pre-contingent directions, emergency directions	0	0	0	0
Constraint directions	0	0	0	0

Figure 1: Quarterly moving averages of system events



SYSTEM METRICS - EVENTS

Table 5: Planned events

EVENT	SUM OF EVENTS THIS REPORTING PERIOD	SUM OF EVENTS YEAR-TO-DATE	SUM OF TRADING INTERVALS THIS REPORTING PERIOD	SUM OF TRADING INTERVALS YEAR-TO-DATE
Planned Islanding Events	2	2	The ISO monitors this metric, but does not publish this information as it is commercially sensitive	The ISO monitors this metric, but does not publish this information as it is commercially sensitive
Secondary FCESS enablement (planned)	0	2		

SYSTEM METRICS - ENERGY

Table 6 – 2022-23 Total electricity production and emissions (Clean Energy Regulator Data)

METRIC	2022/2023 TOTAL
Electricity Production	2,957 GWh
Total emissions (scope 1 and scope 2)	1,711,614 t CO2-e

Table 7: Net energy traded through EBAS

METRIC	SUM THIS REPORTING PERIOD (MWH)	SUM YEAR-TO-DATE (MWH)
Net energy traded through EBAS	4,575	4,575

Rolling averages plot of EBAS trading will commence on following System Coordination Bulletins, with availability of more data.

SYSTEM METRICS - GENERATING FACILITIES

Table 8: Installed generating facilities on Covered Networks

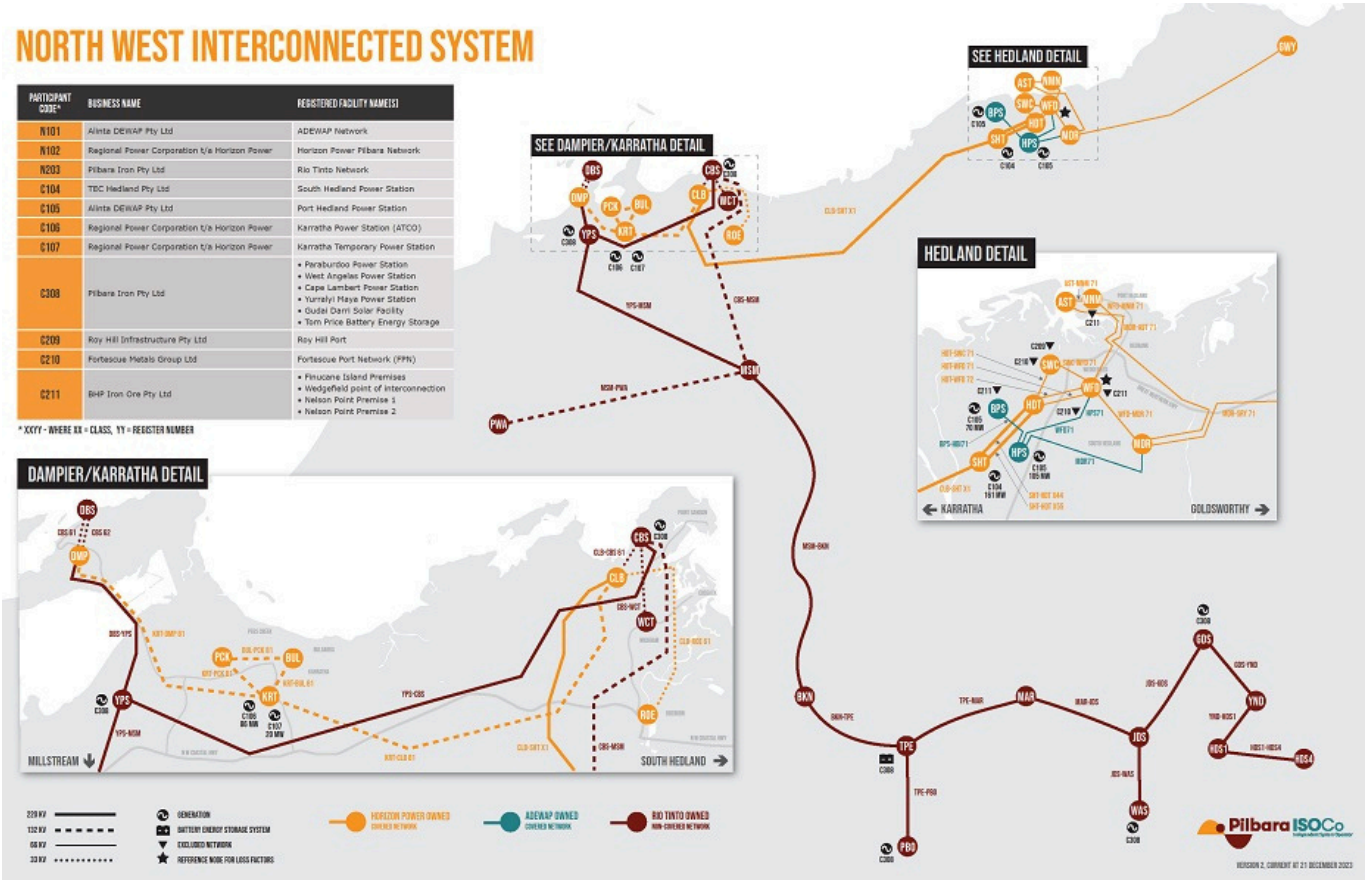
METRIC	NUMBER	CAPACITY
Thermal generating facilities*	4	442 MW
Renewable facilities	0	0
BESS	0	0

*Note - includes generation connected to networks that are Covered under Part 8 of the Electricity Industry Act 2004. Covered networks in the NWIS include APA DEWAP and Horizon Power, this does not include any generation owned by Rio Tinto

Table 9: New connections

METRIC	NUMBER OF NEW GENERATORS	NUMBER OF NEW GENERATORS YEAR-TO-DATE	NEW INSTALLED CAPACITY IN REPORTING PERIOD	NEW INSTALLED CAPACITY YEAR-TO-DATE
New thermal generation	0	0	0	0
New renewable generation	0	0	0	0
New BESS	0	0	0	0
New load facilities or excluded networks	0	0	0	0
Total new facilities >10 MW	0	0	0	0

NWIS SYSTEM MAP



WEBSITE LINK: HTTPS://PILBARAISOCO.COM.AU/NWIS/SYSTEM-MAP/