Department of Energy, Mines, Industry Regulation and Safety
Energy Policy WA
GOVERNMENT OF WESTERN AUSTRALIA

Meeting Agenda

Meeting Title:	Evolution of Pilbara Network Rules Working Group
Workstream	Workstream 1 (PNR Workstream)
Date:	23 May 2024
Time:	9:30am – 11:30am
Location:	Online, via TEAMS

Item	Item	Responsibility	Type	Duration
1	Welcome and Agenda	Chair	Noting	2 min
2	Meeting Apologies and Attendance	Chair	Noting	2 min
3	Competition Law Statement	Chair	Noting	2 min
4	Action Log	Chair	Noting	2 min
5	Scenario approach	RBP	Discussion	20 min
6	Changing demand	RBP	Discussion	25 min
7	Changing generation	RBP	Discussion	25 min
8	Non-modelling issues raised to date	RBP	Discussion	40 min
9	Next steps	Chair	Noting	4 min
	Next meeting: 10 June (PNR workstream)			

Competition and Consumer Law Obligations

Members of the PAC's Evolution of the Pilbara Networks Rules Working Group (**Members**) note their obligations under the *Competition and Consumer Act 2010* (**CCA**).

If a Member has a concern regarding the competition law implications of any issue being discussed at any meeting, please bring the matter to the immediate attention of the Chairperson.

Part IV of the CCA (titled "Restrictive Trade Practices") contains several prohibitions (rules) targeting anti-competitive conduct. These include:

(a) **cartel conduct**: cartel conduct is an arrangement or understanding between competitors to fix prices; restrict the supply or acquisition of goods or services by parties to the arrangement; allocate customers or territories; and or rig bids.

(b) **concerted practices**: a concerted practice can be conceived of as involving cooperation between competitors which has the purpose, effect or likely effect of substantially lessening competition, in particular, sharing Competitively Sensitive Information with competitors such as future pricing intentions and this end:

- a concerted practice, according to the ACCC, involves a lower threshold between parties than a contract arrangement or understanding; and accordingly; and
- a forum like the EPNRWG is capable being a place where such cooperation could occur.

(c) **anti-competitive contracts, arrangements understandings**: any contract, arrangement or understanding which has the purpose, effect or likely effect of substantially lessening competition.

(d) **anti-competitive conduct (market power)**: any conduct by a company with market power which has the purpose, effect or likely effect of substantially lessening competition.

(e) **collective boycotts**: where a group of competitors agree not to acquire goods or services from, or not to supply goods or services to, a business with whom the group is negotiating, unless the business accepts the terms and conditions offered by the group.

A contravention of the CCA could result in a significant fine (up to $500,000 for individuals and more than $10 million for companies). Cartel conduct may also result in criminal sanctions, including gaol terms for individuals.

Sensitive Information means and includes:

(a) commercially sensitive information belonging to a Member's organisation or business (in this document such bodies are referred to as an Industry Stakeholder); and

(b) information which, if disclosed, would breach an Industry Stakeholder's obligations of confidence to third parties, be against laws or regulations (including competition laws), would waive legal professional privilege, or cause unreasonable prejudice to the Coordinator of Energy or the State of Western Australia).

Guiding Principle – what not to discuss

In any circumstance in which Industry Stakeholders are or are likely to be in competition with one another a Member must not discuss or exchange with any of the other Members information that is not otherwise in the public domain about commercially sensitive matters, including without limitation the following:

(a) the rates or prices (including any discounts or rebates) for the goods produced or the services produced by the Industry Stakeholders that are paid by or offered to third parties;

(b) the confidential details regarding a customer or supplier of an Industry Stakeholder;

(c) any strategies employed by an Industry Stakeholder to further any business that is or is likely to be in competition with a business of another Industry Stakeholder, (including, without limitation, any strategy related to an Industry Stakeholder's approach to bilateral contracting or bidding in the energy or ancillary/essential system services markets);

(d) the prices paid or offered to be paid (including any aspects of a transaction) by an Industry Stakeholder to acquire goods or services from third parties; and

(e) the confidential particulars of a third party supplier of goods or services to an Industry Stakeholder, including any circumstances in which an Industry Stakeholder has refused to or would refuse to acquire goods or services from a third party supplier or class of third party supplier.

Compliance Procedures for Meetings

If any of the matters listed above is raised for discussion, or information is sought to be exchanged in relation to the matter, the relevant Member must object to the matter being discussed. If, despite the objection, discussion of the relevant matter continues, then the relevant Member should advise the Chairperson and cease participation in the meeting/discussion and the relevant events must be recorded in the minutes for the meeting, including the time at which the relevant Member ceased to participate.

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Agenda Item 4: Action Items

Evolution of the Pilbara Networks Rules Working Group (EPNRWG) Workstream 1 – Meeting - 2024_05_23

Shaded	Shaded action items are actions that have been completed since the last PAC meeting. Updates from last PAC meeting provided for information in RED.
Unshaded	Unshaded action items are still being progressed.
Missing	Action items missing in sequence have been completed from previous meetings and subsequently removed from log.

Item	Action	Responsibility	Meeting Arising	Status
1/2024	EPWA to circulate the NEM Reliability Review report to the Working Group when it is published.	EPWA	2024_04_15	**Closed** EPWA circulated the NEM Reliability Review report to the EPNRWG members on 1 May 2024 via email, together with the draft minutes for the EPNRWG meeting of 15 April 2024.

Government of **Western Australia**
Energy Policy WA

Evolution of the Pilbara Network Rules Working Group

Meeting 2024_05_23

23 May 2024

Working together for a **brighter** energy future.

Meeting Protocols

- Please place your microphone on mute, unless you are asking a question or making a comment
- Please keep questions relevant to the agenda item being discussed
- If there is not a break in discussion and you would like to say something, you can ‘raise your hand’ by typing ‘question’ or ‘comment’ in the meeting chat
- Questions and comments can also be emailed to EPWA - Energy Markets energymarkets@dmirs.wa.gov.au after the meeting
- The meeting will be recorded and minutes will be taken
- Please state your name and organisation when you ask a question
- If you are having connection/bandwidth issues, you may want to disable the incoming and/or outgoing video

5. Scenario approach

Scenarios

We are modelling six scenarios.

Sectoral drivers:

- Reuse data from 2023 Pilbara Energy Transformation Assessment modelling
- Scenario 1x: CT - Current Trajectories
- Scenario 2x: CT+ - Current Trajectories + Loads (load from Strategic Industrial Areas and CCS facilities)

Level of integration:

- Scenario nA: Current practices (self-balancing)
- Scenario nB: Partial integration (centralised balancing service)
- Scenario nC: Full integration (centralised dispatch)

Today we will discuss initial results from scenarios 1A and 1C.

		Level of Integration		
		A	**B**	**C**
Sectorial drivers	**1**	1A	1B	1C
	2	2A	2B	2C

Representing the scenarios in the model (1)

WEMSIM optimises dispatch across the entire power system based on cost minimization with specified constraints. This is used in scenarios 1C and 2C.

Self-balancing (scenarios 1A and 2A) is currently modelled by restricting transmission build to force load to be met in each relevant part of the system.

We are currently extending the model to include additional constraints linking specific facilities to specific loads. This will allow approximation of a central balancing service (scenarios 1B and 2B), and may result in revisions to the approach to scenarios 1A and 2A.

Representing the scenarios in the model (2)

Objective function: Lowest overall cost to meet

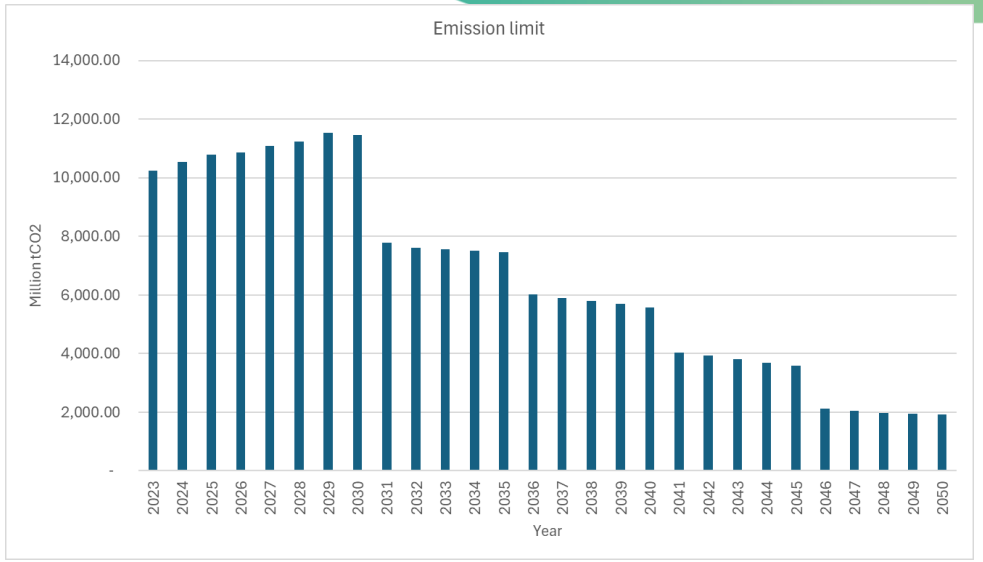
- Reliability (zero energy not served)
- Industry carbon emission targets

Costs

- Fixed & Variable Operation and Maintenance Cost
- Cost of new entry
- Supply cost (including fuel cost)

10% is added to temperature dependent load to approximate 10% POE demand

Transmission assumptions use specific scenarios from 2023 modelling.



Integration Scenario	Transmission	Capacity
A	Only existing and committed lines[1]	Local capacity added to meet 100% of local load
B	PETA "Current Trajectories – Semi Interconnected" transmission scenario[2]	Local capacity added to meet a proportion (TBC) of local load
C	PETA "Current Trajectories – Semi Interconnected" transmission scenario	Capacity added to meet system-wide load

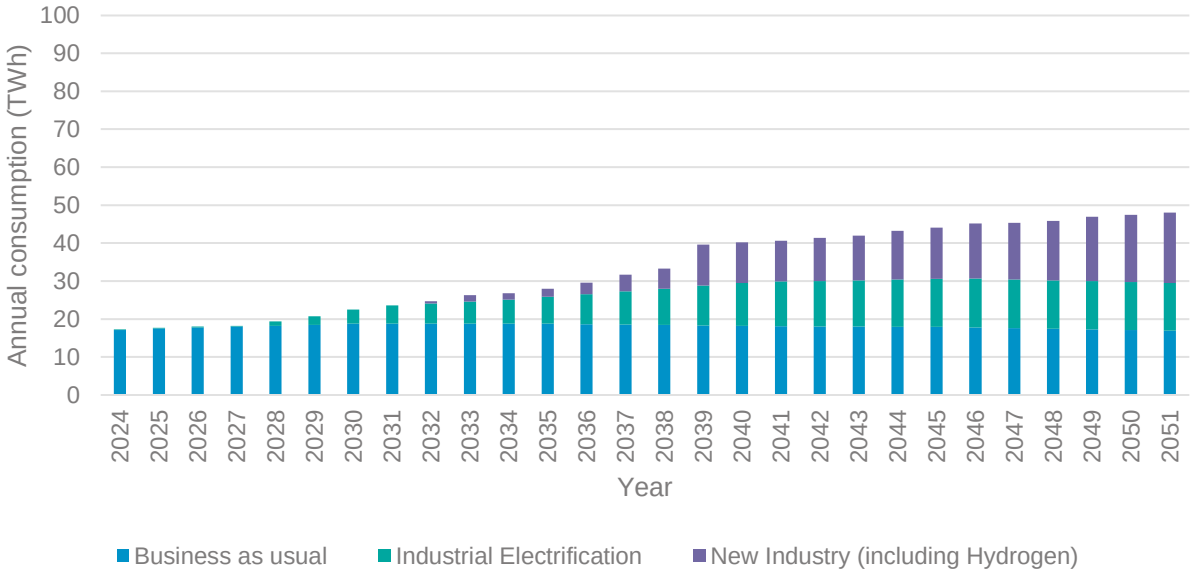
[1] Sufficient to allow transfer of power within individual portfolios
[2] Sufficient to allow transfer of power from any supply to any demand

6. Changing demand

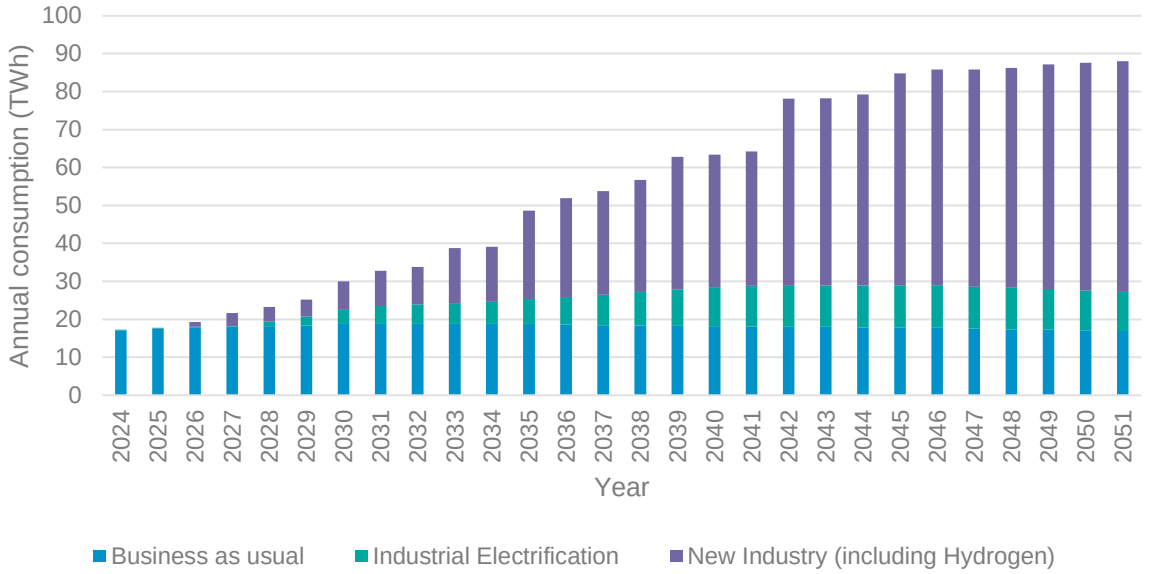
The type of load will change

Increasing volumes of non-vertically integrated demand, and potentially more flexible demand

Scenario 1 (CT)



Scenario 2 (CT+)

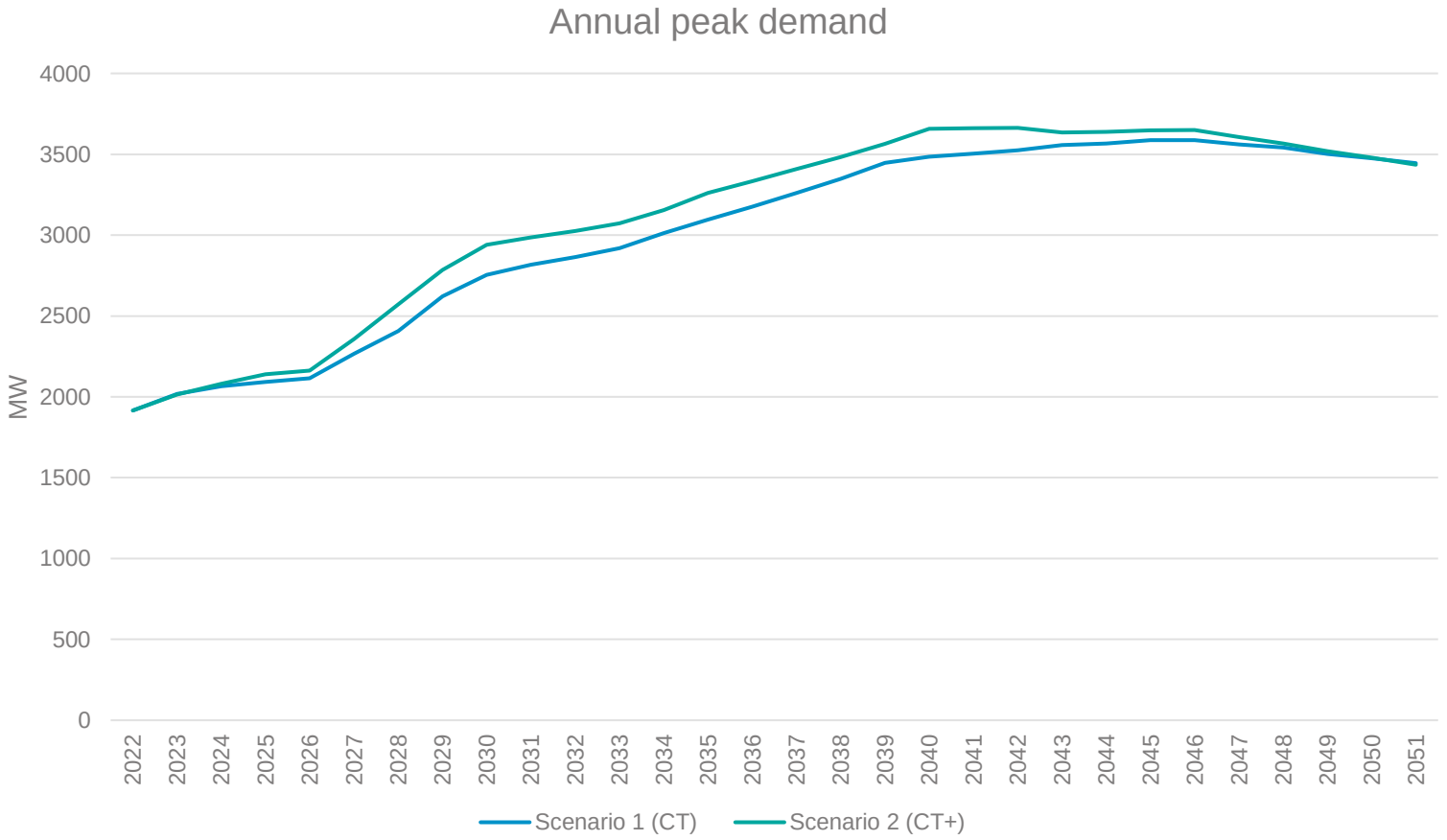


Input assumptions are drawn from PETA modelling. New load comes from:

- CT: industry announced plans for decarbonisation. Mine haulage electrification, onside electricity at LNG plants, growth of lithium mining sector. Modest hydrogen export consistent with AEMO Step Change scenario.
- CT+: a portion of potential new industrial demand at the Maitland, Boodarie, Ashburton strategic industrial areas. CCS facilities for emissions in LNG and chemical sectors.

The peak load will increase significantly…

Chart shows underlying operational peak demand excluding flexible load, for the whole modelled area.

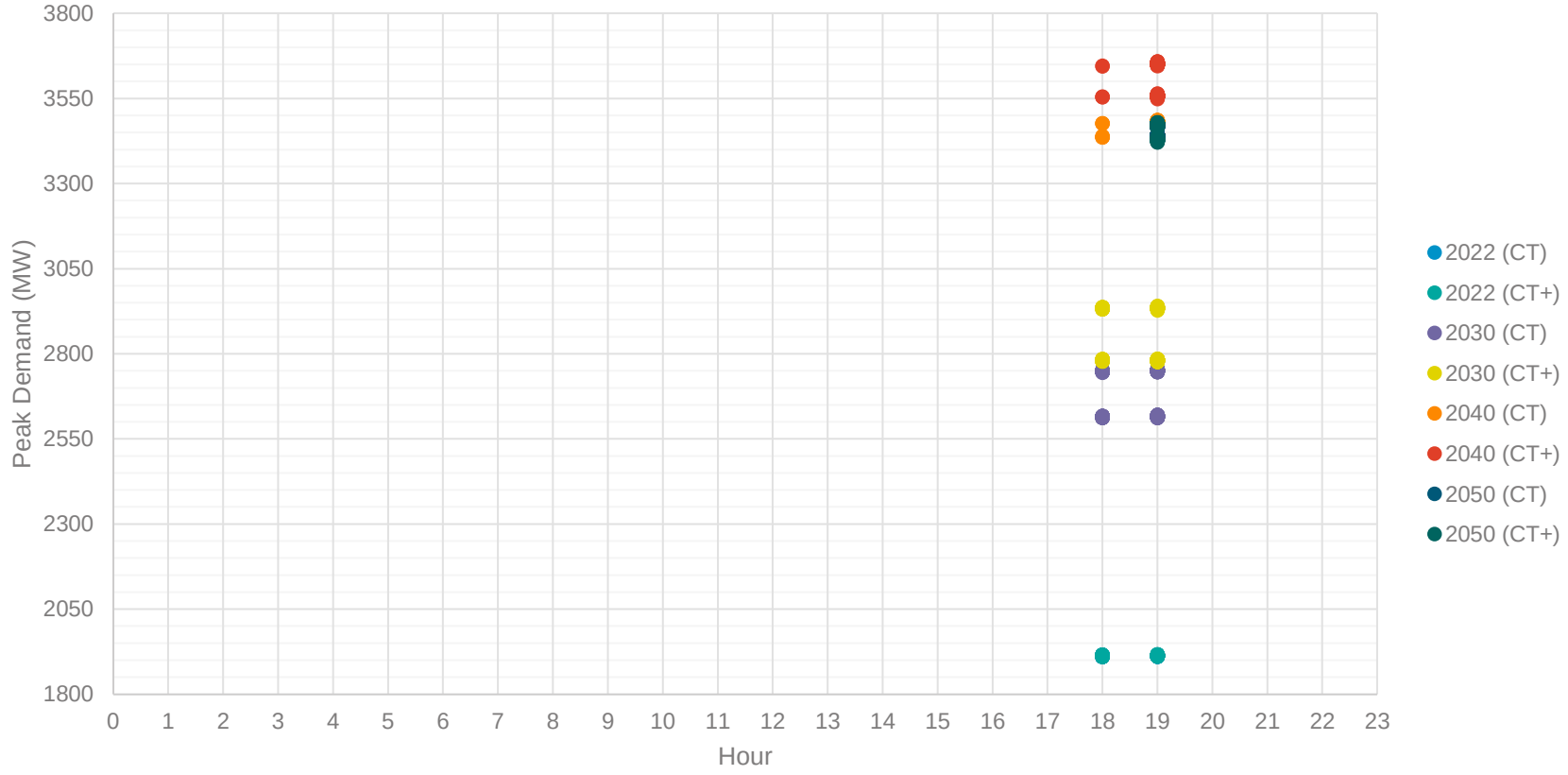


… but timing remains similar.

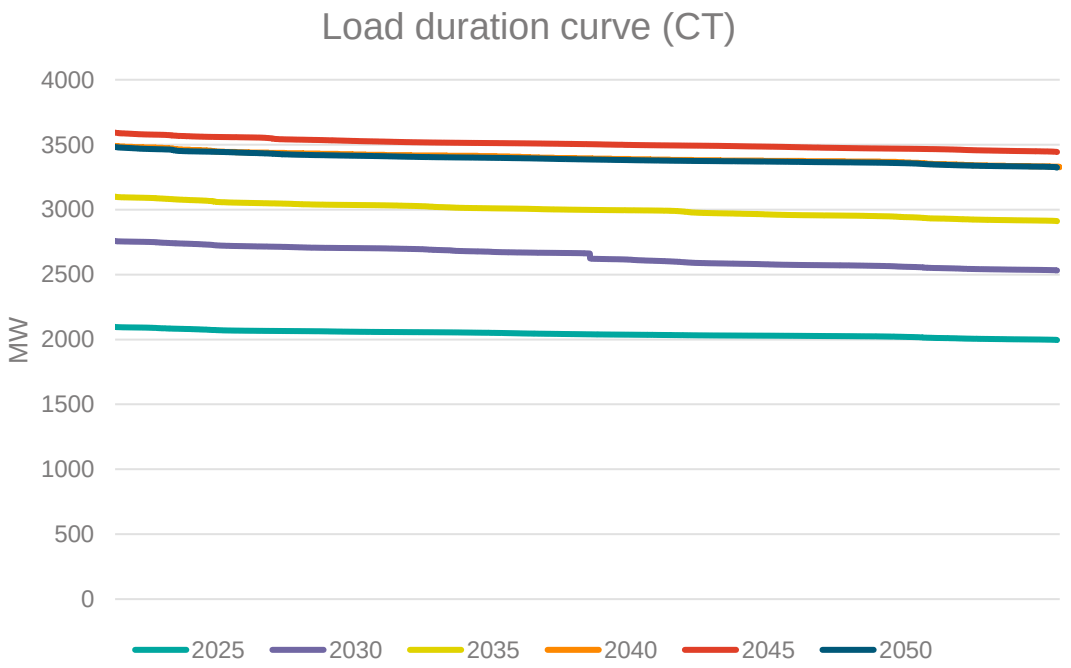
Minimal load volatility means minimal difference season to season.

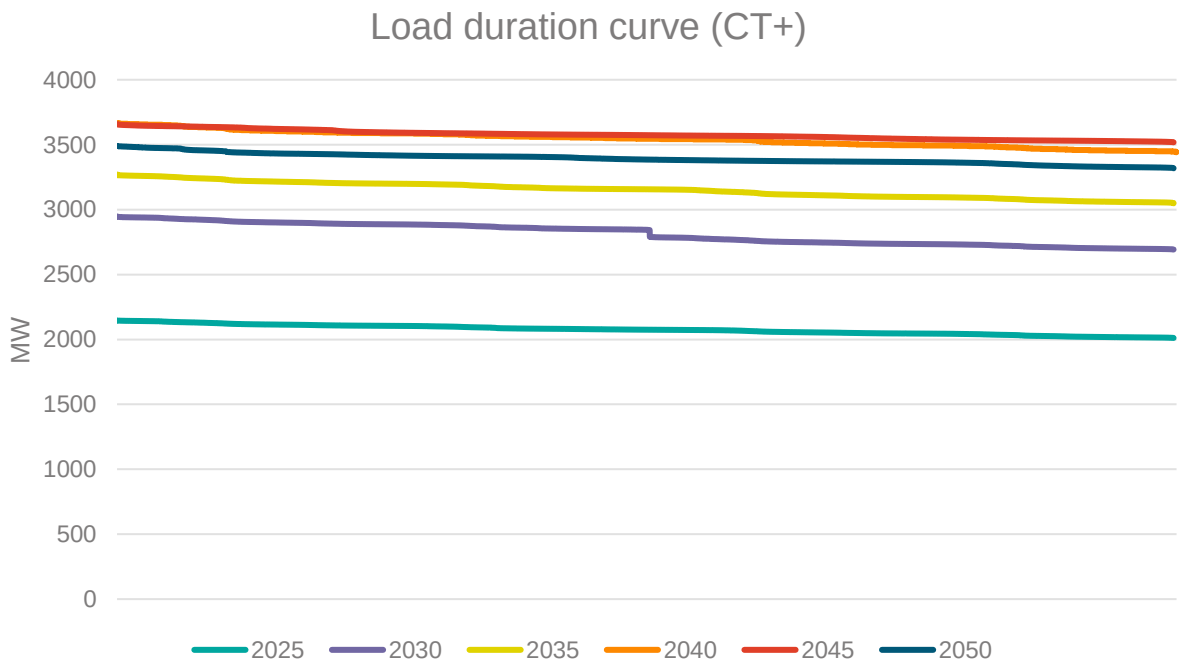
Timing of the peak remains in the early-mid evening.

Chart shows timing and magnitude of daily peak demands for selected years, for the whole study area.



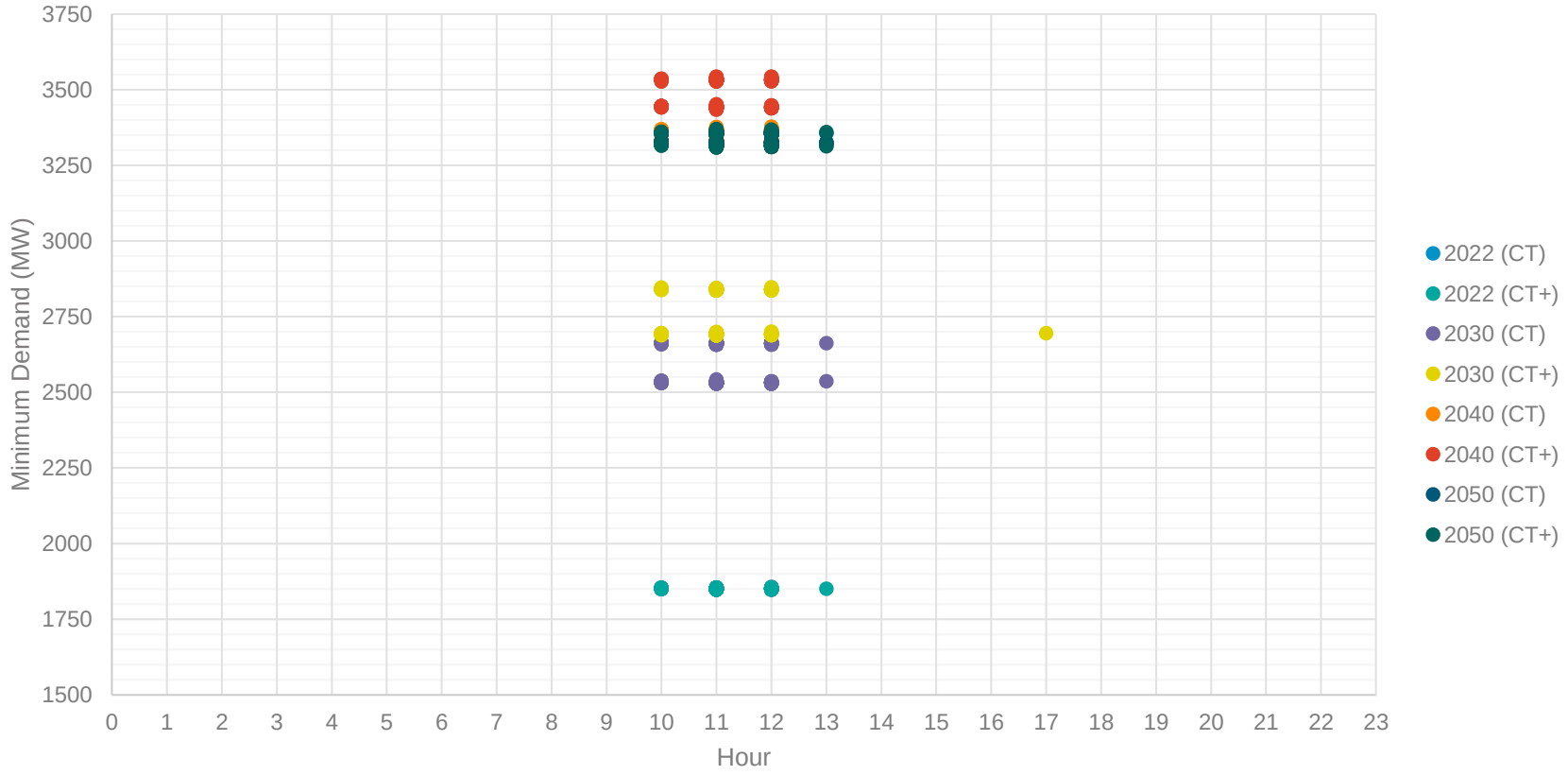
Underlying Load Duration Curve remains much flatter than other systems…





…so minimum demand is unlikely to be a problem

Chart shows timing and magnitude of daily minimum demands across the whole study area for selected years. The Pilbara has minimal temperature dependent load, and minimal uncontrolled non-utility scale solar, we do not see a “duck curve” in the underlying load.



7. Changing supply

Intermittent swing will require flexible support

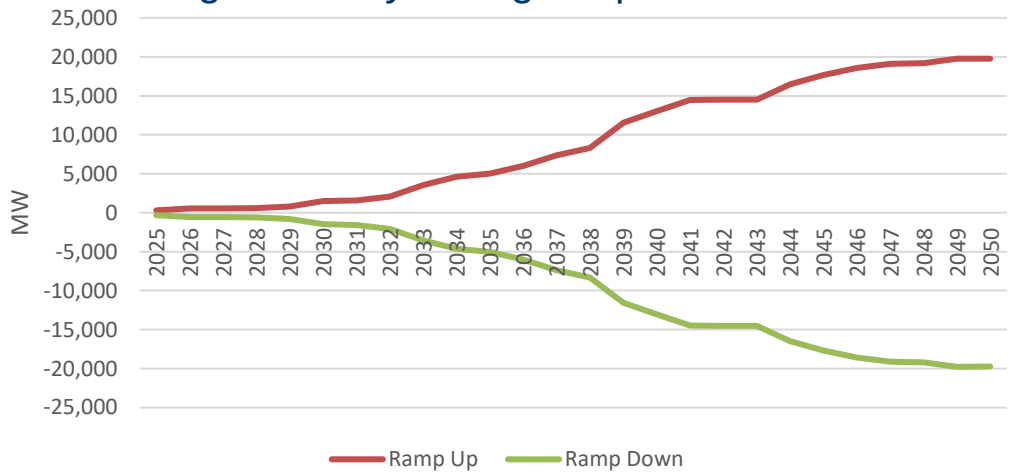
Even with minimal underlying demand volatility, the future system will face significant variability from grid connected generation.

The large solar fleet means a large, relatively predictable change in available generation in the mornings and evenings with the sun.

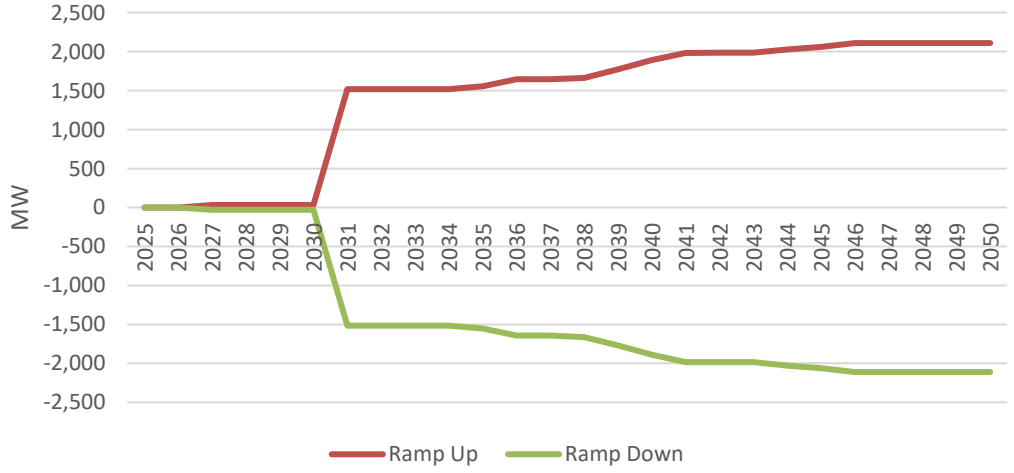
The wind fleet is smaller in size, but its output changes may be less predictable.

The charts show the size of the largest hourly change in potential (i.e. pre-curtailment) variable renewable output for each year of the modelling horizon in scenario 1C.

Largest hourly change in pre-curtailed solar output



Largest hourly change in pre-curtailed wind output



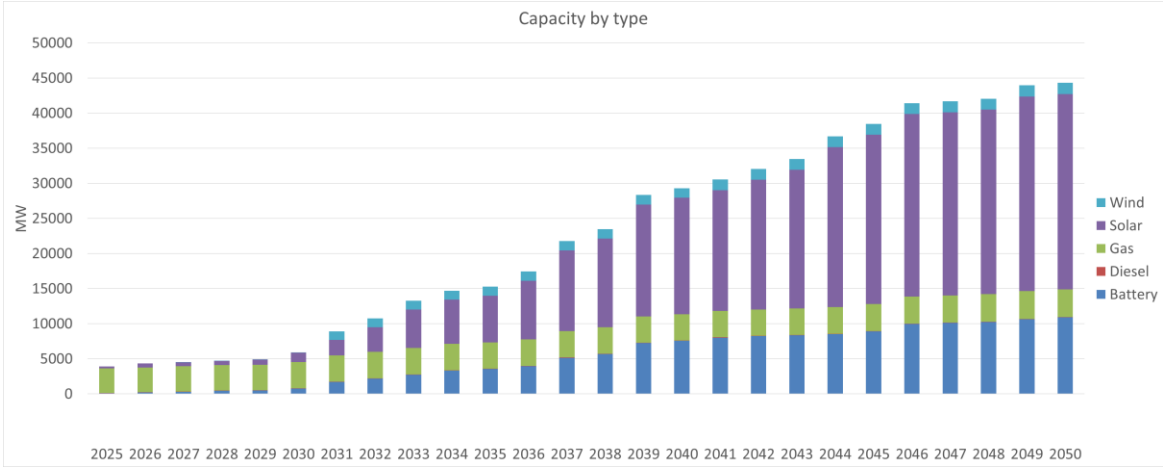
Capacity mix

In a high renewable future, significant overbuild is needed to account for the intermittent nature of the facilities, and carbon emission targets.

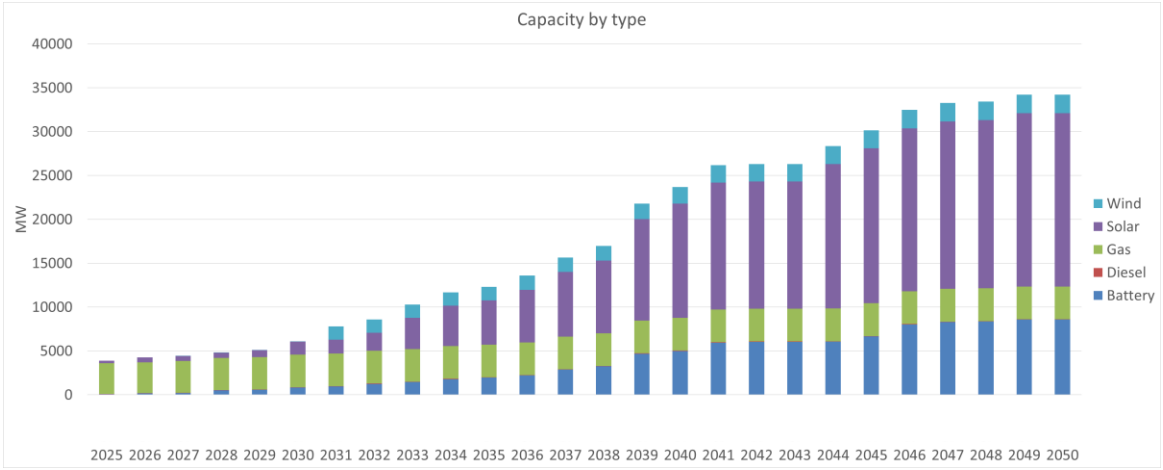
Storage forms an integral part of the mix to distribute intermittent capacity to other parts of the day.

Scenario 1A (non-integrated) requires around 30% more capacity than scenario 1C (fully integrated).

Scenario – 1A



Scenario – 1C

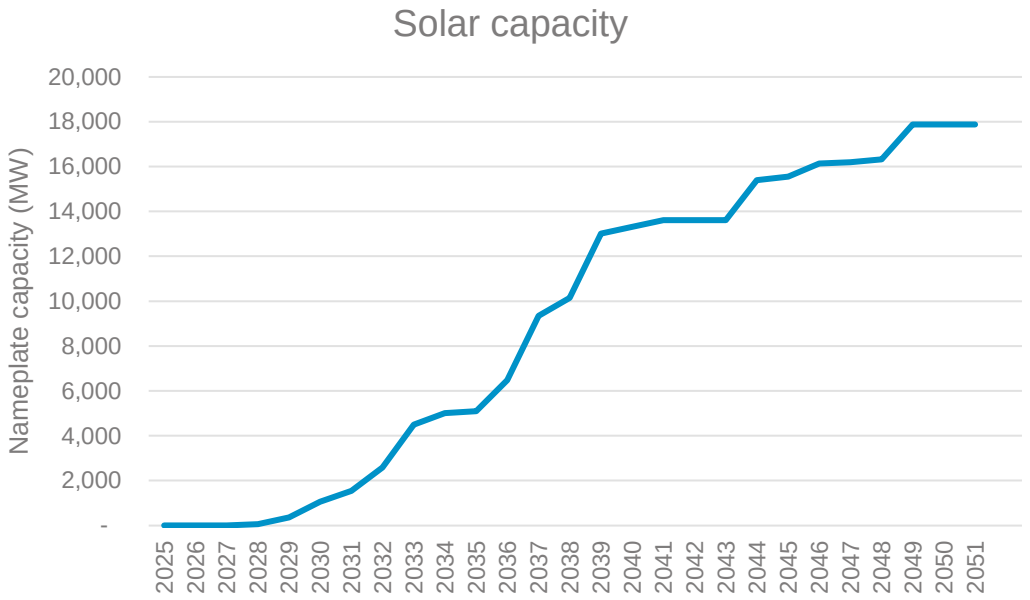


The largest contingency will be intermittent volatility

The largest credible contingency in the NWIS today is around 60MW.

In the future, the largest contingency on the system will be sudden loss of output from intermittent renewable facilities.

In the SWIS, over a half hour trading interval, unpredictable output changes have reached 20% of installed solar capacity.



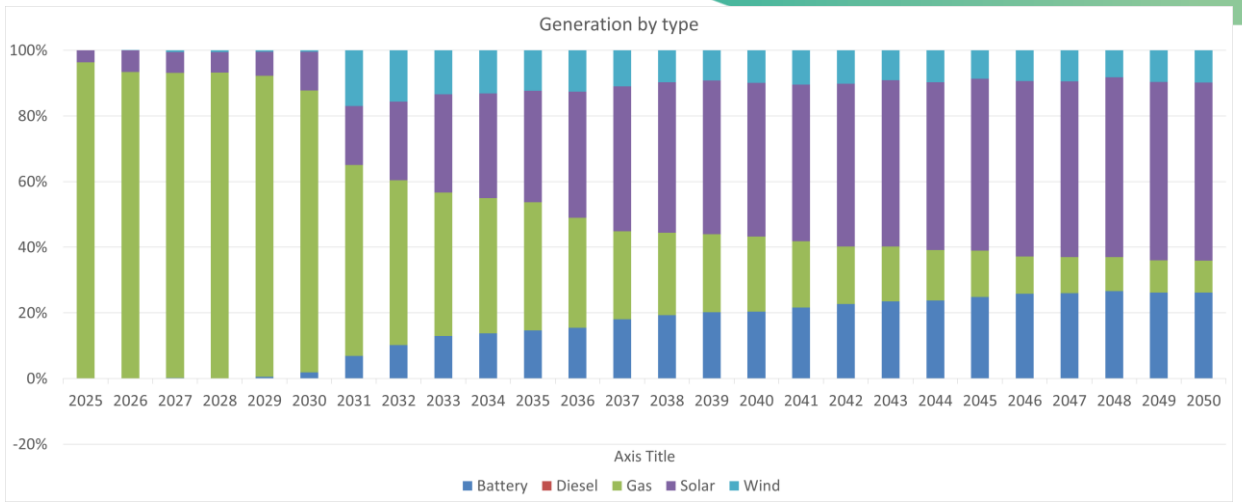
Generation mix

In both scenarios, thermal generation drops steadily to meet the assumed emission targets.

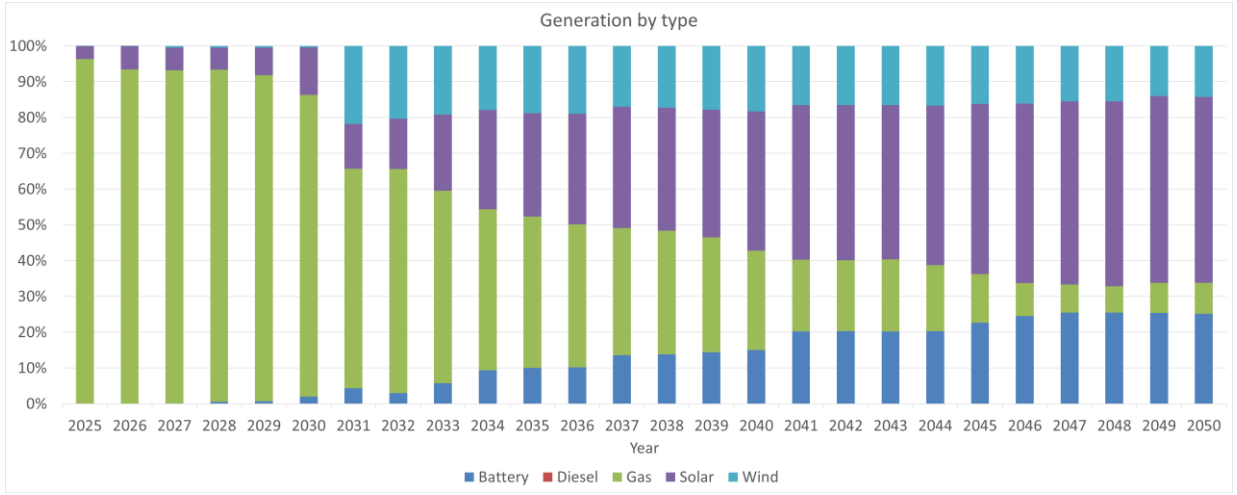
1A has more thermal generation because each party's load must be met by dedicated generation.

Since in 1C the new renewable resources can be shared, the system is less reliant on the thermal facilities.

Scenario – 1A



Scenario – 1C



8. Other matters for PNR Review (stage three)

Issues from HTR workstream

The HTR working group has identified several issues relating to governance and process, to be addressed in the PNR review:

- NSP to NSP connection arrangements
- Process for new transmission connections, including cost allocation
- Responsibility for setting system strength requirements
- Definition and use of “energisation” and “commercial operations”
- Definition of metering obligations for managing EBAS obligations
- ESS cost allocation
- Responsibilities and process for compliance monitoring, including penalties short of disconnection
- Registration category and requirements for storage facilities

Issues from PNR workstream

PNR working group meetings have also identified issues that won't be informed by modelling:

- A reliability standard for the network as a whole
- Load shedding order
- Managing outages - avoiding scheduling clashes in a world where people share generation.

In parallel with the modelling activity, EPWA is commencing a review of the governance framework of the PNR, including that of the ISO.

- stakeholders have identified concerns with the governance arrangements which may pose risks with respect to competition law compliance
- the review of the governance arrangements will also address matters related to transparency and independence of decision-making, amongst others

What other issues are there that will may not be identified in the modelling activity?

9. Next steps

Next steps

Run remaining scenarios

Prepare for detailed PNR review, including governance aspects

Upcoming meetings:

- **10 June** – PNR workstream meeting: discuss final scenario outputs
- **20 June** – PAC meeting

Questions or feedback can be emailed to energymarkets@dmirs.wa.gov.au

We're working for Western Australia.