

# Non-Co-optimised Essential System Services Trigger Submission

Network Support Services for Geraldton area  
Submission to the Coordinator of Energy

Public

3 July 2025



## NCESS assessment template

Organisation: Western Power	Date: July 2025
<p><b>Summary of proposal:</b></p> <p>Western Power is seeking Network Support Services (NSS) to resolve a minimum demand issue in the Geraldton area. There are times when planned or unplanned 132kV line outages will require this part of the grid to be islanded which may then result in a locational operational constraint of a minimum demand situation. The local baseload generation required for stable operation when islanded, is up to 10MW, thus requiring sufficient baseload for stable operation.</p> <p>The proposed procurement will continue to inform the development of Western Power’s internal Non-Cooptimised Essential System Services (NCESS) process for the procurement of NSS, and support Energy Policy WA (EPWA) with any amendments to the NCESS framework to facilitate the ongoing and efficient procurement of NSS through the framework. These activities form part of the DER Roadmap core actions (Action 24c) and will enable the foundational virtual power plant (VPP) service provision of NSS by 2025.</p> <p>The proposed procurement event reinforces Western Power’s commitment to developing its Distribution System Operator (DSO) capability and will help strengthen the process through which services will be provided as part of Western Power’s business-as-usual planning and operation. Western Power expects that procurement activities of this nature will expand in alignment with its internal capability and process development, including network visibility, the application and monitoring of Dynamic Operating Envelopes and the digital management of non-network contracts.</p> <p>Please refer to section 1.1 of this submission for further information.</p>	
<p><b>Trigger for assessment:</b></p> <p>Western Power has the location defined on the distribution network where minimum demand issue may be addressed through orchestrated DER and demand side management solutions as an alternative option to major augmentation or new network facilities investment. Please refer to section 1.4 of this submission for further information.</p>	
<p><b>Formal assessment:</b></p> <p>Western Power is seeking expressions of interests from potential NCESS providers to determine the most cost-effective option to address the minimum demand issue in the Geraldton area during the time when the grid in this location needs to be operated in island. Western Power will consider both orchestrated DER and demand side management solutions. Please refer to sections 1.4 - 1.6 of this submission for further information.</p>	
<p><b>Consultation:</b></p> <p>Western Power has consulted with EPWA and AEMO as required by clause 3.2.1 of the NCESS Guideline. Outcomes from this engagement have been included in this submission and this submission is made with the support of both EPWA and AEMO. Please refer to section 1.8 of this submission for further information.</p>	
<p><b>Services required:</b></p> <p>Western Power is seeking to procure NSS in the Geraldton area within Western Power’s distribution network. The proposed service is required from the beginning of the 2026 calendar year till the end of the 2028 calendar year with an option to extend. The timing of commencement of the proposed services will be refined through this NCESS process, including through input from potential service providers. Please refer to section 1.4 of this submission for further information.</p>	
<p><b>Attachments:</b></p> <p>Not included.</p>	

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# 1. Network Support Services

## 1.1 Proposal

Western Power is provided guidance through the Access Code on how it procures and makes network investments. The DER Roadmap recognised that as network challenges resulting from Distributed Energy Resources (DER) intensify, and as innovative DER solutions emerge, the Access Code and network investment process must evolve to leverage new opportunities. On 18 September 2020, EPWA implemented a range of changes to the Access Code facilitating better procurement of non-network solutions to address network issues.

A NSS is a contracted service provided by a generator, retailer, DER aggregator or customers to the network operator/DSO (Western Power) to help manage or solve localised network constraints.

A NSS could alleviate distribution constraints including reverse power flow and/or local voltage issues identified by the DSO at a cost that is less than traditional augmentations such as larger transformers, more 'poles and wires' or otherwise expanding capacity.

The past two years has seen delivery of several DER Roadmap achievements and milestones. Significant among them was the completion of the roll out of the end to-end VPP pilot, Project Symphony, and the maturation of the DER Orchestration Roles and Responsibilities. There is now clarity on the technical and regulatory infrastructure needed to enable DER integration and full market participation.

This NCESS process will enable VPPs or large use customers to provide network benefits for electricity consumers, the broader market, and assist in meeting WA's emissions reduction goals.

## 1.2 Trigger

Clause 3.11A.2 of the Wholesale Electricity Market (WEM) Rules requires Western Power to make this submission to request the Coordinator to determine whether to trigger an NCESS procurement process in accordance with section 3.11B of the WEM Rules.

The trigger submission must include sufficient information and analysis to allow the Coordinator to consider the following factors outlined in clause 3.11A.7 of the WEM Rules:

- (a) the extent to which an NCESS will address the issue;
- (b) the extent to which an NCESS will minimise costs in the WEM;
- (c) the relative merits between procuring an NCESS or augmenting the network;
- (d) whether it is suspected that there is a potential exercise of market power;
- (e) whether the procurement of an NCESS is consistent with the State Electricity Objectives; and
- (f) whether procurement of an NCESS will be in the long-term interests of consumers.

This trigger submission summarises Western Power's assessment of the need for additional non-network services in the Geraldton area as an alternative option to major augmentation or new network facilities investment.

## 1.3 Background

Western Power continues to maintain its transmission and distribution networks to ensure reliable supply to the community. Continuing high levels of DER installation are leading to higher than ever exports onto the Grid and leading to more pronounced minimum demand days. This presents an ongoing risk to Grid operational stability and can be exacerbated where there is a high concentration of DER in a localised area.

High levels of DER exports can lead to the increased risk of customer outages as well as non-compliance with the current Technical Rules under the Access Code. Western Power is managing this risk through its implementation of the DER Roadmap and Project Jupiter, specifically through the introduction and implementation of Dynamic Operating envelopes (DOE). DOEs will provide the function of increasing and decreasing customer export limits to both support capacity provision at peaks / curtail DER exports and maintain limits within Grid thermal and voltage limits. It is expected that DOEs will be fully implemented for new / upgrade DER connections by the end of 2028.

Western Power is required to seek the most prudent and efficient solution to resolve any network risks or constraints. As a result, Western Power assesses a range of non-network and network options, including whether these options can meet the scale and timing of identified network need.

Western Power recognises the medium to longer term need to support the emerging NSS market in a way that enables the vision of unlocking DER capability and value in the Southwest Interconnected Network (SWIS) through Western Power's role as the DSO.

The importance of unlocking DER capabilities in mitigating the network capacity risk has been reinforced as a high priority as for Western Power these capabilities may:

- offer more cost-effective alternate solutions
- buy time for longer lead network investment, lowering network outage risks, and
- complement network investments, reducing their scale and cost.

Western Power seeks to provide the market with opportunities for NSS to support gradual market development in delivering viable non-network solutions.

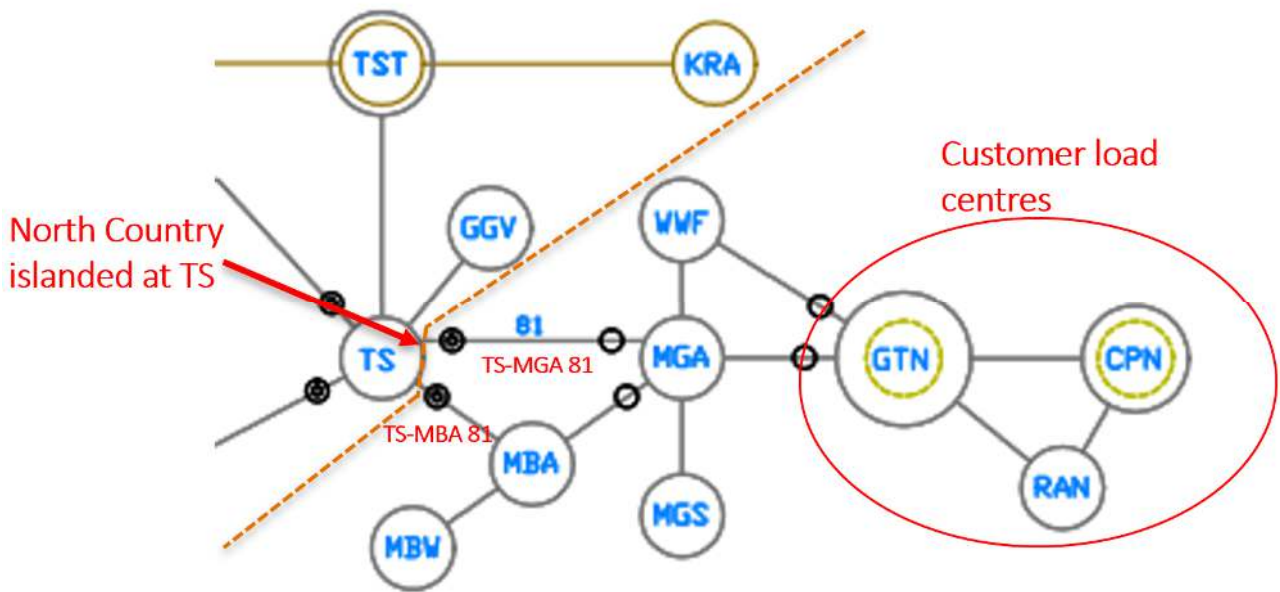
This procurement event is in line with Western Power's commitment to the DER Roadmap with the objective of NSS to help test and strengthen the process through which services will be provided through the NCESS process as part of Western Power's business-as-usual planning and operation. DER Roadmap Action item 24c states that by the end of 2025 Western Power will have developed its internal NCESS process for the procurement of NSS delivered by aggregated DER with consideration of criteria to procure and standardise services.

Western Power expects that procurement activities of this nature will grow in alignment with Western Power's internal capability and process development, including network visibility, the application and monitoring of Dynamic Operating Envelopes and the digital management of non-network contracts as Western Power build its DSO capability.

## 1.4 Services required

Western Power seeks to procure, in the event that the Coordinator decides to trigger an NCESS procurement process, NSS in the Geraldton area, within Western Power's distribution network. The required service is the capability to curtail DER exports onto the Grid or increase demand at times of minimum demand during the times when this part of the network needs to be operated in island i.e. when the supply on both TS-MBA 81 and TS-MGA 81 transmission lines are interrupted.

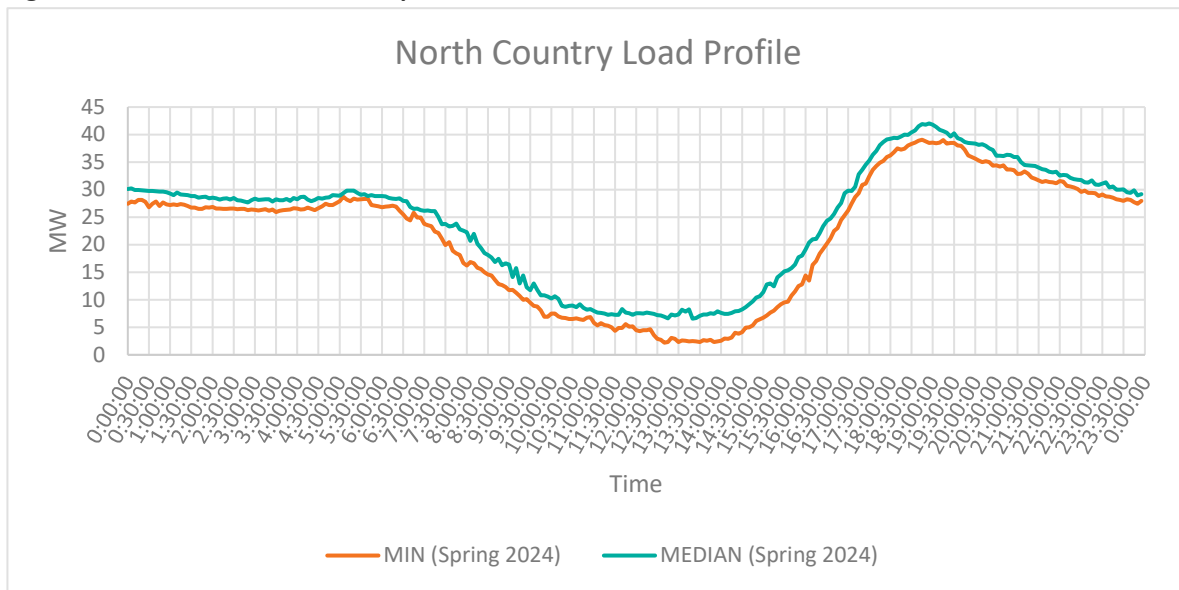
Figure 1.1: Geraldton Load Area Single Line Diagram



An outage on the transmission circuits supplying the Geraldton load area necessitate the need to run this part of the network as an island supplied by the Mungarra Power Station as shown in figure 1.1. A minimum demand of 10MW is required at this power station for operational stability. Outages are typically over several business days multiple times per year.

On minimum demand days, typically in Spring and Autumn, the demand can be as low as 2MW as shown in Figure 1.2. In the event of a transmission outage, with the need to form an island, and where the demand is forecast to be less than 10MW, the NSS (the subject of this trigger submission) will be required. The NSS will be seeking for DER export curtailment or demand increase up to ensure operational demand in the region is maintained above 10MW. A demand forecast for the region will be used to inform the service duration and quantity in the service specification.

Figure 1.2: Geraldton area demand profile



Note: The above demand profile is the average demand profile for typical Spring minimum demand days. Minimum demand days occur over the Spring, Summer and Autumn months.

The proposed NSS contract term is required from the 1<sup>st</sup> January 2026 till the end of the 2028 calendar year with availability in the minimum demand periods (Spring, Summer and Autumn months). Western Power will seek to gain industry feedback through a registration of interest step on any benefits associated with a different contract term or a change to the commencement date.

The quantity of service will be set at the forecasted export curtailment required / increase in demand for 2026-2028 minimum demand periods, as listed in Table 1.1.

**Table 1.1: Service curtailment / demand power requirements**

Service	Active Power range	Activation period	Availability
DER export curtailment	Up to 10MW	8:30AM – 4:30PM	Forecast minimum demand days
Demand increase	Up to 10MW		

Note: The above are discrete services and could be provided concurrently under this NSS.

The proposed service will be activated between the hours of 8:30AM and 4:30PM AWST or parts thereof. The service will need to be available for any day (likely business days) in the minimum demand period, with the NSS being called on as a priority to any other services contracted. The contracted service is expected to be called upon no more than 10 days each calendar year for a duration up to a maximum of 7 hours per event aligned with the profile in figure 1.2. Activation will typically be with 3 days advance notice. Multiple providers for this service will be considered for both the duration and the service quantity.

If the Coordinator decides to trigger an NCESS procurement process, the draft NCESS Service Specification, released alongside a call for registration of interest, would outline the full requirements for these services.

## 1.5 Analysis

The data used for this analysis is based on the collective load supplied by the zone substations (Chapman, Geraldton and Rangeway) in the Geraldton load area during Spring 2024 starting from 1 Sept 2024 to 30 Nov 2024. Minimum demand days typically occur over the Spring, Summer and Autumn months.

## 1.6 Merits of a non-network solution versus network build

Western Power considers a non-network solution in Geraldton area identified may be the most suitable and cost-effective option to address the minimum demand risk for the Geraldton load area in the short to medium term, specifically:

- a non-network solution that aggregates behind the meter DER to curtail exports.
- a non-network solution from large use customers by increasing behind the meter load.

A network build to address the minimum demand situation, described in section 1.4 is has not been planned at this stage, however, would be a significant investment driven by a large increase in demand in the area. At this stage a suitable solution would likely include a 330kV extension from Three Springs and the establishment of a new terminal in the Geraldton area to resupply the existing substations as well as new demand.

## 1.7 Other Factors for Consideration

This section presents relevant analysis to enable the Coordinator to consider the extent to which an NCESS will meet factors under clauses 3.11A.7(c) – (f) of the WEM Rules:

- the relative merits between procuring an NCESS or augmenting the network;
- the outcome of any investigation of behaviour that reduces the effectiveness of the market, including behaviour related to market power;

- whether the procurement of an NCESS is consistent with the State Electricity Objectives; and
- whether procurement of an NCESS will be in the long-term interests of consumers.

#### **1.7.1 Considerations under 3.11A.7(c)**

The relative merits between procuring appropriate market services and relevant network augmentation options are considered in section 1.6 of this submission.

#### **1.7.2 Considerations under 3.11A.7(d)**

Western Power is not aware of any market power aspects relating to the identified trigger.

#### **1.7.3 Considerations under 3.11A.7(e)**

Western Power considers that the mitigation of the issue identified in this submission is consistent with the State Electricity Objectives, specifically:

- a service specification can be developed such that the services can be delivered by a range of technologies, meeting the State Electricity Objective in clauses 1.2.1(c).
- the NCESS procurement process will ensure the cost of the service is as efficient as possible, meeting the State Electricity Objectives in clauses 1.2.1(a), (b) and (d).

#### **1.7.4 Considerations under 3.11A.7(f)**

Western Power considers that the mitigation of the issue identified in this submission is in the long-term interest of consumers as the service will ensure reliable and secure supply as required by the minimum reliability standards.

### **1.8 Consultation**

Western Power has consulted with EPWA and AEMO as required by section 3.2 of the NCESS Guideline (published in accordance with clause 3.11A.2A of the WEM Rules) and met the requirements of clause 3.11A.2(f) of the WEM Rules. This submission is made with the support of both EPWA and AEMO and reflects the consultation outcomes.

**2. Schedule 1 – Redacted**