



Endeavour
Energy



15 September 2022

Mr Hrishikesh Desai
Chief Data Strategist
Australian Energy Regulator (AER)
NetworkVisibility@aer.gov.au

Dear Mr Desai,

Response to the AER's Benefits of increased visibility of networks – Consultation Paper

Ausgrid, Endeavour Energy and Essential Energy (NSW distribution network service providers (DNSPs)) thank the Australian Energy Regulator (AER) for the opportunity to provide a submission on its *Benefits of increased visibility of networks – Consultation Paper (Consultation Paper)*.

NSW DNSPs strongly support the network visibility project's objectives to make specific network-related data sets available to the market and policy makers. Access to this data allows for optimised decision-making and network management, which can lead to the development and adoption of innovative consumer products and services. This joint submission of the NSW distribution businesses makes the following three important points:

1. There is a widely held misconception that all DNSPs have extensive access to data on the performance of their low voltage (LV) networks.
2. There are likely to be benefits to sharing the data referred to in Consultation Paper, if we had access to it, or were able to obtain it at reasonable cost.
3. A framework for data access should be developed that enables data to be accessible and shared on a reasonable cost basis.

Attachment A provides our feedback on the availability of datasets described in the Consultation Paper (A.1). It also recommends that the AER develops a data framework (A.2), outlines our 2024-29 customer energy resource (CER) expenditure plans to gain improved access to network-related information (A.3), and lists for reference our responses to past AER data requests (A.4). We welcome the opportunity to discuss any aspect of this submission. Please contact for:

- Ausgrid: Shannon Moffitt at [REDACTED]
- Endeavour Energy: Patrick Duffy at [REDACTED] and [REDACTED]
- Essential Energy: Adam Young at [REDACTED]

Yours sincerely,

Fiona McAnally
A/g Head of Regulation
Ausgrid

Colin Crisafulli
General Manager – Customer
and Future Grid
Endeavour Energy

Hilary Priest
A/g Head of Regulatory Affairs
Essential Energy

Attachment A.1: Availability of datasets identified in the Consultation Paper

General comments on the datasets identified in the Consultation Paper are noted in the table below, followed by observations on specific metrics.

General comments	
Our current state	<p>NSW DNSPs current capabilities on the following key metrics need to be clarified:</p> <ul style="list-style-type: none"> • Temporal: real or near real-time outage data is not available for our LV networks. • Outage information: we primarily rely on customer calls and complaints to be notified of localised outages (see Essential Energy case study below). • Analytical capabilities: many of the datasets mentioned in the Consultation Paper can require several days of desktop studies to produce without funding to improve existing IT capabilities. • 2024-29 resets: we have developed expenditure plans to improve our data capabilities over the 2024-29 regulatory period which are subject to AER approval (see Attachment A.3 below).
AEMC's review only provides access to basic data at no cost	<p>The AEMC's <i>Final Report: Review of the regulatory framework for metering services (Final Metering Report)</i> recommends that basic Power Quality Data (PQD) should be provided to DNSPs once every 24 hours free of direct charge. It is important to recognise that PQD would not:</p> <ul style="list-style-type: none"> • Facilitate emerging network needs such as Dynamic Operating Envelopes; or • Provide real-time fault detection and outage management (critical for life support customers) <p>To meet the needs of the future network over the coming 2024-29 period and beyond, the NSW DNSPs will require 'advanced' PQD that is costly and subject to AER approval as part of our 2024-29 opex proposals.</p>
The cost of acquiring outage and network performance data is driven by the existing market structure	<p>The Consultation Paper infers that networks can acquire data from smart meter providers. NSW DNSPs wish to clarify that the cost of this data needs to factor in the current market structure whereby:</p>

	<ul style="list-style-type: none"> Meters generate their own unique dataset that is collected by a single meter data provider (MDP); and Knowing that they have access to a unique dataset at each site, an MDP may have an incentive to charge the highest price possible. The NSW Government’s response to its Electricity Supply and Reliability Checkup will place obligations on NSW DNSPs to publish spatial information regarding the hosting capacity on their networks, which will require data. 		
<p>Case study: Essential Energy</p>	<p>Essential Energy has 140,153 distribution substations, of which only 13 are currently monitored in real time, meaning that we rely on customer calls to alert us to localised outages. If an outage occurs in the middle of the night, we may not know until many hours after the outage has occurred.</p> <p>Note that we have better visibility at high voltages with access to real time data for all 339 zone substations in our network, allowing for an immediate response if there is a loss of power at the zone substation level. Essential Energy has also put forward an expenditure plan to the AER as part of the 2024-29 reset, to install an additional 25,000 monitors to improve LV network visibility.</p>		
Comments about specific datasets			
Dataset	Current capability		More detail
<p>Current and forecast remaining import capability* (kW or kVA), by, season, and by:</p> <ul style="list-style-type: none"> HV Feeder (HVFed) and Distribution substation (DxSub). 	Ausgrid	Ad hoc	Import capacity identified based on global risk studies that can take a few days or several months depending on complexity.
	Endeavour	Not available	Not available at distribution substation level.
	Essential	Limited	Forecast of demand available on feeder, but forecasts of hosting capacity not yet available.
<p>Network augmentation plans* by:</p> <ul style="list-style-type: none"> HV Feeder and Distribution substation. 	Ausgrid	Ad hoc	We publish high level plans in DTAPR.
	Endeavour	Ad hoc	Analysis is undertaken when there is an identified need.

	Essential	Ad hoc	HV Feeder included in DAPR.
Indicative annual deferral value (\$/kVA)* by: <ul style="list-style-type: none"> • HV Feeder and • Distribution substation 	Ausgrid	Possible	Possible, but other factors need to be considered e.g the timing and location of the demand reduction, reliability issues and fault detection.
	Endeavour	Not BAU	Deferral costs are estimated as part of the cost benefit analysis for each prospective project once there is an identified need.
	Essential	Possible	Available with project information.
Current and forecast remaining export capability* (kW): <ul style="list-style-type: none"> • Static limit on export capability (based on POE90 forecast of demand and POE10 forecast of export); or • Export capability, varying by season, period of day (e.g., early morning, morning, daytime, afternoon, evening, overnight) 	Ausgrid	Labour intensive	<p>Running our model to provide this data requires:</p> <ul style="list-style-type: none"> • a month to prepare the input data; • 2-4 weeks to run the analysis; and • a further 2-3 months to analyse the results. <p>Each risk identified then requires a planning study ranging from 4 hours to 3 months depending on the complexity of the issue.</p> <p>Note that the current system only looks at maximum and minimum export capability. Considerable upgrades in the speed of the system and our customer level forecasts (agent-based approach) are required to produce variable export capacity for season and time of day.</p>
	Endeavour	Unavailable	Unavailable but static limits provided under connection agreement.
	Essential	Unavailable	Variable export capability unavailable.
Hosting capacity plans* by: <ul style="list-style-type: none"> • HV Feeder; and • Distribution substation. 	Ausgrid	Unavailable	Not available under current capabilities.
	Endeavour	Unavailable	
	Essential	Unavailable	

Attachment A.2: A framework for network visibility

General principles	
Principle	Overview
NSW DNSPs support sharing data but we need better access	<ul style="list-style-type: none"> • Sharing data about our network is likely to offer significant benefits, which the NSW DNSPs want to facilitate; • Before networks can share smart meter data, we need to have access to it on commercially reasonable terms; • Gaining access to smart meter data on commercially reasonable terms can be difficult due to: <ul style="list-style-type: none"> ○ Current market structure (MDPs owning the unique dataset produced by each metering installation); and ○ Lack of an agreed format for data delivery.
Standards for smart meters	<ul style="list-style-type: none"> • Networks should be able to set minimum data standard for smart meters. The data generated from these capabilities could then be offered to other market participants. <ul style="list-style-type: none"> ○ For example, if a network was to stipulate that smart meters in its service area had to have certain capabilities such as 'last gasp', it would enable more efficient networking performance monitoring and fault and outage response. • Note that minimum specifications for smart meters are provided in the National Electricity Rules, however these are focussed on the functions required for billing purposes, not network management.
Increased penetration of smart meters is necessary	<ul style="list-style-type: none"> • We support the objectives of the Consultation Paper, of which most require greater penetration of smart meters. • The AEMC has outlined a target for smart meter penetration of 100 percent by 2030. NSW DNSPs support this target and want to play a greater role in addressing the barriers to an accelerated rollout.
Data delivery format	<ul style="list-style-type: none"> • NSW DNSPs support the Consultation Paper's ambition for networks to provide data in a machine-readable format. • Any standardisation of data formats must consider diversity of IT and data warehousing and management systems. • DNSPs will need to co-design that data format, delivery mechanisms and timing, with some degree of flexibility according to network capability.

Attachment A.3: 2024-29 expenditure plans to improve data capabilities

Summary of expenditure plans (real FY24)	
Overview	<p>NSW DNSPs 2024-29 CER proposals aim to:</p> <ul style="list-style-type: none"> • Make it easier for customers to participate in voluntary demand response programs and/or earn incentives through tariffs • Improve visibility of existing and emerging network constraints so they can be resolved and the network can be managed more dynamically and efficiently • Improve the ability of non-CER customers to access and benefit from excess solar energy • Improve our ability to work with CER customers, aggregators and Virtual Power Plants (VPP) to coordinate and optimise flexible loads • Increase resilience for customers in areas where local generation and CER can be utilised to reduce frequency and duration of outages.
Ausgrid	<p>Our 2024-29 funding proposal to the AER includes:</p> <ul style="list-style-type: none"> • \$24.9m investment in increased smart meter data; • \$7.2m in network modelling uplift to utilise increased network visibility; and • \$12.1m investment in dynamic services underpinning our Distribution System Operator (DSO) strategy. <p>We estimate that our proposal will unlock \$150m in energy market benefits and support the urgently needed increase in CER orchestration highlighted in AEMO's 2023 Electricity Statement of Opportunities.¹</p>
Endeavour	<p>Our 2024-29 funding proposal to the AER includes:</p> <ul style="list-style-type: none"> • \$14.2m to acquire additional smart meter data; • \$45.0m to establish a low voltage visibility platform capable of supporting two-way energy flows and DSO functions in line with regulatory reform <p>Among other things, our investment plan will put downward pressure on prices and reduce emissions by hosting more CER on our network.</p>
Essential	<p>Our 2024-29 funding proposal to the AER includes:</p> <ul style="list-style-type: none"> • \$16.0m to acquire smart meter data; • \$21.0m for real-time monitoring in local network areas; • \$66.0m for data management systems to integrate network visibility assets and data for real-time monitoring for basic DSO capabilities. <p>These investments will enable Essential Energy to flexibly manage constraints on our network and to encourage customers to utilise their CER in a manner that provides benefits for themselves and the network, particularly as more CERs come online.</p>

¹ <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/nem-forecasting-and-planning/forecasting-and-reliability/nem-electricity-statement-of-opportunities-esoo>

Attachment A.4: NSW DNSP responses to AER information requests

Date	AER Request/consultation	Data provided
May 2022	Export Services Metrics	CER counts, capacity, quality of service by HV feeder. Historical export customer numbers and volumes. Historical CER integration expenditure.
September 2022	Incentivising and measuring export services performance Consultation Paper	NSW DNSPs made submissions highlighting the limitations of existing data and insufficient historical data
October 2022	2024-29 Regulatory Reset Capex	NSW DNSP export services data to Reset Capex teams covering FY20 to FY22.
October 2022	Additional Export Services Metrics	Export service data for FY21 and FY22 covering: constraints, customer numbers, approved capacity, inverter capacity, static zero limits and related complaints. Limitations included ability to provide granular complaints data noting that increasing smart meter penetration in future would lessen reliance on complaints data.
November 2022	Network Performance Report	Export services 'straw man' information request template published for consultation covering FY20 to FY22 i.e. the same set of data we provided a month earlier.
December 2022	RINs/RIOs	AER published RIO templates for consultation, which include data requests on export services.
January 2023	Incentivising and measuring export service performance draft decision	NSW DNSPs made submissions highlighting the limitations of existing data for LV visibility
March 2023	Network Performance Report	A new information request template for export services (included an Ausgrid presentation at a workshop).
March 2023	RINs/RIOs	Ausgrid and Essential Energy made submissions on the AER's published RIO templates
August 2023	Further Additional Export Services Metrics	The same information on export service requested in October 2022, but for the FY23 regulatory year plus further additional information on curtailed energy and export limits.