



*Advocating for the people of Western Sydney*

## **SUBMISSION:**

**Endeavour Energy Electricity Distribution Price Review  
(EDPR) for the 2024-2029 period**

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Western Sydney Regional Organisation of Councils Limited.

**12 May 2023**

# 1. About WSROC

The Western Sydney Regional Organisation of Councils (WSROC) represents local Councils in the Greater Western Sydney region. With a reputation for considered policy analysis and bipartisan advocacy, the Western Sydney Regional organisation of Councils (WSROC) Limited brings a collective voice to those issues which are crucial for Greater Western Sydney's growing population.

WSROC welcomes the opportunity to provide a submission in response to Endeavour Energy's Electricity Distribution Price Review (EDPR) for the 2024-2029 period.

This submission is prepared on behalf of WSROC member Councils, and Councils participating in the Western Sydney Energy Program: Blacktown City Council, Blue Mountains City Council, Camden Council, Cumberland City Council, Hawkesbury City Council, the Hills Shire Council, Liverpool City Council and City of Parramatta Council.

Some of our Councils may make their own submissions. This document should be viewed in addition, and complimentary to those responses.

Please note that this submission focuses mainly on issues of greatest concern to our member Councils and is not a comprehensive review of all elements of the proposed EDPR.

WSROC would welcome an opportunity to further discuss this submission. Should there be any questions, please do not hesitate to contact Mr Nic Pasternatsky, Manager, Governance & Procurement on the below contact details.

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Charles Casuscelli  
**Chief Executive Officer**

## 2. Introduction

This document provides a summary of key areas for improvement that relate to the EDPR and more broadly to the Strategic Plans of Endeavour over the coming 5-year period.

WSROC and Councils have a healthy and robust collaborative relationship with Endeavour Energy and are working closely on a range of activities including large scale solar, street lighting LED programs and electrification of transport. As part of its Western Sydney Energy Program, WSROC hosts biannual forums for Councils, Endeavour Energy, and other stakeholders to deliberate on energy and climate related key issues in the Greater Western Sydney region, possible solutions, and opportunities for collaboration moving forward. Specific projects to date have replaced over 110,000 streetlights to LEDs, another 120,000 streetlights to be replaced by 1 July 2024, 1.5MW+ of behind the meter solar installed, and 100% renewable Regional Power Purchase Agreement (PPA) facilitated through Local Government Procurement (LGP).

The recommendations in this document should be considered in light of this collaborative relationship and the EDPR has been taken as an opportunity for Councils to document existing views on strategic opportunities for collaboration as well as for comment on specific areas where improvement or clarification on pricing is sought.

WSROC also participates in Endeavour Energy's Peak Customer and Stakeholder Committee meetings and is an independent member of the Regulatory Reference Group that provides feedback to Endeavour Energy and the Australian Energy Regulator as part of an agreed engagement process in the drafting of Endeavour Energy's Draft Revenue Proposal 2024 – 2029.

## 3. Western Sydney: challenges of a growing region

Western Sydney is one of the most rapidly growing regions in Australia; already home to 2.4 million people, by 2041 this is expected to have increased to 4.1 million. Future proofing the electricity network will be critical to ensure liveability, and health and safety standards for our communities.

The current electricity infrastructure is already under strain, which is especially apparent when demand peaks, for example in extreme heat events when supply is not able to meet demand. These pressures are set to grow with increasing impacts of climate change coupled with ongoing urban development.

Western Sydney's existing and greenfield sites require infrastructure and services that will adequately support existing and anticipated populations in the region. Planning for this new development should

take into account not just population growth, but must also include environmental impacts and a changing climate.

WSROC urges that supply of distribution network services takes into consideration the quality of life for our residents, including amenity and the aesthetics of development.

The funding of energy infrastructure requires long-term investment and long-term planning beyond the approach allowed within Energy Distribution Price Reviews. The projected growth provides the region with a significant opportunity for future development to fund the required increase in downstream transmission and distribution infrastructure whilst expanding the customer pool.

WSROC recommends Endeavour Energy continues detailed strategic investment planning in consultation with Local and State Governments to ensure development approaches drive downward pressure on electricity distribution prices over the coming 20 years.

### 3.1 Climate change and resilience

WSROC welcomes consideration of climate change and resilience in the proposal. Our member Councils stretch from highly urbanised areas to remote communities. As such, challenges, needs, and opportunities for grid resilience will be different across the region.

The communities represented by WSROC Councils are particularly vulnerable to the risks of bushfires, floods and extreme heat. Many local government areas experienced sequential, compounding disasters over the past few years, including the 2019/20 bushfires and heatwaves, and 2021-2022 floods. These events have had devastating impacts on our residents and infrastructure. They have also served as a warning that our approach to hard and soft infrastructure will need to dramatically change. Climate change will be the most critical challenge to liveability in our region over the coming years.

WSROC notes that Endeavour Energy commissioned Deloitte to produce a *Climate Change Scenario Analysis Report*, its conclusions are supported. We stress that the impacts of climate change are already established in Greater Western Sydney, where temperatures have risen faster than other parts of the city or other regions in NSW. We strongly suggest that the high emission scenario is used for modelling, and caution against averaging impacts and temperatures across the region, as it may misrepresent reality at the local scale.

WSROC strongly supports a joint approach between DNSPs across Australia to respond to climate change, and to develop a long-term vision that prioritises health, safety, liveability and resilience.

We would welcome the opportunity to work further with Endeavour Energy to promote the resilience of energy networks, as well as facilitate innovation in the sector.

WSROC further supports Endeavour Energy's intention to strengthen collaboration with local government to help deliver the best outcomes during an emergency<sup>1</sup>. One area where WSROC would be especially keen to explore opportunities is securing safety during heatwave. Noting Western Sydney is already home to 2.4 million people, and has experienced ambient temperatures near 50 degrees Celsius, the number of people at risk and the scale of a potential emergency during extreme heat events would be substantial.

WSROC supports the development of local resilience hubs with reliable electricity supply, and would recommend that for the extreme heat hazard, pilot projects implemented in the region could provide valuable insights. For example, regarding accessibility, identify areas of need, and equipment specifications to ensure it can operate in extreme temperatures. We would welcome collaboration on this issue.

## 3.2 Supporting our communities

While we understand DNSPs are businesses, we equally stress that the energy network is critical infrastructure, and power is an essential utility that in itself is capable of mitigating risk and providing the means to respond to emergency events. When considering customer benefits, it is important to acknowledge that:

- Distribution of benefit varies significantly across the network; with different customers facing varying levels of physical and economic risk from network disruptions.
- Customer benefits are far broader than just economic benefits.

First, focusing on the net economic benefit for customers as a collective, fails to understand how costs and benefits of investment vary across the energy network. I.e., overall net savings to the customer base can come at the cost of network resilience in communities exhibiting the highest levels of vulnerability, and lowest adaptive capacity.

In WSROC's experience, across the population of Greater Sydney, those areas experiencing the highest levels of network disruption risk (i.e., Western Sydney) are also the most socio-economically disadvantaged and therefore exhibit higher levels of vulnerability during hazards such as heatwaves.

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<sup>1</sup> Pg 204 of Regulatory Proposal

For such communities, reliable and affordable power is critical to support life and wellbeing during extreme heat events such as those experienced during summer 2019 - 2020, and these benefits cannot be expressed in terms of net economic benefit.

WSROC implores that in assessing customer benefits, Endeavour Energy considers carefully what is included and excluded from assessments. We understand that traditional cost-benefits will not be adequate in view of climate change, as acknowledged by [NSW Treasury](#). Often, avoided costs to customers are overlooked, as well as broader costs to the State's health systems.

WSROC recommends that Endeavour Energy's work on energy network resilience, prioritises the safety of vulnerable facilities and communities, and includes resilience to heatwaves and extreme heat events. We further recommend Endeavour Energy engages with Councils to:

- Assist with the development of heat risk assessments and emergency management plans, including identification of operational thresholds for equipment.
- Install localised backup power in areas of high risk where other mitigation treatments are not considered appropriate.

## 4. Public Lighting Cost Model

There are a number of items within the Endeavour Energy Public lighting model discussed within this section that we propose consideration of an alternative approach to that outlined by Endeavour Energy. This includes:

- LED Failure rates
- LED Cleaning

In addition, we request the AER benchmark a number of cost areas and adjust based upon this benchmarking.

### 4.1 LED Failure Rates

Endeavour Energy currently includes a failure rate for LED luminaires of 3.79%<sup>2</sup>. It is unclear if this rate is an annual rate or across the 5-year period. If it is an annual rate this is not in line with failure rates in other jurisdictions or rates advised by Manufacturers.

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<sup>2</sup> Endeavour Energy - 14.06 Public Lighting Pricing Model - January 2023 – Public, Worksheet C\_OPEX Calc, Cell Q61.

Councils experience common LED failure rates of below 1% for most DNSPs. For example, below is detailed failure rate data provided by AusNet Services in Victoria.

*Table 1: AusNet Services Record of LED Failures 2016 to 2018 per luminaire*

AusNet Service LED failure rates	% failure p.a.	% of overall failures	% of overall failure (exc. luminaire replacements)	Extrapolated 8-year failure rate
% of repairs - PE cells	0.46%	42%	77%	3.7%
% of repairs – luminaires	0.49%	45%		3.9%
% of repairs – other	0.14%	13%	23%	1.1%
Total	1.09%			8.7%
Total (exc. Luminaires)	0.60%			4.8%

Based on this AusNet conclude: *(the) light failure analysis shows the average fault rate (from 2016 to 2018) for LED lights is 1.09%, comprising of 0.49% luminaire replacements, 0.46% PE cell replacements, and 0.14% other repairs.*

#### 4.1.1 Recommended Alternative Approach

That the AER:

- Confirm assumptions around the time period that the LED failure rates apply.
- If 3.79% is an annual rate, require evidence, including how the impacts of initial mortality has been taken into account.
- If evidence is not available, use the data provided by AusNet or similar real data to determine this figure as no evidence has been provided as to the need for cleaning within the period of the price review.

## 4.2 LED Cleaning

Endeavour Energy currently includes cleaning of LED luminaires every 6 years (Endeavour have stated that this *in accordance with the NSW Public Lighting Code*).

However, a review of the latest version of the Code<sup>3</sup> shows that there are no requirements around cleaning schedules for LEDs (or any light). In other jurisdictions the cleaning cycle agreed between

<sup>3</sup> <https://www.energy.nsw.gov.au/nsw-plans-and-progress/regulation-and-policy/public-lighting-code>

customers and DNSPs is commonly 10 years (e.g., Victoria and South Australia). In many other jurisdictions this has not yet been agreed to.

The clean time is defined during the lighting design process for street lighting. There are specific reasons for up to 10 years to be utilised including to align maintenance practices and to align with design approaches. With a 20-year life for luminaires and commonly a 10-year life for PE Cells, cleaning the lights at ten years makes sense.

Many Endeavour Energy Councils, for example, City of Parramatta Council, have installed LEDs across the Local Government Area and designed for a 10-year cleaning cycle. A clean after 6 years is not required in this area.

The impact of changing the clean cycle to 10 years would be to directly reduce maintenance pricing by 4-5% in the first year.

Noting that most of the lights will not require cleaning within the period of this price review as only 50% of lights have been replaced with LEDs by the end of 2022. However, it is relevant when all lights will be LEDs prior to July 2024, thus meaning that maintenance prices must be reduced!

#### 4.2.1 More detail on lighting design approach and cleaning cycles

Lighting design requires calculation of light depreciation. In many jurisdictions, there is a calculated figure that determines the depreciation in light output of the actual light in question. For example, an 80WMV actually has a maintenance factor (which combines lamp depreciation and dirt build-up) of around 55% after 4 years, whilst many LEDs are as high as 85% after 10 years<sup>4</sup>.

How is “*original lighting output*” considered in other jurisdictions?

In Victoria, the five Victorian DNSPs work together to share information for the assessment of new public lighting products. As part of this process, technical requirements for new street lighting products have been released<sup>5</sup>.

The Guidelines specify the methodology by which the spacing performance of new LED street lighting products must be assessed. Spacing analysis is generated by calculating Maintenance Factors (MFs) in accordance with the Australian Standards and as outlined in the Guidelines. The luminaire

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<sup>4</sup> Evaluation of Low Energy Lights for Minor Road Lighting, Victorian Sustainable Public Lighting Action Group (VSPLAG) – Technical Reference Group, 2008

<sup>5</sup> SSL Street Lighting Design and Performance Guidelines – Victoria



maintenance factor (LMF) used assumes a clean at **10 years** and is utilised across the state. (South Australia also use a 10-year cleaning cycle).

Following calculation of spacing tables as per the above method, a luminaire’s spacing performance is assessed against benchmark spacing tables. For Category P luminaires, benchmark spacing tables are based on the performance of the 80W mercury vapour, 2x14W T5 and 32W CFL. For Category V luminaires, benchmark spacing tables are based on the performance of the 150W HPS, 250W HPS and 400W HPS.

#### 4.2.1.1 Theoretical performance of Endeavour approved lights at 20 years (assuming clean at 10 years)

Endeavour have approved the Schreder StreetLED MKIII 17W and this is currently one of the main LED products installed on the network. This luminaire has also been assessed and approved by Victorian DNSPs using the methodology outlined above (assuming a clean not before 10 years). The design outcomes to meet load lighting standards are (Category P4 and P5) presented in .

Table 2 and Table 3.

Note – in the tables below **green** cells indicate compliance with spacing benchmarks.

Table 2 - StreetLED MKIII 17W semi cut-off P4 spacing table

SYLVANIA STREETLED MKIII 17W													P4
Mounting Height	Road Reserve Width (m)												
	10	11	12	13	14	15	16	17	18	19	20	21	22
5.5m	67.4	67.3	67.2	67.1	67.0	66.8	66.7	66.6	66.4	65.4	64.3	62.8	
6.5m	73.6	73.5	73.4	73.3	73.2	73.0	72.9	72.8	72.7	72.2	71.3	70.3	69.3

Table 3 - StreetLED MKIII 17W semi cut-off P5 spacing table

SYLVANIA STREETLED MKIII 17W													P5
Mounting Height	Road Reserve Width (m)												
	10	11	12	13	14	15	16	17	18	19	20	21	22
6.5m	87.2	87.0	86.9	86.8	86.7	86.6	86.5	86.4	86.2	86.1	86.0	85.9	85.7
7.5m	93.9	93.9	93.8	93.7	93.6	93.5	93.4	93.3	93.2	93.0	92.9	92.8	92.6

## 4.2.2 Recommended Alternative Approach

As no evidence has been provided as to the need for cleaning within the period of the price review, and there is clear evidence that this is not likely to be required, we recommend:

- 1) That no cleaning be included within the Public Lighting price models for this price review period except for lights replaced with LEDs before 2019
- 2) Beyond this price review period
  - a. Endeavour Energy change the cleaning cycle to be 10 years, or
  - b. Endeavour Energy allow Councils who have completed appropriate design processes (like City of Parramatta) to have an agreed cleaning cycle of 10 years and other Councils to perhaps retain a 6-year cycle. However, preferably, a cleaning cycle of 10 years should be standard.

If 2.b) is implemented, we also call for an appropriate trial to understand the true cleaning cycle requirements of lighting in NSW. This trial needs to include a transparent process between customers and DNSPs, so the data is clear and transparent. This will build an evidence base for future cleaning cycles across the state.

## 4.3 Cost Benchmarking

There are a number of areas where benchmarking against best practice should be undertaken. Although price variance amongst DNSPs can sometimes be reasonable, customers expect the lighting system to be managed efficiently.

An example of this is corporate overheads (See Table 4). Overheads are between 49% and 130%<sup>6</sup> of the total costs of public lighting. These costs are not transparent not are they presented in sufficient detail within the cost model that would allow an assessment as to their reasonableness or not. In addition, these appear to be high compared to other jurisdictions, for example in Ausgrid the same overheads are between 6% and 14% (See Table 5).

Table 4 – Endeavour Energy Public Lighting Overheads for 2024-29

<b>CAPEX Overhead Rates</b>		
Corporate	Public Lighting Capex Corporate OHs FC22	15.78%
Divisional	Public Lighting Capex Network OHs FC22	33.63%
		<b>49.41%</b>
<b>OPEX Overhead Rates</b>		
Corporate	Public Lighting Opex Corporate OHs FC22	95.79%
Divisional	Public Lighting Opex Network OHs FC22	33.63%
		<b>129.43%</b>

<sup>6</sup> Endeavour Energy - 14.06 Public Lighting Pricing Model - January 2023 – Public, Worksheet See I\_Global Inputs, Cell E42

Table 5 – Ausgrid Public Lighting Overheads for 2024-29

CAPEX Overhead Rates		
Corporate	[Insert source here]	6.00%
Divisional	[Insert source here]	
<b>Total CAPEX overhead %</b>		<b>6.00%</b>
OPEX Overhead Rates		
Corporate	[Insert source here]	4.00%
Divisional	[Insert source here]	9.80%
<b>Total OPEX overhead %</b>		<b>13.80%</b>

### 4.3.1 Recommended Alternative Approach

That the AER benchmark and where relevant adjust the following elements within the public lighting models:

- a. Corporate and divisional overheads
- b. Hourly rates for all nominated labour and plant
- c. WACC and CPI

## 5. Electric Vehicle transition

WSROC supports Endeavour Energy’s work on accelerating deployment of public charging facilities across Greater Western Sydney. WSROC and Councils identify the electrification of transport as a critical step in reducing emissions. Ensuring access to public charging is an important measure to reduce barriers to electric vehicle uptake. Western Sydney Councils have developed the [Western Sydney EV Roadmap](#), which guides regional collaboration for Western Sydney Councils to:

- Reduce carbon from Councils’ corporate fleet emissions
- Create regional infrastructure plans
- Access grant funding for project and research delivery, and
- Collaboratively advocate to the NSW and Australian governments.

WSROC and Councils would welcome ongoing collaboration with Endeavour Energy to implement the Roadmap to ensure Western Sydney communities are not left behind in the electrification transition.

## 6. Demand Management testing

Western Sydney is already facing higher ambient temperatures and overheating in summer, and the region is projected to experience more extreme and more frequent heatwaves which are exacerbated by a more urbanised environment. This already puts strain on the energy network; research shows

that energy consumption for cooling purposes in Western Sydney is up to 100% higher than in the eastern zones of the city, with peak electricity demand increasing by almost 100% when temperatures increase from 20 °C to 40 °C.

Better Demand Management practices will become increasingly critical for Western Sydney, and identifying new ways to alleviate network constraints and respond to network challenges will be important.

WSROC notes the development of a New Technology Master Plan (NTMP) tool in collaboration with ENEA to advance a more proactive approach to the efficient use of non-network solutions. We understand the tool integrates existing network data and enables the exploration of the net-benefits (from a customer's perspective) of various non-network solutions at a pre-feasibility stage, considering the various uncertainties and sensitivities. The NTMP tool would furnish Endeavour Energy with the knowledge and business capabilities that will allow for the effective identification of new technology options.

WSROC would welcome further information from Endeavour Energy's perspective regarding the NTMP and explore opportunities for collaboration.

## 7. Innovation Fund

WSROC strongly supports Endeavour Energy's proposal for an Innovation Fund. Climate change poses unprecedented challenges to our region; both in terms of impacts from natural hazards as well as the pressure of the need for a rapid transition to a low emissions future. Addressing these challenges will require innovation and solutions beyond BAU. WSROC supports Endeavour Energy to take steps to prepare for an accelerated transition.

WSROC supports the innovation focus areas as outlined in the proposal:

- Orchestration & Distribution System Operator (DSO): facilitating consumer participation in the energy market rather than building more infrastructure and go beyond "*poles and wires.*"
- Electric Vehicles Services: enabling grid stability and flexibility as EV uptake rises.
- Sustainability Solutions: developing sustainable services from renewable-based supply and improve energy efficiency.
- Climate Resilience: adopting climate resilience measures contributing to improve electricity access and network services with a particular focus on enhancing community resilience.

We see opportunities for further engagement with Endeavour Energy on the Innovation Fund, and we would welcome further discussion on how WSROC and Councils can support this work, for example WSROC's involvement in the Governance Committee for the work.

We understand that Endeavour Energy will also investigate options to partner with Councils and other utilities to improve community resilience and implement innovative solutions such as batteries and microgrids.<sup>7</sup> WSROC and councils are currently in planning for community battery projects and look forward to working closely with Endeavour Energy on collaborative roll out plans.

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<sup>7</sup> Pg 152 of Regulatory Proposal