Revised AA5 proposal

Response to the ERA's draft decision

15 November 2022

westernpower

EDM 61321439

An appropriate citation for this paper is:
Revised AA5 proposal
Our Ref: Response to the ERA's Draft Decision

Western Power
363 Wellington Street
Perth WA 6000
GPO Box L921 Perth WA 6842
T: 13 10 87 | Fax: 08 9225 2660
TTY 1800 13 13 51 | TIS 13 14 50
Electricity Networks Corporation
ABN 18 540 492 861
enquiry@westernpower.com.au
westernpower.com.au

Enquiries about this report should be directed to:

AA5 Project Team
Email: AA5@westernpower.com.au

Contents

List of tables

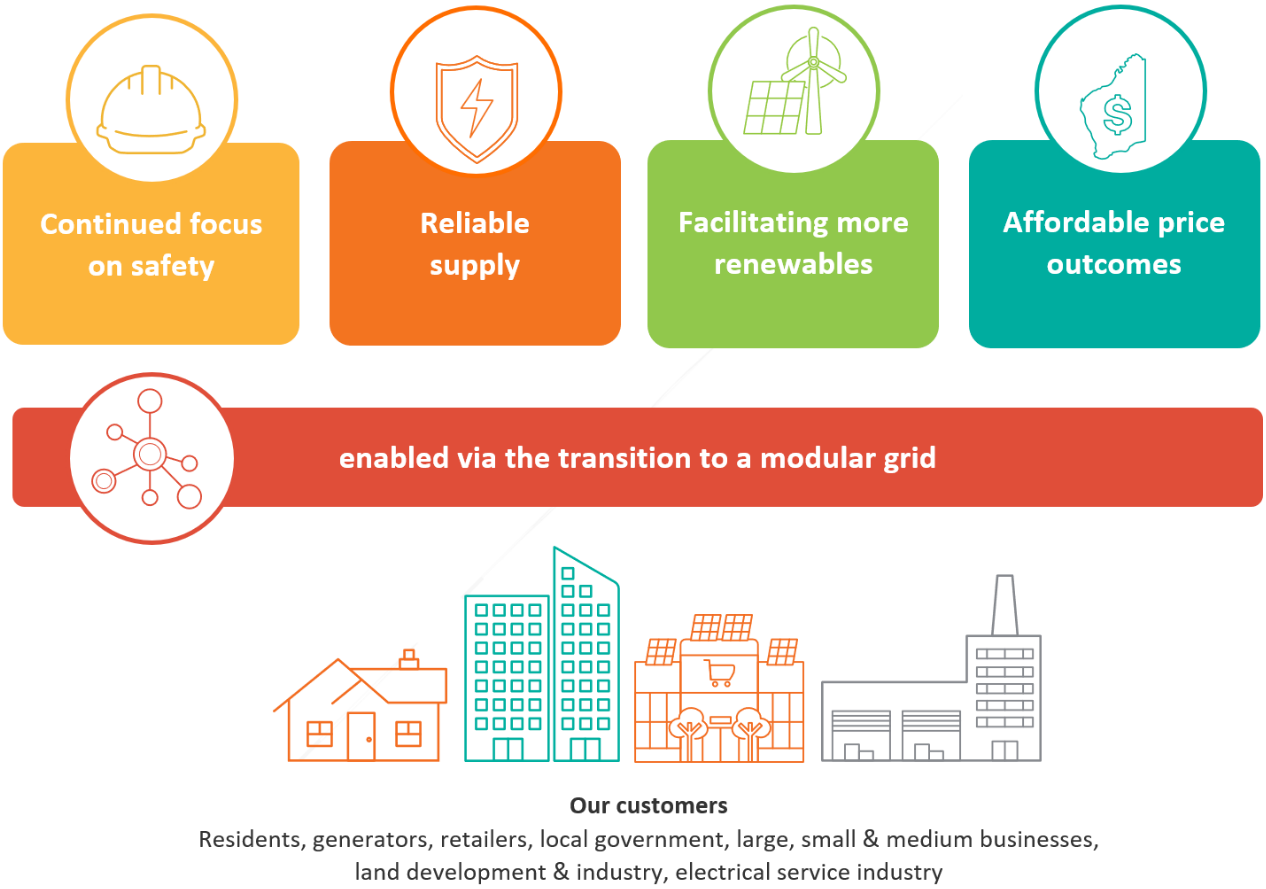
List of figures

1. Executive summary

1. This submission outlines Western Power's revised proposed access arrangement information for the fifth access arrangement (**AA5**) period (**Revised Proposal**) and takes into consideration our Initial Proposal submitted to the Economic Regulation Authority (**ERA**) on 1 February 2022 (**Initial Proposal**), the draft decision published by the ERA on 9 September 2022 (**Draft Decision**), ongoing stakeholder engagement, the Western Australian Government commitments and recent changes in external requirements.

2. Our Initial Proposal outlined the key pillars underpinning our strategy and what we will deliver for our community and customers, now and into the future. Figure 1.1 outlines how Western Power will deliver these outcomes via transition to the modular grid.

Figure 1.1 What our AA5 proposal delivers for our community and customers



3. The modular grid refers to a move from a purely traditional network towards one which also incorporates a mix of new energy solutions, such as standalone power systems (**SPS**), microgrids and battery energy storage systems, that can potentially plug into or out of the grid as needed. The modular grid also seeks to optimise the usage of our existing highly interconnected network, both transmission and distribution, through the use of new technologies and the integration of customer distributed energy resources (**DER**) into core operations. These diverse solutions provide improved and exciting opportunities to increase safety and reliability performance, maintain affordability, and increase the use of renewable energy generation in a way that traditional technology did not permit.

4. Our Initial Proposal was developed off the back of extensive consultation to understand the values and priorities of our customers and key stakeholders. We reached out to more than 2,000 members of the community, including users, end-use customers, generators, retailers, industrial businesses, small to

medium sized businesses, local governments, industry associations and residential customers (including urban, regional, vulnerable, and culturally and linguistically diverse customers).

5. Our customers and the community told us they expect electricity to be available when they need it. They expect safe, reliable and increasingly renewable energy, delivered at an affordable price. Accordingly, our Initial Proposal included expenditure and investments aligned with our customers' priorities of safety, reliability, affordability, increasing renewable energy generation, investing in new technologies and supporting future demand.

6. Since our Initial Proposal, we have continued to engage with customers and key stakeholders to ensure our proposal meets key external challenges. These include the growing challenges we outlined in our Initial Proposal to respond to the rapidly changing energy landscape and new requirements we are facing, such as an increased focus on reliability, increased cyber security risks, the rapidly accelerated decarbonisation pathway, and the changing economic environment.

7. The ERA has also undertaken engagement during this time and sought submissions from key stakeholders in response to the ERA's issues paper[1] and Western Power's access arrangement information. Western Power has used this valuable feedback and insights in our proposal as a key contributing factor to ensure our final access arrangement delivers on customer and community expectations with respect to the expenditure and investments on our network that customers prioritise, the services customers are requesting, and the role customers expect Western Power to play within the rapidly changing energy landscape.

8. We appreciate the ERA's balanced approach to its Draft Decision during a period of significant change in the energy sector.

9. There are many aspects of the Draft Decision which align with Western Power's Initial Proposal. These include:

- the need for Western Power to invest in our network in support of the energy transformation, recognising that our proposal outlined project initiatives that are consistent with the transformation and ongoing care and maintenance of the network
- recognising reliability as a key focus of our customers, in particular regional customers who may be experiencing service levels below the average for rural long feeder customers
- recognising advanced metering as a key enabler of the transformation, which includes a requirement for advanced metering infrastructure (**AMI**) to be installed for technology specific services such as dedicated electric vehicle (**EV**) charging and storage to the benefit of customers as outlined in section 5.3.3.5
- supporting undergrounding and SPS as integral to Western Power's grid transformation strategy and recognising these technologies as prudent management approaches to both overhead network renewal and the efficient transformation of the distribution network
- including actual capital expenditure (**capex**) incurred over the fourth access arrangement period (**AA4**) in the Regulated Asset Base (**RAB**) and recognising that we have robust capex governance and asset management processes that align with good industry practices

---

1 Economic Regulation Authority, *Proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Issues paper, 4 March 2022.

- incorporating latest market inputs in the calculation of the Weighted Average Cost of Capital (**WACC**) recognising these inputs are outside the control of both Western Power and the ERA
- grandfathering of existing time of use services that no longer support the efficient use of the network, and the inclusion of a demand version of the new super off-peak time of use service.

10. Western Power considers there are some aspects of the Draft Decision that require further consideration and accordingly, alternative approaches have been proposed by Western Power in this Revised Proposal. These relate to:
    - aligning service standard benchmark (**SSB**) performance for rural long feeders to the standard prescribed in the Code of Conduct for the Supply of Electricity for Small Use Customers 2008, Electricity Industry (Network Quality and Reliability of Supply) Code 2005 (**NQRS Code**) whilst calculating all other service levels as the average performance over the previous five years, thereby implementing an inconsistent approaching to setting SSB
    - reducing operating expenditure (**opex**) by 7 per cent and capex by 15 per cent which will have implications for Western Power's ability to deliver on customer expectations of safe and reliable services whilst facilitating greater renewable energy and enabling the energy transformation
    - requiring Western Power to ensure streetlight assets meet current public lighting standards (AS/NZS 1158) where a change to the luminaire is installed in an existing asset, potentially requiring significant expenditure above current levels and increases in the applicable streetlight tariff.

11. In addition, since the submission of our Initial Proposal in February 2022, a number of new requirements have arisen which Western Power is required to address. These include:
    - the release of the Independent Review of Christmas 2021 Power Outages Final Report in March 2022 (**Shepherd Report**)[2] which provided six key recommendations for Western Power including improving the way we communicate with customers and the way we work to restore power supply during periods of high fire danger ratings
    - as noted by the ERA in its Draft Decision, an increased focus on the threat of cyber security risks to our network following major high-profile cyber security issues experienced by a number of other major Australian organisations
    - supporting the Western Australian Government and community in achieving the stated decarbonisation goals to 2030 through, for example, participating in the Western Australian Government's assessment of electricity demand.[3]

12. Western Power is continuing significant work to prepare the network from the coming summer following the power outages experienced during the record-breaking heatwave last year. The swathe of work being undertaken addresses the recommendations of the Shepherd Report. Much of this work was already underway in response to climate change and weather impacts, but we have fast tracked this work to get as much of it completed ahead of summer 2022 to improve power reliability where possible including:
    - improving low voltage forecasting methodology by incorporating AMI data, considering the rise in rooftop solar and changing weather patterns

---

2 Shepherd, M., *Independent Review of Christmas 2021 Power Outages*, Final Report, 14 March 2022.

3 Western Australian Government, *Assessment of electricity demand to inform Western Australia's future network*, Media Release, 24 August 2022.

- revising load forecasts for our distribution network and incorporating relevant Commonwealth Scientific and Industrial Research Organisation (**CSIRO**) long-term climate change projections to forecast heatwave frequency and intensity
- reviewing switching patterns to redistribute load from congested parts of the network where possible
- minimising the length and number of unplanned outages through reinforcement works for a number of substations including Mandurah, Waikiki, Yanchep and Byford, as well as the upgrade of 70 distribution transformers
- improving customer and stakeholder communications in the lead up to, and during, outage events to keep our customers updated with timely and effective information through our short message service (**SMS**) program and enhance outage information on the Western Power website.

13. This Revised Proposal is developed having consideration to further stakeholder engagement, new and developing obligations, the Western Australian Government commitments and recent changes in the external operating environment within which Western Power operates.

14. This Revised Proposal has been updated to address all 63 of the Draft Decision required amendments included in the Draft Decision, either as proposed by the ERA (54 amendments) or through a proposed alternative approach (9 amendments).

15. Western Power considers this Revised Proposal for the fifth access arrangement review period best serves the long-term interests of our customers and the community, in line with the objectives of the *Electricity Networks Access Code 2004* (**Access Code**). We consider it complies with the requirements of the Access Code, reflects an optimum investment profile and meets the expectations of customers and the community.

1.1 Overview of Revised Proposal

16. Table 1.1 below outlines how our Revised Proposal compares to our Initial Proposal and the Draft Decision across the major high-level parameters.

Table 1.1 Financial overview of Western Power's Revised Proposal

Parameter	Initial Proposal	Draft Decision	Revised Proposal
Revenue[4]	$7,933 million	$9,001 million	$8,933 million
WACC	4.73%	7.10%	7.10%
Net capex[5]	$4,341 million	$3,712 million	$4,210 million
Opex[6]	$2,182 million	$2,032 million	$2,250 million
Energy volume[7]	150,710 GWh	150,710 GWh	156,356 GWh
Network Tariffs	One-off increase in 2023/24 of 3.7%, flat thereafter	Average annual increase 2023/24 –2026/27 of ~7.7%	Average annual increase 2023/24 – 2026/27 of ~3.3%

4 Target revenue $ million nominal smoothed.
5 Forecast AA5 capex net of capital contributions, including indirect costs and escalations, $ million real at 30 June 2022.
6 Forecast AA5 opex, including indirect costs and escalations, $ million real at 30 June 2022.
7 Includes both transmission and distribution volumes.

1.1.1 Revenue required to deliver on customer expectations

17. Western Power's revised proposed revenue requirement for the AA5 period is $8,933 million (smoothed $ nominal), slightly lower than the Draft Decision revenue of $9,001 million (on the same basis).

18. This is the revenue required to meet our customers' expectations, treat ageing assets, address the challenges of the changing energy landscape and recover the prudent and efficient costs of transforming the network.

19. The impact on revenue of capital and operating investments included in this Revised Proposal is offset by decreases in other revenue building blocks such as taxation, incentives and depreciation as per other required amendments included in the Draft Decision. In addition, Western Power has updated all financial and non-financial metrics to reflect actuals for the last year of AA4 being 2021/22 and the most recent forecast of the Tariff Equalisation Contribution (**TEC**). The movement in revenue building blocks between the Draft Decision and this Revised Proposal is outlined in Section 5.1.

20. Western Power notes the statements in the Draft Decision regarding changing economic and financial conditions and the significant increases in inflation and interest rates resulting in the large increase to target revenue provided in that decision. As also noted by the ERA, *"these changes are outside of the control of both Western Power and the ERA yet are important factors in determining Western Power's cost of capital and inflation escalation of the capital base and drive most of the change in revenue"*.[8]

21. The ERA has also stated that, for the Final Decision, *"the market parameters and inflation forecasts will be updated with the most current values available at the time"*.[9]

1.1.2 Weighted Average Cost of Capital

22. The WACC is the rate of return that Western Power earns on its investment in the electricity network and generally has the greatest impact on Western Power's financial sustainability and is the largest component of the revenue we can earn from customers.

23. Western Power has included an average WACC of 7.10 per cent in this Revised Proposal in line with the methodology included in the Draft Decision, noting the ERA's preference to align with the Draft 2022 Rate of Return Instrument.

24. As noted above, the ERA will update the market parameters with the most current values available at the time prior to the Final Decision.

1.1.3 Capital Expenditure

25. In preparing our Revised Proposal capex forecasts, we have considered our customers' requirements, the Draft Decision and the emerging challenges Western Power is facing from external factors including increased cyber security risks, increased focus on reliability and the rapidly accelerated decarbonisation pathway.

26. During the AA5 period, Western Power proposes to invest $4,525 million ($2022 real, excluding indirect costs and labour escalation) on our network to deliver the covered services in this Revised Proposal. This is 11.4 per cent higher than the Draft Decision for forecast capex of $4,061 million (on the same basis) and 2.2 per cent lower than our Initial Proposal of $4,629 million (on the same basis).

8 ERA, *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27 Decision overview*, 9 September 2022, p. ii.

9 ERA, *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27 Decision overview*, 9 September 2022, p. 2.

Table 1.2 Summary of Revised Proposal for forecast capex ($2022 real, excluding indirect costs and labour escalation)

Capex category	Initial Proposal	ERA Draft Decision	Revised Proposal	Difference to ERA Draft Decision
Transmission Network				
Asset replacement and renewal	293.2	207.9	207.9	-
Growth	291.7	291.7	375.1	83.4
Improvement in services	-	-	-	-
Compliance	161.0	161.0	161.0	-
Subtotal – Transmission	**745.9**	**660.6**	**744.0**	**83.4**
Distribution				
Asset replacement and renewal	2,017.9	1,786.2	1,790.0	3.8
Growth	773.4	773.4	889.0	115.6
Improvement in services	0.2	0.2	0.2	-
Compliance	215.2	215.2	405.3	190.1
Subtotal – Distribution	**3,006.8**	**2,775.1**	**3,084.5**	**309.5**
Other				
SCADA and Telecommunications	413.1	289.2	350.0	60.8
Corporate – business support	130.5	102.9	102.9	-
Corporate – ICT	332.8	233.0	243.8	10.8
Total	**4,629.1**	**4,060.8**	**4,525.2**	**464.4**
Contributions	910.2	910.2	909.2	(1.0)
Net capex	**3,718.9**	**3,150.6**	**3,616.0**	**465.4**

27. Where it is possible to accept the Draft Decision, without significantly compromising safety and reliability, we have done so, noting the related impacts on risk of the reduced expenditure outlined in this Revised Proposal. In relation to aspects where we are proposing an alternative position, Western Power has provided further detailed information and analysis to explain and justify the proposed expenditure.

28. Key movements in our forecast capex included in this Revised Proposal reflect additional expenditure of:

- $115.6 million to address key recommendations from the Shepherd Report, including investment to manage overutilised feeders and transformers in response to more frequently occurring extreme climate events (see section 5.3.4)
- $182.0 million to apply an increased focus on reliability in rural areas to deliver targeted improvements to rural long customers where the performance on their feeder is identified to be significantly below the average performance for the rural long region (see section 5.3.5.1)

- $69.0 million to address the increasing threat of cyber security risks to our network following major high-profile cyber security issues experienced by several other major Australian organisations (see sections 5.3.6 and 5.3.8.1)
- $83.4 million to support the accelerated decarbonisation pathway outlined by the Western Australian Government to achieve decarbonisation by 2030. Our proposed expenditure will enable us to develop a pathway to facilitate connection of new renewable generation in the Eastern Goldfields and North Region of the south west interconnected system (**SWIS**) (see section 5.3.2)
- $31.3 million to capitalise costs associated with decommissioning lines following the installation of SPS, as required by the Draft Decision (see section 5.3.3.2).

29. Western Power is cognisant of the delivery challenges presented by the current global workforce and supply chain challenges and has developed targeted strategies to mitigate these accordingly.

1.1.4 Operating Expenditure

30. Western Power is forecasting opex of $2,250 million ($2022 real, including indirect costs and labour escalation) to safely operate and maintain our networks over the AA5 period. This is 11 per cent higher than the Draft Decision of $2,032 million (on the same basis) and 3 per cent higher than our Initial Proposal of $2,182 million (on the same basis). Table 1.3 provides a summary of the Revised Proposal for forecast opex.

Table 1.3 Summary of Revised Proposal for forecast opex ($2022 real, excluding indirect costs and labour escalation)

	Initial Proposal	ERA Draft Decision	Revised Proposal	Difference to ERA Draft Decision
Recurrent network base costs	1,740.5	1,740.5	1,813.3	72.8
Step changes	104.9	78.6	214.3	135.7
Total recurrent network costs	1,845.4	1,819.0	2,027.6	208.6
Network growth escalation	52.9	32.3	30.5	-1.8
Productivity	(14.3)	(108.4)	(31.1)	77.3
Non-recurrent costs	72.5	72.5	11.5	-61.0
Labour cost escalation	42.7	39.4	24.3	-15.1
Expensed Indirect costs	183.4	177.1	187.5	10.4
Total	**2,182.7**	**2,032.0**	**2,250.3**	**218.3**

31. In preparing our Revised Proposal opex forecasts, we have considered our customers' requirements, the Draft Decision and the emerging challenges Western Power is facing from external factors including higher inflation than forecast, increased insurance premiums felt across the industry and the requirement for Western Power to inspect private power poles.

32. The key movements in opex included in this Revised Proposal reflect:

- $72.8 million due to updating the base year to include actual inflation of 6.10 per cent compared to the AA4 approved forecast inflation of 1.84 per cent (see section 5.4.1)

- $214.3 million for step changes to our base year opex. Since submitting our Initial Proposal, we are seeing increasing challenges and cost pressures from external factors such as increased insurance premiums being experienced across the industry and a new obligation for Western Power to inspect private point of attachment poles (**PPAP**). We have revised our Initial Proposal step changes to reflect these challenges (see section 5.4.2).

33. Western Power considers that the opex forecast for the AA5 period will come under significant pressure due to the ongoing economic climate impacting the cost of securing resources at levels above headline inflation. Therefore, it is important that Western Power is provided with an opex level that meets likely efficient costs and also enables Western Power to manage our costs in-period.

1.1.5 Network tariffs

34. In our Initial Proposal, Western Power proposed that prices would increase in 2023/24 and then remain flat for the rest of the period. However, in the Draft Decision, given the magnitude of network price increases required because of the WACC and inflation changes, the Draft Decision has smoothed the change in average network prices over the access arrangement period. We have also adopted this smoothing approach for our Revised Proposal in order to smooth the price impact for customers.

35. Western Power is forecasting a significantly lower bundled average price over the AA5 period than the Draft Decision due to inclusion of our most recent demand forecast. We update our demand forecast on an annual basis to incorporate latest inputs. The Initial Proposal and Draft Decision used Western Power's 2019/20 demand forecast which was the latest available forecast prior to the Initial Proposal being submitted. This Revised Proposal is based on our most recent 2021/22 demand forecast, which showed that actual consumption in 2021/22 was higher than previously forecast.

36. Consistent with how average network prices have been forecast in the Initial Proposal and the Draft Decision (total target revenue divided by total volume of energy), Table 1.4 below shows how our Revised Proposal compares to the Draft Decision for average network price movements.

Table 1.4 Indicative effect on network prices for AA5 (nominal prices)

	2022/23	2022/24	2022/25	2022/26	2022/27
Western Power Revised Proposal					
Smoothed target revenue ($ million)	1,734.6	1,766.0	1,786.9	1,813.6	1,831.6
Change in average prices based on forecast demand (%)	**0%**	**3.4%**	**3.2%**	**3.3%**	**3.4%**
Draft Decision					
Smoothed target revenue ($ million)	1,576.4	1,678.8	1,790.1	1,911.6	2,044.3
Change in average prices based on forecast demand (%)	0%	7.5%	7.7%	7.8%	7.9%

37. Western Power notes that the setting of retail prices for residential customers is subject to a separate Western Australian Government led process as part of the annual State Budget. The recent 2022/23 State Budget announced in May 2022 that increases in electricity charges in 2022/23 through to 2025/26 would be capped at 2.5 per cent each year for residential customers, charitable organisations and small business customers.[10] Western Power notes that this does not impact our target revenue.

10 Western Australian Government, Western Australia State Budget 2022-23, Economic and Fiscal Outlook, Budget Paper No. 3, p. 329.

1.1.6 Innovative new services

38. Western Power has amended the list of services available for our customers in response to both the Draft Decision and our continued engagement with key stakeholders to better understand their requirements.

39. Western Power has significantly revised the structure for the EV infrastructure charging reference service in response to feedback from stakeholders. While stakeholders were generally supportive of our tiered approach to the introduction of demand-based charges, they sought changes to the timing and level of demand-based charges. Western Power's revised EV infrastructure charging reference service has been developed to incentivise the deployment of EV charging infrastructure over the AA5 period by exempting users from being charged for demand-based tariffs during periods where the utilisation of EV charging sites is low.

40. In response to our proposal to grandfather the time of use tariffs introduced in prior access arrangement periods in favour of tariff structures that better reflect the current utilisation of the network, the ERA requested we develop super off-peak time of use demand-based reference services for the AA5 period. Western Power has included these new services for residential and small business customers in this Revised Proposal.

41. In developing the regulated reference services available to users over the AA5 period, Western Power has endeavoured to introduce services that reflect the efficient utilisation of our network and are set at a price level that will encourage their use over the AA5 period. We note these services are new and there is considerable uncertainty as to the demand for, and utilisation of these services. However, where bespoke requirements emerge over the AA5 period, we note that users can seek non-reference services for this purpose. Over the AA5 period, as we acquire more information on usage and network impacts arising from these services, we will seek to offer any updated structural requirements to services and/or tariffs as part of the sixth access arrangement (**AA6**).

2. Glossary

Table 2.1 Glossary

Term	Definition
AA3	Third access arrangement
AA4	Fourth access arrangement
AA5	Fifth access arrangement
AA6	Sixth access arrangement
AAC	Access arrangement contract
Access Code	*Electricity Networks Access Code 2004*
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMI	Advanced metering infrastructure
AMS	Asset Management System
AQP	Applications and Queueing Policy
BTP	Business Transformation Project
Capex	Capital expenditure
CEP	Customer Engagement Program
CFL	Compact Fluorescent Lights
CMS	Customer Management System
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEBS	Distributed Energy Buyback Scheme
DER	Distributed Energy Resources
EPWA	Energy Policy Western Australia
ERA	Economic Regulation Authority
EV	Electric vehicle
GSM	Gain sharing mechanism
HPS	High Pressure Sodium
IAM	Investment adjustment mechanism
ICT	Information and Communications Technology
LGA	Local government authority
LRMC	Long Run Marginal Cost

Term	Definition
MH	Metal Halide
MRL	Mean replacement life
MRP	Market risk premium
MSLA	Model service level agreement
MV	Medium voltage
MVA	Megavolt ampere
NEM	National Electricity Market
NetCIS	Network customer information system
NFIT	New facilities investment test
NMI	National Metering Identifier
NMS	Network Management System
NPV	Net present value
NQRS	Network Quality and Reliability of Supply
NRUP	Network Renewal Undergrounding Program
Opex	Operating expenditure
PPAP	Private point of attachment poles
PTF	Pole top fires
PV	Solar photovoltaic
RAB	Regulated asset base
ROA	Return on assets
SaaS	Software as a service
SAIDI	System average interruption duration index
SAIFI	System average interruption frequency index
SCADA	Supervisory control and data acquisition
SFAIRP	So far as reasonably practical
SMS	Short message service
SPS	Standalone power systems
SSAM	Service standard adjustment mechanism
SSB	Service standard benchmarks
SST	Service standard targets

Term	Definition
SWIS	South West Interconnected System
TEC	Tariff Equalisation Contribution
WACC	Weighted average cost of capital
WEM	Wholesale Electricity Market

3. About this submission

42. Western Power submitted its Initial Proposal for the proposed access arrangement revisions for the fifth access arrangement period (AA5 – 1 July 2022 to 30 June 2027) to the ERA on 1 February 2022.

43. On 9 September 2022, the ERA published its Draft Decision on Western Power's Initial Proposal. The Draft Decision was to not approve Western Power's proposed access arrangement revisions and set out 63 required amendments for Western Power to address.

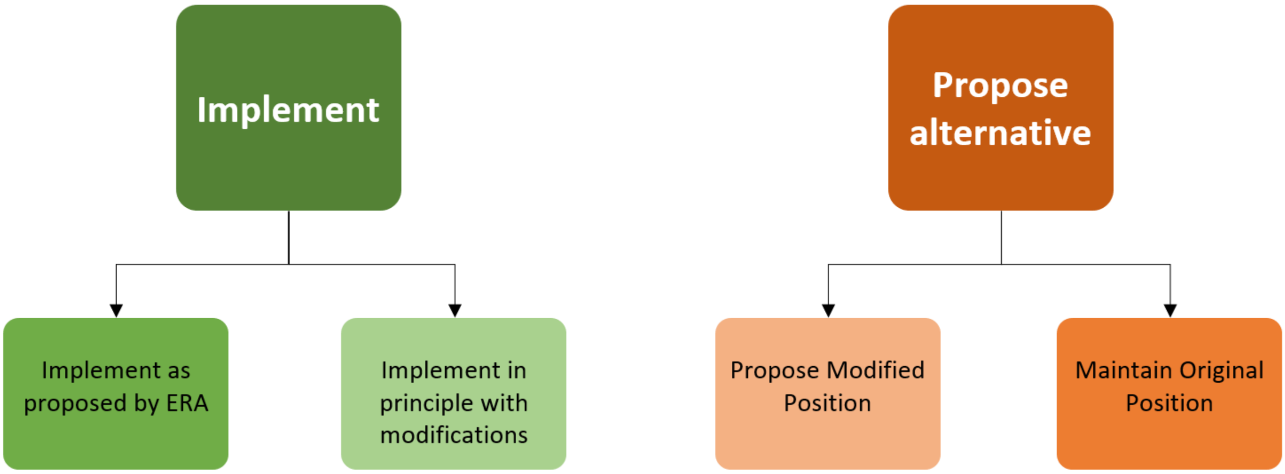
44. This Revised Proposal details Western Power's response to the Draft Decision, and along with the evidence submitted since 1 February 2022, constitutes Western Power's access arrangement information for the AA5 period. It explains Western Power's position on each of the Draft Decision required amendments and is designed to help inform the ERA's Final Decision on AA5.

3.1 Responding to the Draft Decision required amendments

45. For each of the Draft Decision required amendments, Western Power has adopted one of four positions:

- **implement as proposed by the ERA** – this is where we have implemented the Draft Decision amendment in full and have amended the revised access arrangement accordingly
- **implement in principle with modifications** – this is where we have largely implemented the Draft Decision amendment but with a minor modification(s) usually as a result of other changes
- **propose alternative - Propose Modified Position** – this is where we have proposed an alternative amendment to the Draft Decision required amendment with supporting justification
- **propose alternative - Maintain Original Position** – this is where we have not amended the access arrangement and propose retaining the original position with supporting justification.

Figure 3.1 Western Power's response to the Draft Decision required amendments



46. We have implemented the majority of amendments (54 of the 63) as required by the Draft Decision, and these are reflected in the amended proposed access arrangement and associated policies and contracts provided as part of this Revised Proposal. Section 4 of this document summarises our response to each of the Draft Decision required amendments.

47. Section 5 of this document provides information on a number of key amendments that the Draft Decision required more information on, that require more detailed explanation of how they have been implemented, or how the matters that gave rise to the Draft Decision required amendment have been addressed. The purpose of this additional commentary is to provide the ERA and network users visibility of how our Revised Proposal is consistent with Access Code requirements (including the Code objective) and the context in which amendments have been made.

3.2 Access Code objective

48. Western Power's proposed revisions to the access arrangement are guided by the Code objective, as defined in Section 2.1 of the Access Code:

> *The objective of this Code ("Code objective") is to promote efficient investment in, and efficient operation and use of, services of networks in Western Australia for the long-term interests of consumers in relation to:*
>
> *(a) price, quality, safety, reliability and security of supply of electricity;*
>
> *(b) the safety, reliability and security of covered networks; and*
>
> *(c) the environmental consequences of energy supply and consumption, including reducing greenhouse gas emissions, considering land use and biodiversity impacts, and encouraging energy efficiency and demand management.*[11]

3.3 Values used in this document

49. Unless otherwise stated, all financial values in this document are expressed in $ million real at 30 June 2022. Amounts in various tables may not sum due to rounding. Refer to the revenue and expenditure models submitted with this document for detailed financial values.

3.4 AA5 commencement date

50. Western Power proposes a commencement date of 1 July 2023.[12]

---

11 Electricity Networks Access Code 2004 (unofficial consolidated version), 30 July 2021.

12 The start date for the AA5 period is 1 July 2022. However, the revised access arrangement will not take effect until the ERA has completed its AA5 review (i.e. 1 July 2023). This means that we have what is referred to as a 'gap year', because the expected finalisation of the review of the AA5 proposal is one year later than the nominated end date of the AA4 period. This means we will continue to have a five-year access arrangement period for AA5, with forecast opex and capex for all five years to be approved as part of the access arrangement determination process.

4. Summary of responses to the Draft Decision required amendments

51. This section details Western Power's response to each of the required amendments. Table 4.1 briefly describes how Western Power has implemented or addressed the matters that prompted the ERA to require the amendments. More detailed discussion on required amendments where Western Power has not implemented the Draft Decision is provided in Section 5 of this document.

52. Western Power has addressed the required amendments in the same order as the attachments to the Draft Decision. The numbering of the required amendments shown in the first column of the table follows the format "RA-XX. YY", where "XX" refers to the Draft Decision attachment and "YY" refers to the required amendment within that attachment. For example, "RA-01.02" is the second required amendment noted in Draft Decision Attachment 1 (Price control and target revenue).

Table 4.1 Summary of responses to the Draft Decision required amendments

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
Draft Decision Attachment 1 – Price control and target revenue				
RA-01.01	Clause 5.7.3 must be amended to remove the proposed adjustment for under/over recovery of revenue for the 2022/23 financial year.	**Propose alternative – maintain original position**	Western Power has not amended Clause 5.7.3 of the access arrangement contract (**AAC**) to remove the proposed adjustment for under/over recovery of revenue for the 2022/23 financial year. We consider any adjustment should be based off actual revenue received in the year ended 30 June 2023, as per our Initial Proposal, as this reflects a more accurate position. This adjustment is required due to the target commencement date of AA5 being 1 July 2023 and the Framework and Approach decision that Western Power's current price list will apply until the revised access arrangement comes into effect.	Section 5.1.1
RA-01.02	Clause 6.4 of the proposed revised access arrangement must be amended to reflect the most recent demand forecast available prior to the Final Decision and to remove formatting errors.	**Implement as proposed by the ERA**	Western Power has amended Clause 6.4 of the AAC, consistent with the Draft Decision required amendment.	Section 5.1.2 Revised Proposal Attachment 1.3 – Energy and Customer Numbers Forecast Report (2022)

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
Draft Decision Attachment 2 – Regulated asset base				
RA-02.01	The opening regulated asset base must be amended to reflect capex reported in the annual regulatory accounts and 2021/22 actual capital expenditure.	**Implement as proposed by the ERA**	Western Power has updated the opening asset base as at 1 July 2022 in Section 5.2 of the AAC to reflect the capex reported in the annual regulatory accounts and the actual capex for 2021/22, consistent with the Draft Decision required amendment.	Not Applicable
RA-02.02	The forecast capital base must be amended to reflect the ERA's decision on forecast capex (Attachment 3B) and forecast depreciation (Attachment 4B).	**Propose alternative - propose modified position**	Western Power has proposed alternative amendments for forecast capex (see responses to Draft Decision Attachment 3B below) and has updated the depreciation calculations in accordance with the Draft Decision required amendments (see responses to Draft Decision Attachment 4 below).	Section 5.3
Draft Decision Attachment 3A – AA4 capital expenditure				
RA-03A.01	The AA4 actual capex included in the regulatory revenue model must be amended to be consistent with the regulatory accounts. Forecast expenditure for 2021/22 must be updated to actuals.	**Implement as proposed by the ERA**	Western Power has updated Revised Proposal Attachment 1.1 – Revised AA5 Regulatory Revenue Model to reflect the AA4 capex reported in the annual regulatory accounts and the actual capex for 2021/22, consistent with the Draft Decision required amendment.	Not Applicable
RA-03A.02	Western Power must provide evidence that efficiency savings equal to the expenditure of $24.9 million on the Customer Management System have been incorporated in the proposed efficient base opex or forecast opex.	**Implement in principle with modifications**	Western Power has provided further information to demonstrate that the Customer Management System (**CMS**) meets the requirements of the new facilities investment test (**NFIT**) and thus should be included in the RAB.	Section 5.2.1 Revised Proposal Attachment 3A.1 - AA4 Capital Expenditure - Customer Management System (confidential)

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
Draft Decision Attachment 3B – AA5 capital expenditure				
RA-03B.01	Forecast capex must be amended to be consistent with the ERA's Draft Decision.	**Propose alternative – propose modified position**	Western Power has amended the forecast capex in accordance with the Draft Decision required amendments, with the exception of: • supervisory control and data acquisition (**SCADA**) and Telecommunications; and • corporate information and communications technology (**ICT**). Additional expenditure above the amount provided for in the Draft Decision is required for these categories to ensure that we can meet our compliance requirements relating to managing cyber risks, communicating with SPS assets and implementing the recommendations of the Shepherd Report. The additional capex requested for these categories is: • SCADA and Telecommunications capex of $60.8 million to address cyber risks, enable communications with SPS assets and provide capability for the master station to manage cyber risks • Corporate ICT capex of $39.0 million to manage cyber risks and meet customer communication requirements stemming from the recommendations of the Shepherd Report. This additional capex is offset by a reduction of $28.2 million relating to ICT expenditure being classified as software as a service (**SaaS**). Western Power has also included additional forecast capex for: • supporting the government's decarbonisation planning costs of $83.4 million, which have been included in Growth capex for the transmission network, consistent with the Western Australian Government Sectoral Emissions Reduction Strategy planning. Western Power will play a central role in supporting these plans and must therefore ensure it can accommodate new connections in the SWIS within the compressed timeframes over which they are due to occur, given the rapid pace already seen in the industry-led evolution of the sector	Section 5.3 Revised Proposal Attachment 3B.1 - Revised Capital Expenditure Model (confidential)

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			• overhead decommissioning cost for SPS of $31.3 million, consistent with the Draft Decision required amendments for opex. In its Draft Decision, the ERA required Western Power to include the decommissioning costs associated with the removal of overhead lines as capital costs of the project leading to the need for the removal and to also depreciate these costs over one year (see RA-06.06) • capacity expansion requirements for the distribution network of $115.6 million to keep the distribution network within planning criteria parameters and meet customer requirements for network services. • compliance capex of $190.1 million for the distribution network, comprising: – $182.0 million to partially address the Draft Decision required amendments relating to SSB for rural long feeders (see RA-09.02). This investment is required to deliver service reliability and performance improvements to our customers on rural long feeders, but we are proposing a different approach to the ERA to ensure that we do so cost effectively and prudently – $8.1 million for insulator replacement for the distribution network. This investment is needed to mitigate the risk associated with pole top fires (**PTF**) due to the accumulated backlog caused by a safety related pause on the live-line silicone treatment program. Due to the high level of uncertainty regarding EV adoption rates and the impact of the changes recommended to Western Power's planning criteria in the Shepherd Report, Western Power proposes the capacity expansion category be subject to the investment adjustment mechanism (**IAM**). This would allow for the uncertainty of a program of work subject to significant expansion, and to react to volatility in EV adoption forecasts and the accompanying policies which have a highly significant impact on network requirements. Western Power has also reduced forecast capex for Metering by $27.5 million to reflect the removal of dual element metering from the AMI business case. Western Power has updated its position to install these meters only when requested by a retailer.	

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
Draft Decision Attachment 4 – Depreciation				
RA-04.01	Amend errors in the calculation of depreciation to be consistent with ERA's target revenue model.	**Implement as proposed by the ERA**	Western Power has amended the errors in the calculation of depreciation in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model consistent with the Draft Decision required amendment.	Not Applicable
RA-04.02	Amend the proposed depreciation lives for AA5 capital expenditure for distribution underground cables, distribution switchgear, stand-alone power systems and storage to 60, 35, 20 and 20 years respectively.	**Implement as proposed by the ERA**	Western Power has amended the standard asset lives for AA5 capex in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model consistent with the Draft Decision required amendment. While we have implemented the Draft Decision required amendments, Western Power will monitor the asset lives for new assets over the AA5 period and may seek to review the standard asset lives applicable for the AA6 period. Western Power notes that this applies only to the standard lives for AA5 capex. No changes were made to the remaining asset lives for existing assets as of 1 July 2022.	Not Applicable
RA-04.03	Update the revenue model depreciation calculation to use actual expenditure by asset class for AA4.	**Implement as proposed by the ERA**	Western Power has updated the revenue model depreciation calculation for the AA4 period consistent with the Draft Decision required amendment. Western Power notes that this applies only to the depreciation calculation for AA4 capex.	Not Applicable
Draft Decision Attachment 5 – Return on regulated asset base				
RA-05.01	The ERA does not approve Western Power's proposed average nominal post-tax WACC of 4.73 per cent for the AA5 period and requires Western Power to amend the nominal post-tax WACC to 7.10 per cent based on the parameters set out in Table 8 and the reasoning detailed in this Draft Decision.	**Implement as proposed by the ERA**	Western Power has amended the WACC in Section 5 (Price control) of the AAC in accordance with the Draft Decision required amendment.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
Draft Decision Attachment 6 – Operating expenditure				
RA-06.01	Provide evidence that the proposed reactive replacement of streetlights with LED globes will meet current streetlighting standards and has the lowest lifecycle cost.	**Implement as proposed by the ERA**	In response to this required amendment, Western Power notes its proposed opex for streetlighting represents the most cost-efficient option to support the reactive replacement of streetlights on a like-for-like basis and constitutes the lowest overall lifecycle cost. Western Power's current practice is to maintain public lighting assets to the applicable standard as at the date of original installation. Western Power is not proposing to upgrade luminaries on reactive replacement to align the current standard. Doing so would require substantial additional capex and opex to ensure complete compliance of the replacement luminaire and surrounding streetlight assets with the standard, which would put significant upward pressure on streetlight tariffs. See required amendment RA-08.08 for additional information.	Section 5.4.2.5
RA-06.02	Remove the proposed step change in opex for the silicone treatment program.	**Propose alternative – propose modified position**	Western Power has updated its position to include a step change for the silicone treatment program in its forecast opex for the AA5 period in response to the Draft Decision. As outlined in our Initial Proposal, the primary driver for this step change is to mitigate the risk associated with PTF due to the accumulated backlog caused by a safety related pause on the live-line silicone treatment program. Since the Initial Proposal, a more cost-effective live-line insulator replacement treatment has been introduced using silicone insulators that do not need further washing and silicone treatments over the lifetime of the insulator. Live-line replacement of at-risk insulators in highest fire consequence areas is the recommended option compared to de-energised silicone treatment if live-line silicone treatments are not safely available. These options form the basis of this Revised Proposal to replace insulators on 5,000 structures in 2022/23 and address the remaining insulators through live-line silicone treatment over the remaining four years of the AA5 period.	Section 5.4.2.1
RA-06.03	Amend the circuit lengths in the distribution network growth escalation factor to be consistent with Western Power's plans to convert parts	**Implement as proposed by the ERA**	Western Power has amended the circuit length in the distribution network growth escalation factor, consistent with the Draft Decision required amendment. Western Power also amended the transmission circuit length to reflect the latest forecast growth for the AA5 period.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	of the network to stand-alone power systems.			
RA-06.04	Amend the customer numbers transmission network growth escalation factor to use the number of transmission connections.	**Implement as proposed by the ERA**	Western Power has amended the customer numbers transmission network growth escalation factor to use the number of transmission connections, consistent with the Draft Decision required amendment and amended it to reflect the latest customer numbers. Western Power also updated the customer numbers distribution network growth escalation factor to reflect the most recent forecast of customer numbers for the AA5 period.	Not Applicable
RA-06.05	Remove growth escalation factors from corporate costs.	**Implement as proposed by the ERA**	Western Power has removed growth escalation factors from the forecast corporate costs for the AA5 period, consistent with the Draft Decision required amendment.	Not Applicable
RA-06.06	Decommissioning costs associated with the removal of overhead lines should be included in the capital costs of the project that leads to the need to remove the lines and should be depreciated over one year.	**Implement as proposed by the ERA**	Western Power has amended forecast opex to remove decommissioning costs and included these costs in the AA5 capex forecast in the Draft Decision asset replacement category with a standard life of one year, consistent with the Draft Decision required amendment. The updated capex forecasts are provided in Revised Proposal Attachment 3B.1 – Revised Capital Expenditure Model (confidential). Western Power notes this adjustment is for financial accounting purposes only.	Not Applicable
RA-06.07	Amend the productivity factor to two per cent per annum.	**Propose alternative – propose modified position**	Western Power has updated its position to include an opex productivity factor of 0.5 per cent per annum, based on analysis of industry practices. We note that the productivity forecast is intended to be a broad measure of industry productivity that is informed by trends in the electricity industry and other comparable sectors. It is not intended to impose a ‘productivity’ catch-up on networks that are not amongst the best performing networks. This approach is consistent with the Australian Energy Regulator’s (**AER**) current opex productivity assumption used in its base-step-trend opex forecasting methodology. Western Power is facing a number of challenging external factors impacting our costs, such as high inflation, rising interest rates, tightening labour markets and continuing supply chain constraints. Western Power is absorbing some of these cost pressures, including additional costs for the energy transformation program and related initiatives.	Section 5.4.3 Revised Proposal Attachment 6.1 - Forecast Cost Escalators for Western Power’s 2022-27 regulatory period

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			Absorbing these costs will require productivity improvements to create the expenditure 'headroom'. As such, imposing a higher productivity factor than 0.5 per cent per annum would set an unrealistic productivity target.	
RA-06.08	Forecast indirect expenditure must be amended to be consistent with the ERA's Draft Decision including: • Removing growth escalation. • Amending the productivity factor to 2 per cent.	**Propose alternative – propose modified position**	Western Power has amended forecast indirect expenditure to adjust the growth escalation and productivity factor consistent with the approach we adopted for direct opex outlined in RA-06.05 and RA06.07.	Section 5.4.4
RA-06.09	The labour escalation factor must be updated to reflect the latest forecast data and must be no higher than the forecast rate of productivity growth included in forecast opex.	**Implement as proposed by the ERA**	Western Power has updated the labour escalation rate to reflect the latest forecast data as at 31 August 2022, consistent with the Draft Decision required amendment. Western Power estimated the wage price index using the same approach the ERA applied in the AA4 period using the latest industry data. The updated inputs include a nominal wage price index of 3.15 per cent, which translates into a real labour cost escalation factor of 0.29 per cent for the AA5 period after adjusting for higher forecast inflation of 2.85 per cent.	Revised Proposal Attachment 6.1 - Forecast Cost Escalators for Western Power's 2022-27 regulatory period
RA-06.10	Forecast opex must be amended to be consistent with the ERA's Draft Decision.	**Propose alternative – propose modified position**	Western Power has amended the forecast AA5 opex in Section 5 (Price Control) of the AAC to $2,250.3 million ($2022 real) to address the Draft Decision required amendments, as noted in the responses to RA-06.01 to RA-06.09 above. As part of our review of forecast AA5 opex in response to the Draft Decision, Western Power identified additional cost increases that were not captured in our Initial Proposal. We have included additional forecast opex for additional step changes for: • insurance of $43 million: significant increases in insurance premiums forecast across the energy sector due to recent extreme climate events	Section 5.4.5

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			• SaaS movement of $28 million from ICT capex to opex for cloud-based SaaS solutions with a corresponding reduction in capex (new accounting treatment) • private poles inspections of $24.3 million: Management of PPAP in line with a holistic full inspection cycle, driven by obligations placed upon Western Power from a court judgment issued by the Supreme Court of Western Australia, Court of Appeals in July 2021. This was highlighted in our Initial Proposal as a potential new obligation to be included in this Revised Proposal.	
Draft Decision Attachment 7 – Other components of target revenue				
RA-07.01	Forecast taxation costs must be updated to be consistent with the revenue, operating costs and capital expenditure set out elsewhere in this Draft Decision.	**Implement in principle with modifications**	Western Power has amended the forecast taxation costs in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model taking into consideration our responses to other related required amendments.	Not Applicable
RA-07.02	The values of the weighted average cost of capital, smoothed target revenue, forecast capital expenditure and forecast operating expenditure used to calculate working capital must be adjusted to be consistent with this Draft Decision.	**Implement in principle with modifications**	Western Power has amended the working capital calculated in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model taking into consideration our responses to other related required amendments.	Not Applicable
RA-07.03	Amend the amount included in target revenue for the investment adjustment mechanism to reflect the capital expenditure reported in the annual regulatory accounts and update the 2021/22 capital	**Implement as proposed by the ERA**	Western Power has amended the investment adjustment in Section 5 (Price Control) of the AAC and Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model, consistent with the Draft Decision required amendment.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	expenditure to reflect actual expenditure.			
RA-07.04	Amend input errors in the calculation of the gain sharing mechanism adjustment and update 2021/22 costs to actual costs.	**Implement as proposed by the ERA**	Western Power has amended the gain sharing mechanism (**GSM**) in in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model, consistent with the Draft Decision required amendment.	Not Applicable
RA-07.05	The D-factor revenue adjustment must be updated to reflect actual costs for the 2021/22 financial year and the weighted average cost of capital approved by the ERA.	**Implement as proposed by the ERA**	Western Power has updated the D-factor adjustment in Section 7 (Adjustments to target revenue in the next access arrangement period) of the AAC and Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model to reflect actual costs for 2021/22 and the WACC approved by the ERA. Variations from the Draft Decision approved values are due to our responses to other required amendments in the Draft Decision.	Not Applicable
RA-07.06	The amount of deferred revenue included in target revenue must be updated to reflect the weighted average cost of capital approved by the ERA.	**Implement as proposed by the ERA**	Western Power has updated the amount of deferred revenue included in Section AAC.07 (Adjustments to target revenue in the next access arrangement period) and Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model to reflect the WACC approved by the ERA. Variations from the Draft Decision approved values are due to our responses to the other required amendments in the Draft Decision.	Not Applicable
RA-07.07	Amend the demand management innovation allowance to reflect the target revenue approved by the ERA.	**Implement in principle with modifications**	Western Power has updated the demand management innovations allowance included in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model taking into consideration our responses to the other required amendments in the Draft Decision.	Not Applicable
RA-07.08	Amend data errors in the AMI communications expenditure in the revenue model and update the adjustment to reflect the weighted average cost of capital approved by the ERA.	**Implement in principle with modifications**	Western Power has amended the data errors in the AMI communications expenditure in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model and updated the adjustment taking into consideration our responses to the other required amendments in the Draft Decision.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
RA-07.09	Regulatory reform costs must be updated to reflect actual expenditure for 2021/22.	**Implement as proposed by the ERA**	Western Power has updated the regulatory reform costs in Revised Proposal Attachment 1.1 - Revised AA5 Regulatory Revenue Model, consistent with the Draft Decision required amendment.	Not Applicable
Draft Decision Attachment 8 – Services				
RA-08.01	Amend the eligibility criteria for storage works and electric vehicle charging reference services as follows: "the connection point will use [storage works/electric vehicle charging] for the primary purpose of a [storage activity/electric vehicle charging activity] and may also be used for other purposes ancillary to a [storage activity/electric vehicle charging activity]".	**Implement as proposed by the ERA**	Western Power has amended the eligibility criteria for storage works and EV reference services in Section 2 (Reference Services) of the AAC and in Appendix E (Reference Services) of the AAC, consistent with the Draft Decision required amendment.	Not Applicable
RA-08.02	Amend the eligibility criteria for low voltage connected storage works and electric vehicle charging reference services as follows: The premises have an inverter system rated up to a total of ~~1~~ 3 MVA …	**Implement as proposed by the ERA**	Western Power has amended the eligibility criteria for low voltage connected storage works in Appendix E (Reference Services) of the AAC, consistent with the Draft Decision required amendment in relation to the primary purpose of the service. That is the 'sole purpose' eligibility criteria has been revised to 'primary purpose' (EV or storage service) and may also be used for other purposes ancillary to (EV or storage service). The inverter system for the storage services has been amended consistent with the Draft Decision required amendment to be rated up to a total of 3 megavolt ampere (**MVA**). Western Power proposes a modification to the required amendment for the eligibility criteria for the low voltage EV charging service. A limit of 2 MVA is recommended, representing a parallel connection to a 1 MVA transformer. Western Power notes this limit may be upgraded to 3 MVA where 1.5 MVA transformers are installed within the low voltage distribution network.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
RA-08.03	Include residential and business exit and bi-directional super off-peak demand services in the list of reference services.	**Implement as proposed by the ERA**	Western Power has amended the list of reference services in Section 2 (Reference Services) of the AAC and Appendix E (Reference Services) of the AAC to include residential and business exit and bi-directional super off-peak demand services, consistent with the Draft Decision required amendment. The following new services have been added to the list of exit services in Appendix E (Reference Services) of the AAC: • Reference Service A20 – Super Off-peak Time of Use Demand (Residential) Exit Service • Reference Service A21 – Super Off-Peak Time of Use Demand (Business) Exit Service. The following new services have been added to the list of bi-directional services in Appendix E of the AAC: • Reference Service C11 –Super Off-Peak Time of Use Demand (Residential) Bi-directional Service • Reference Service C12 – Super Off-Peak Time of Use Demand (Business) Bi-directional Service.	Not Applicable
RA-08.04	Amend Appendix E to allow users to elect between a five-minute or 30-minute interval data service.	**Implement in principle with modifications**	Western Power has generally amended the definitions and descriptions in Appendix E (Reference Services) of the AAC, consistent with the Draft Decision required amendment. Western Power has deviated from the Draft Decision required amendment under Clause E.1.3 to refer to "five minute settlement commencement" rather than "weekly settlement commencement" because five minute interval energy data for non-contestable metering installations is currently not available and will only be able to be provided following the commencement of five minute settlement expected in 2025.	Not Applicable
RA-08.05	Western Power must resolve the outstanding matters raised by users on the capacity allocation service and amend the reference service accordingly.	**Propose alternative – propose modified position**	Western Power has amended Reference Service D2 – Capacity Allocation Service in Appendix E (Reference Services) of the AAC for consistency with the intent of the capacity allocation service and the Access Code.	Section 5.5.1

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
RA-08.06	Amend the service description and eligibility criteria for Remote Load/Inverter Control Service D6 as follows: Service description: [A service] … to send a command to an activated device for the variable or binary control of a load or inverter at a connection point from a remote locality. Eligibility criteria: The activated device has capability enabled for the variable or binary control of electricity transferred through the connection point.	**Implement as proposed by the ERA**	Western Power has amended the service description and eligibility criteria for Reference Service D6 – Remote Load / Inverter Control Services in Appendix E (Reference Services) of the AAC, consistent with the Draft Decision required amendment. As a result of the changes to the Applications and Queuing Policy (**AQP**), Western Power is not proposing any changes to the Reference Service eligibility or requirements under Appendix E (Reference Services) of the AAC.	Not Applicable
RA-08.07	Amend the service description for all business energy-based reference services as follows: An [x] service combined with a connection service and a reference service (metering) at an exit point on the low voltage (415 volts or less) distribution system.	**Implement in principle with modifications**	Western Power has implemented this required amendment for the following business tariffs, recognising that existing AA3 and AA4 time of use tariffs will be closed to new entrants: • Reference Service A2 – Anytime Energy (Business) Exit Service (RT2 in the price list) • Reference Service C1 – Anytime Energy (Residential) Bi-directional Service (RT13 in price list) • Reference Service A19 – Super Off-peak Energy (Business) Exit Service (RT34 in price list) • Reference Service A21 – Super Off-Peak Demand (Business) Exit Service (RT36 in price list) • Reference Service C17 – Super Off-peak Energy (Business) Bi-directional Service (RT34 in price list)	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			• Reference Service A21 – Super Off-Peak Demand (Business) Exit Service (RT36 in price list). Western Power is proposing a modification to the eligibility criteria set out in Appendix E (Reference Services) of the AAC to facilitate access to practical tariffs during care and maintenance. The reasoning for this modification is set out below. In the Framework and Approach, the ERA requested Western Power to "*amend the business energy-based reference services to allow high voltage customers to access them*", noting that "*while [demand-based tariffs are] generally the most appropriate tariff structure for large customers connected to the high voltage network, the ability to access an energy consumption-based tariff if a site becomes vacant or there is a temporary drop in demand would better assist users to manage energy costs*" (emphasis added).[13] Synergy proposed in response to the ERA's AA5 Issues Paper to "*permit these (high voltage) customers to use the A2 and C2 reference services during periods of transitory demand reduction*".[14] Synergy did not agree with Western Power's proposed drafting of a "*throughput equal to zero for a period of greater than 12 months*", as "*typically, there will be some small consumption necessary for care and maintenance of the customer's facility such as security systems and lighting*".[15] A limit of 1,500 kVA was determined as appropriate to allow the initial intent of these tariffs being available only to customers with facilities, where those facilities are currently in care and maintenance. Western Power is proposing to modify the eligibility criteria to include a time limit under eligibility criteria 2(c) as set out below: • it is a high voltage (6.6kV or higher) *connection point* and Western Power determines, as a reasonable and prudent person, that the user's forecast maximum demand will be less than 1,500 kVA for a period of no greater than six months.	
RA-08.08	The Streetlighting Exit Service (A9) must be amended as follows: Western Power will	**Propose alternative – propose**	Western Power has not amended the streetlight exit service (A9) to include the Draft Decision proposed wording.	Section 5.5.2

13 ERA, *Framework and approach for Western Power's fifth access arrangement review,* Final Decision, 9 August 2021, pg. 19.

14 Synergy, *Western Power Access Arrangement No.5: Reference Services*, Submission to the Economic Regulation Authority, 20 April 2022, pg. 18.

15 Synergy, *Western Power Access Arrangement No.5: Reference Services*, Submission to the Economic Regulation Authority, 20 April 2022, pg. 18.

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	maintain the streetlighting assets to ensure that the streetlighting exit service continues to be provided to original design levels. If Western Power initiates a change in the type of luminaire installed in an existing asset, it must ensure the streetlight asset meets current public lighting standards (AS/NZS 1158). Replace or repair the lamps and luminaires where upon investigation the lumen output no longer meets the original minimum design levels. If Western Power replaces the luminaire with a different type of luminaire, it must ensure it meets current public lighting standards (AS/NZS 1158).	**modified position**	Western Power proposes to conduct further stakeholder engagement with the ERA and local government authorities (**LGAs**) to better understand stakeholder concerns with Western Power's current approach and develop a pathway to address those concerns where practicable, without placing significant upward pressure on tariffs paid by LGAs, noting that streetlight services retail tariffs are fixed by the Western Australian Government. As part of our undergrounding program, we will design new streetlighting assets to the current standard as part of this process and will continue to work with LGAs to undertake proactive upgrades of streetlighting assets where these upgrades make economic sense. This is set out in Appendix E (Reference Services) of the AAC.	
RA-08.09	Remove the words "the WEM Rules" from the eligibility criteria for reference services B1, B2 and D2.	**Implement as proposed by the ERA**	Western Power has amended the eligibility criteria for the following reference services set out in Appendix E (Reference Services) of the AAC, consistent with the Draft Decision required amendment: • Reference Service B1 – Distribution Entry Service • Reference Service B2 – Transmission Entry Service • Reference Service D2 – Capacity Allocation Service.	Not Applicable
RA-08.10	Western Power must resolve the outstanding matters raised by users on the services facilitating distributed	**Implement in principle with modifications**	Western Power has amended the AQP in Appendix B of the AAC to provide a clearer process with timeframes for network users to apply for and receive the B3 and C15 reference services, consistent with the Draft Decision required amendment. As a result of	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	generation or other non-network solutions and amend the reference services accordingly.		the changes to the AQP, Western Power is not proposing any changes to the Reference Service eligibility or requirements under Appendix E (Reference Services) of the AAC. Western Power proposes to retain the benefit calculation as currently set out in the Tariff Structure Statement. Western Power is proposing a two-step process to determine the eligibility of a project to receive a discount. The two-step process consists of a preliminary process outside of the AQP for applicants to determine the eligibility of their proposed initiative pursuant to consideration of the discount criteria published on Western Power's website. The intent of the discount criteria is to provide transparency on criteria that Western Power will consider when assessing an application as to whether it is likely to receive a discount. The discount criteria are intended to also include examples that outline: • the basis under which Western Power considers an applicant's facilities and equipment connected behind the connection point (including distributed generating plant and other non-network solutions) • the process Western Power will use to assess the reduction in Western Power's future network capital related costs or non-capital costs as a result of the relevant entry point being located in that particular part of the covered network. The discount criteria will also include an overview of all supporting information an applicant is expected to include in its application to allow Western Power to assess the applicant's initiative and, where relevant, calculate the discount applicable. The AQP will then provide the process for an applicant to have its application for a discount assessed that contains defined timeframes under which Western Power will provide its response to the applicant. The fee for a discount assessment will be set out in Western Power's price list. For a successful application, the calculation of the prudent discount amount will be conducted as part of this assessment. The method of calculation of the discount is set out in the Tariff Structure Statement (see Appendix F.1 of the AAC). Western Power's proposed drafting for the new Section 10.6 of the AQP is:	

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			10.6 Discounts in accordance with Sections 7.9 and 7.10 of the Code (a) As set out in Sections 7.1 and 7.2 of the *price list*, subject to payment of the relevant *fee* the *applicant* may in its *application* seek a discount to the tariff in respect of a *reference service* or a *non-reference service* in accordance with the discount criteria published on Western Power's website as amended from time to time (*discount criteria*) on the basis that its facilities and equipment connected behind the *connection point* (including *distributed generating plant* and other non-network solutions) will directly cause a reduction in Western Power's future *network capital related costs* or *non-capital costs* as a result of the relevant *entry point* being located in that particular part of the *covered network*. (b) The *applicant* will provide to Western Power together with its *application* all supporting information as set out in the *discount criteria*. (c) Western Power will provide a determination regarding the discount to the *applicant* within 45 business days of receiving the *application* for a discount specifying whether a discount is: (i) Approved, and if so the amount of the discount (including the method of calculation as set out in the price list). Western Power will then submit a discount offer to the *applicant* and implement the changes to the pricing in relation to the *relevant reference service* or *non-reference service* as soon as reasonably practicable; or (ii) Not approved, and if not the reasons why the discount is not approved.	
Draft Decision Attachment 9 – Service standard benchmarks and adjustment mechanisms				
RA-09.01	The service standard adjustment mechanism adjustment to target revenue in AA5 must be amended to reflect actual service standard performance for 2021/22.	**Implement as proposed by the ERA**	Western Power has updated the service standard adjustment mechanism (**SSAM**) in Attachment 1.1 (Revised AA5 Regulatory Revenue Model) consistent with the Draft Decision required amendment.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
RA-09.02	With the exception of rural long SAIDI, the transmission and distribution service standard benchmarks must be calculated based on the average performance over the AA4 period adjusted in AA5 for anticipated changes in service reliability and where individual penalty caps applied during the AA4 period. The rural long SAIDI must be no worse than the NQ&R Code standard of 290 minutes.	**Implement in principle with modifications**	Western Power has updated the transmission and distribution SSB consistent with the Draft Decision required amendments, with the exception of rural long system average interruption duration index (**SAIDI**) in Section 4 of the AAC. For rural long SAIDI, Western Power proposes an alternative position to calculate the benchmarks based on average performance during AA4, consistent with other SSB. This has been included in Section 4 of the AAC.	Section 5.6.1
RA-09.03	The call centre service standard benchmark in AA5 must be set on average performance over the AA4 period.	**Implement as proposed by the ERA**	Western Power has updated the call centre SSB in Section 4 of the AAC, consistent with the Draft Decision required amendment. As a matter of consistency with the other SSB, we have accepted the Draft Decision required amendments, however, as noted in our Initial Proposal, our customers prefer to experience call centre response times slightly longer than 30 seconds in exchange for us diverting our resources to engagement in other service channels available to them such as digital (e.g. Western Power website, Facebook, etc.) without any increase in cost. The Service Standard Performance Report for 2021-22 showed that the call centre performance has declined in recent months due to this focus towards digital communication and the need to respond to the increased volume of customer contact through those means, impacting the number of available call takers. We expect this trend to continue during AA5 as we continue this focus in line with our customers' preferences (as set out in Revised Proposal Attachment 9.1 – Community and Customer Engagement Program (CEP) Report), and we will continue to divert our resources towards greater digital engagement and develop our digital capabilities during AA5. We will collect performance data from both our phone and digital service channels over the AA5 period to enable us to propose relevant customer service performance measures for the AA6 period, which reflect the channels our customers use to engage with us. As	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			part of our normal access arrangement process, we will seek to test any new customer service performance measures and related benchmarks for the AA6 period in our CEP.	
RA-09.04	The service standard benchmarks for reference services D1 to D13 for AA5 must be amended to be consistent with the specific time periods specified in the Metering Code or Code of Conduct and apply to each individual performance of the relevant service.	**Implement in principle with modifications**	Western Power agrees in principle with the Draft Decision approach to measure the performance of each individual service type against the time periods specified in the Metering Code or Code of Conduct. We are proposing SSB that are based on the historical performance over the past five years. Based on our performance data over the past five years, the SSB will be 95 per cent. Western Power has updated the SSB for metering reference services in Section 4 of the AAC to reflect the above position.	Section 5.6.2
RA-09.05	The service standard targets in the service standard adjustment mechanism must be removed and replaced with the service standard benchmarks (as amended in this Draft Decision). The call centre performance measure should be retained in the service standard adjustment mechanism.	**Implement as proposed by the ERA**	Western Power has replaced the service standard targets (**SST**) in the SSAM with the SSB, consistent with the Draft Decision requirements in Section 7.5 of the AAC. Western Power has also updated the SSB as outlined in our responses to RA-09.02 to RA-09.04 above in Section 4 of the AAC.	Not Applicable
Draft Decision Attachment 10 – Expenditure incentives and other adjustment mechanisms				
RA-10.01	Amend the investment adjustment mechanism to include investment on the Network Renewal Undergrounding Program and standalone power systems.	**Implement as proposed by the ERA**	Western Power has amended the IAM in Clause 7.3.7 of the AAC to include investment undertaken for: • augmentation of the transmission system and distribution system under the current or succeeding underground power program • augmentation of the distribution system under the SPS.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
RA-10.02	Amend the drafting errors in the gain sharing mechanism formula.	**Implement as proposed by the ERA**	Western Power has amended the GSM formula in Clause 7.4.3 of the AAC consistent with the Draft Decision required amendment.	Not Applicable
RA-10.03	Amend the D-factor to remove the proposed inclusion of non-co-optimised essential system service costs.	**Implement as proposed by the ERA**	Western Power has amended the D-factor to remove the reference to non-optimised essential system service costs in Section 7.6.3 of the AAC, consistent with the Draft Decision required amendment. Notwithstanding this, Western Power remains concerned that non-optimised essential system service costs triggered by the Coordinator of Energy under Wholesale Electricity Market (**WEM**) Rules amendment 3.11A (gazetted in December 2021), may potentially not be recoverable under the D-factor mechanism where they do not relate to the deferral of a network augmentation.	Not Applicable
Draft Decision Attachment 11 – Network tariffs				
RA-11.01	Update the cost allocation and forecast revenue for each reference tariff to reflect the most recent actual and forecast energy and customer numbers and revised target revenue. • Provide at least the same level of information on the cost allocation, charging structures and indicative prices that was included in the price list information and price list provided for previous access arrangement reviews. This should	**Implement in principle with modifications**	Western Power has amended Table 41 of the AAC to provide the most recent forecast energy and customer numbers for the AA5 period, consistent with the Draft Decision required amendment. Amendments are set out in Appendix F.2 (Tariff Structure Statement – Technical Summary) of the AAC to address the Draft Decision required amendments. Each amendment is addressed in the following sections: • allocation of target revenue to individual reference tariff (Section 4) • tariff structures and charging parameters (Section 6) • compliance checklist (Section 9). The reference tariff change forecast set out in Appendix F.1 (Tariff Structure Statement – Overview) has been amended to provide a summary of the expected percentage changes of the fixed and variable components (in aggregate) of each reference tariff for each year of AA5. Western Power has modified this ERA requirement to not provide a breakdown of the expected tariff change forecast for each variable charging parameter for each reference tariff as we do not consider this disaggregated information will be useful to consumers. There would be a lack of visibility of the potential impact on customer bills as it will vary markedly depending on consumption profiles.	Sections 4, 6 and 9 of Appendix F.2 and Section 5 of Appendix F.1 of the AAC

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	include clear demonstration that the pricing principles and other Access Code requirements have been met. • Include sufficient detail in the reference tariff change forecast so that customers can understand how much individual components of the tariff are forecast to change and the likely effect on customers with a range of consumption profiles. The reference tariff change forecast must include all reference tariffs (including the proposed new tariffs) and the forecast overall change in reference tariffs.		Section 5.5 of Appendix F.1 (Tariff Structure Statement – Overview) outlines the expected customer bill impacts of Western Power's proposed network reference tariffs over the AA5 period consistent with the Draft Decision required amendment.	
RA-11.02	Update the cost allocation and proposed rebalancing between fixed and variable charges taking account of stakeholder	**Implement as proposed by the ERA**	Western Power has revised its approach to rebalancing between fixed and variable components compared with the Additional Tariff Structure Information and Indicative Price List published on 1 July 2022 in response to stakeholder concerns about the impact	Attachment 11.1 - Indicative 2023-24 Price Tables

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	concerns to develop a more gradual transition. This must include sufficient detail so that stakeholders can understand any rebalancing that is proposed over the AA5 period and the effect it will have on customers with a range of consumption profiles.		of increasing fixed charges too quickly, consistent with the Draft Decision required amendment. In Attachment 11.1 - Indicative 2023-24 Price Tables, Western Power is proposing to increase the fixed component of residential reference tariffs from 89.74 cents per day to 94.90 cents per day in 2023-24 broadly in line the increase in our target revenue target in that year, and then remain relatively flat in nominal terms for the remainder of the AA5 period. Western Power's small business reference tariffs are designed for customers of different connection sizes, which is reflected in the magnitude of the fixed charge for each small business reference tariff. However, a similar approach is proposed for small business customers reference tariffs, with the fixed component increasing from 168.46 cents per day to 178.14 cents per day on the anytime energy business reference tariff.	
RA-11.03	Demand-based time of use tariffs must be included for residential and commercial customers. The time of use periods must be consistent with the super off-peak tariffs.	**Implement as proposed by the ERA**	Western Power has amended Section 6 (Price List information) of the AAC and Appendix F.2 (Tariff Structure Statement – Technical Summary) of the AAC to include the following demand-based time of use tariffs: • Reference Service A20 – Super Off-peak Time of Use Demand (Residential) Exit Service • Reference Service A21 – Super Off-Peak Time of Use Demand (Business) Exit Service • Reference Service C18 –Super Off-Peak Time of Use Demand (Residential) Bi-directional Service • Reference Service C19 – Super Off-Peak Time of Use Demand (Business) Bi-directional Service.	Section 3.1 of Appendix F.1 of the AAC
RA-11.04	Modify the proposed tariff for electric vehicle charging reference services to take account of the matters raised in the stakeholder submissions received by the ERA.	**Implement as proposed by the ERA**	Western Power has engaged with various stakeholders to develop and revise the dedicated EV charging tariff published in the Additional Tariff Structure Information and Indicative Price List published on 1 July 2022. Western Power maintains a sliding scale of volumetric and demand charges strikes an appropriate balance between:	Section 3.3 of Appendix F.1 of the AAC

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			• supporting EV charging stations during the initial uptake of EVs, when their utilisation is low • ensuring that EV charging stations make a fair contribution to the recovery of network costs as their utilisation increases (that is, a contribution commensurate with that of other customers that impose similar costs on the network, particularly as a result of their high demand, which has the potential to exacerbate coincident peak network demand in a small, isolated electricity network like the SWIS). However, as set out in Appendix F.1 (Tariff Structure Statement – Overview) Western Power has revised elements of the measure of utilisation to provide strong support to EV charging stations during this access arrangement period, that is, the calculation of network use by an EV charging site. This has been achieved by increasing the demand threshold and exempting the super off-peak period between 9am and 3pm from the calculation of network use. To further incentivise the deployment of EV charging infrastructure over AA5, Western Power proposes to exempt users from paying for capacity charges when their use of the network is low. Capacity charges will be incurred only after a charging site use of the network exceeds a defined threshold.	
RA-11.05	Consider the stakeholder feedback received and engage further with stakeholders to refine the proposed storage tariffs.	**Implement as proposed by the ERA**	As set out in Appendix F.1 (Tariff Structure Statement – Overview), Western Power has considered the feedback received from stakeholders on the proposed distribution connected storage tariffs, consistent with the Draft Decision required amendment. We are proposing not to include default rewards for distribution connected storage services that export energy during the evening peak, as suggested by stakeholders. This is because of the very low level of avoidable costs in the evening peak period, as reflected in our very low estimate of Long Run Marginal Cost (**LRMC**). The conversion of our import LRMC into a peak export reward would result in a reward of only $0.01 per kWh for exports during the on-peak period, which is unlikely to precipitate a change in a distribution-connected battery's behaviour – the objective of any export reward – and will outweigh the transaction costs of implementing such an arrangement. Following feedback on our initial Tariff Structure Statement, Western Power engaged with stakeholders and has developed a revised tariff structure for transmission connected batteries that is similar to the tariff applying to transmission-connected generators (rather than transmission-connected loads). Our tariff for transmission-connected storage	Section 3.2 of Appendix F.1 of the AAC

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
			therefore comprises multiple, location specific and cost-reflective prices, and is individually calculated for each customer. This tariff structure is distinct from that applying to distribution-connected storage because of the fundamentally different circumstances that apply on our transmission network, that is: • low load events do not occur on our transmission-network, such that additional imports in the middle of the day do not avoid future network costs, which negates the need for a solar soak period • transmission-connected generators/storage are connected upstream from the distribution assets that can become constrained during times of peak demand. The absence of the various charging windows that apply to distribution-connected storage also provide more flexibility for transmission-connected storage providers to enter contracts with AEMO to provide essential system services and to respond freely to those wholesale market signals. Against this backdrop, Western Power encourages transmission-connected storage service providers to provide network support services in accordance with the WEM Rules for any non-co-optimised essential system services (**NCESS**).	
Draft Decision Attachment 12 – Policies and contracts				
RA-12.01	Amend Clause 9(a) of the standard access contract to require Western Power to act as a Reasonable and Prudent Person when determining if there is a material risk that a User will be unable to meets its liabilities under the contract and the form of documents required for the indemnifier. (page 16)	**Implement as proposed by the ERA**	Western Power has amended Clause 9(a) of the standard access contract, consistent with the Draft Decision required amendment. Amendments are set out in Appendix A (Model Electricity Transfer Access Contract) of the AAC.	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
RA-12.02	Amend Clause 9(b)(ii) of the standard access contract to require Western Power to act as a Reasonable and Prudent Person when deciding whether the arrangements for a cash deposit are acceptable. (page 17)	**Implement as proposed by the ERA**	Western Power has amended Clause 9(b)(ii) of the standard access contract, consistent with the Draft Decision required amendment. Amendments are set out in Appendix A (Model Electricity Transfer Access Contract) of the AAC.	Not Applicable
RA-12.03	Amend the applications and queuing policy to reinstate the streetlight LED replacement service (D10). (page 28)	**Implement as proposed by the ERA**	Western Power has amended the Clause 10.1 of the AQP, consistent with the Draft Decision required amendment. Amendments are set out in Appendix B (Applications and Queuing Policy) of the AAC.	Not Applicable
RA-12.04	Amend Clause 4.9(d) of the applications and queuing policy to remove "and for the purposes of determining the terms and conditions of". (page 23)	**Implement as proposed by the ERA**	Western Power has amended Clause 4.9(2) of the AQP, consistent with the Draft Decision required amendment. Amendments are set out in Appendix B (Applications and Queuing Policy) of the AAC.	Not Applicable
RA-12.05	Western Power must resolve the outstanding issues raised by users on the application process for distributed generation or other non-network solutions and amend the applications and queuing policy accordingly. (Section 7.1 page 25 & Section 10.1 page 28)	**Implement in principle with modifications**	Western Power has amended the Clause 10.5 and 10.6 of the AQP in Appendix B of the AAC to provide a clearer process with timeframes for network users to apply for and receive the B3 and C15 reference services, consistent with the Draft Decision required amendment. Further information is provided in response to RA-08.10 above.	Not Applicable
RA-12.06	The timelines in the applications and queuing policy must be defined clearly and as short as reasonably possible with requirements to provide	**Implement in principle with modifications**	Western Power has amended the Clause 17 of the AQP in Appendix B of the AAC by clarifying the process and each of the phases involved. In order to provide more up to date information to customers, indicative timing will be published on our website from 1 July 2023 and revised regularly for currency, taking into	Not Applicable

RA#	ERA required amendment	Western Power response	Notes and cross reference to access arrangement	Further details
	updates to applicants on progress and likely time to completion. (Section 3.2 page 16)		account process improvement, new requirements and other influencing factors. The AQP will now refer to the Western Power website for more detailed information.	
RA-12.07	Remove the proposed transitional year from the multi-function asset policy. (Section 8 of the Attachment-13.5---Multi-Function-Asset-Policy-Explanatory-Statement - page 15)	**Implement as proposed by the ERA**	Western Power has removed the proposed transitional year from Section 8 of the Revised Proposal Attachment-12.1-Multi-Function Asset Policy Explanatory Statement, consistent with the Draft Decision required amendment.	Not Applicable
RA-12.08	Clarify the intention of step 4 in the multi-function asset policy decision-making framework and ensure that it is consistent with the Access Code and multi-function asset guideline requirements. (Section 3.2 page 11)	**Implement as proposed by the ERA**	Western Power has removed step 4 in Section 3.2 of the Multi-Function-Asset-Policy in Appendix D of the AAC and made further amendments to ensure that it is consistent with the Access Code and multi-function asset guideline requirements, consistent with the Draft Decision required amendment.	Not Applicable
RA-12.09	Amend the multi-function asset policy to remove the proposed deduction of operational costs from net incremental revenue. (Section 5.2 Calculation of Net Incremental Revenue - page 18)	**Implement as proposed by the ERA**	Western Power has amended Section 5.2 of the Multi-Function-Asset-Policy in Appendix D of the AAC to remove the proposed deduction of operational costs from net incremental revenue, consistent with the Draft Decision required amendment.	Not Applicable
RA-12.10	Remove Section 6 that relates to the calculation of the reduction to target revenue from the multi-function asset policy. (Section 6 - page 22)	**Implement as proposed by the ERA**	Western Power has removed Section 6 of the Multi-Function-Asset-Policy in Appendix D of the AAC relating to the calculation of the target revenue, consistent with the Draft Decision required amendment.	Not Applicable

5. Further discussion on key required amendments

53. This section provides information on a number of key amendments that the ERA requested more information on, that require more detailed explanation of how they have been implemented or how the matters that contributed to the Draft Decision required amendment have been addressed.

54. The purpose of this additional commentary is to provide the ERA and network users visibility of how Western Power's Revised Proposal is consistent with Access Code requirements (including the Code objective) and the context in which amendments have been made.

5.1 Price Control and Target Revenue (Draft Decision Attachment 1)

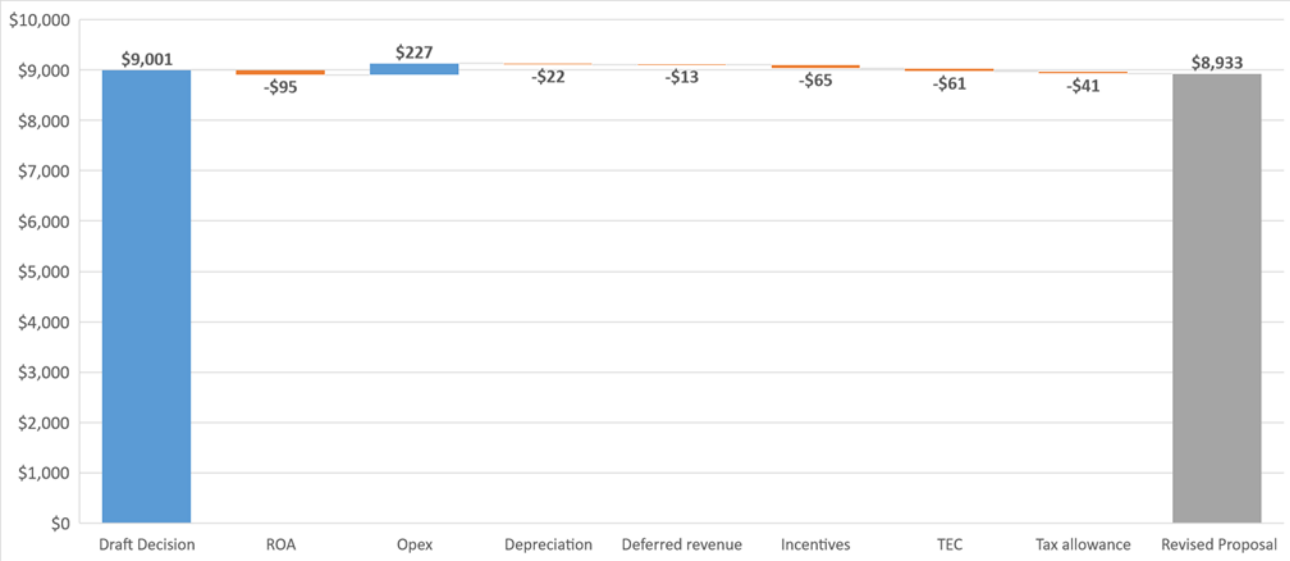
55. Western Power's revised proposed revenue requirement for the AA5 period is $8,933 million (smoothed $ nominal), slightly lower than the Draft Decision revenue of $9,001 million (on the same basis).

56. The target revenue allowance comprises the following building blocks:

- return on assets (**ROA**), which is a function of the capital investment and rate of return (or WACC) on those assets
- opex
- depreciation
- deferred revenue recovery
- incentive schemes and other adjustments
- TEC
- tax allowances.

57. The Draft Decision includes a number of required amendments which impact the different building blocks of target revenue spread across many of the Draft Decision Attachments. Figure 5.1 below shows the movement in total smoothed revenue ($ million nominal) by building block from the Draft Decision to Western Power's Revised Proposal.

Figure 5.1 Changes in revenue from Draft Decision to Revised Proposal by building block ($ million nominal smoothed)



58. An explanation of the movements by building block is provided in Table 5.1 below.

Table 5.1 Movement in building blocks from Draft Decision to Revised Proposal

Building Block	Explanation of movement
ROA	Reflects Revised Proposal capex outlined in Section 5.3 and Draft Decision required amendments: • RA-02.01 to update opening RAB to reflect 2021/22 actual capex • RA-05.01 to update WACC to 7.10 per cent.
Opex	Reflects Revised Proposal forecast opex outlined in Section 5.4.
Depreciation	Reflects Revised Proposal capex outlined in Section 5.3 and Draft Decision required amendments: • RA-02.01 to update opening RAB to reflect 2021/22 actual capex • RA-04.01, RA-04.02, RA-04.03 to update depreciation lives for some assets and update the revenue model depreciation calculation.
Deferred revenue recovery	Reflects Draft Decision required amendment RA-07.06 to update the revenue model calculation of deferred revenue to reflect a WACC of 7.10 per cent.
Incentive schemes and other adjustments	Reflects Draft Decision required amendments RA-07.02, RA-07.03, RA-07.04, RA-07.05, RA-07.07, RA-07.08 and RA-07.09, in particular to update 2021/22 capex and opex to reflect actual expenditure.
TEC	Reflects the most recent forecast of the TEC[16].
Tax allowances	Reflects Draft Decision required amendment RA-07.01 to update the calculation of taxation costs to reflect the updated inputs included for other building blocks as part of this Revised Proposal.

16 Western Australian Government Gazette 76 published on 10 June 2022.

5.1.1 RA-01.01 Revenue adjustment

59. In its Draft Decision, the ERA required Western Power to remove the proposed adjustment for under/over recovery of revenue for the 2022/23 financial year.

60. Western Power has not amended clause 5.7.3 to remove the proposed adjustment for under/over recovery of revenue for the 2022/23 financial year.

61. The adjustment to target revenue in the year ended 30 June 2025 has been proposed to allow Western Power to recover the difference, be it higher or lower, between the approved target revenue for the first year of AA5 (being the year ended 30 June 2023), and the actual revenue received from applying the price list for the year ended 30 June 2022 in that first year of AA5. This adjustment is required due to the target commencement date of AA5 being 1 July 2023 and the Framework and Approach decision that Western Power's current price list will apply until the revised access arrangement comes into effect. The revenue adjustment proposed in Clause 5.7.3 is consistent with the revenue adjustment included in the fourth AAC.

62. Western Power notes the Draft Decision states *"the ERA will account for this in its Final Decision in March 2023 by subtracting the latest forecast revenue for the 2022/23 financial year from the approved total target revenue for the AA5 period to determine the amounts of target revenue that will need to be recovered over the remaining four years of the access arrangement period"*.[17]

63. Western Power recognises the ERA is proposing to apply a similar adjustment concept to that proposed in our Initial Proposal. However, the ERA is proposing to adjust for the latest forecast of revenue for the year ended 30 June 2023, not the actual revenue earned in the year ended 30 June 2023 as per our proposal. Western Power considers any adjustment should be based on actual revenue received in the year ended 30 June 2023 as this reflects a more accurate position. For this reason, Western Power is maintaining the adjustment in clause 5.7.3 for the under/over recovery of actual revenue earned in the 2022/23 financial year.

5.1.2 RA-01.02 Demand forecast

64. In its Draft Decision, the ERA required Western Power to include the most recent demand forecast available. Western Power has implemented this amendment and provides the most recent demand forecast as Revised Proposal Attachment 1.3 - Energy and Customer Numbers Forecast Report (2022).

65. Western Power updates the demand forecast on an annual basis to incorporate latest inputs. The Initial Proposal and Draft Decision used Western Power's 2020 demand forecast which was the latest available forecast prior to the Initial Proposal being submitted. This Revised Proposal is based on Western Power's most recent 2022 demand forecast.

66. Table 5.2 below summarises the key forecast data from the most recent Energy and Customer Numbers Forecast Report.

Table 5.2 Total sales

	2022	2023	2024	2025	2026	2027
Total actual sales (GWh)	18,415					
Total forecast sales (GWh)	18,091	18,117	18,015	17,852	17,737	17,534

17 ERA, *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 1: Price control and target revenue, 9 September 2022, p.7.

67. The key movements in the most recent demand forecast are:

- actual consumption in 2022 of 18,415 GWh was higher than previously forecast (at 18,091 GWh) due to the sharp increase in residential consumption during the COVID-19 pandemic more than offsetting the reduction in consumption from commercial premises and the construction industry. This shift primarily impacted distribution export sales, with transmission consumption remaining stable
- total electricity export sales are still expected to trend down slightly over the forecast period, from 18,117 GWh in 2023 to 17,534 GWh in 2027. Adoption of DER and the growth of new connections (i.e. National Metering Identifiers (**NMIs**)) are identified as key trend drivers:
  - the persistent downward trend in energy delivered is largely due to continuing growth in DER, particularly solar photovoltaic (**PV**) electricity generation systems. DER is an alternative to grid-delivered electrical power services, with each 1 MVA of additional solar PV reducing energy delivered through the network by about 10 kWh
  - prior to 2020, there was an average of 19,000 new residential NMIs per annum. This average fell to 13,000 NMIs per annum and is forecast to be around 14,000 per annum over the forecast period, based on current dwelling approvals. However, recent interest rate increases, and high property valuations may dampen demand for new connections.
- prospects for EV adoption have been considered; however, they have been excluded as a major driver for the most recent demand forecasts as adoption rates are expected to remain relatively low until 2027. Uncertainties around EV adoption rates and thus the required network response are evident through the ongoing scenario modelling being undertaken by many industry bodies. For example, if actual adoption rates follow the CSIRO's most recent EV Step Change scenario projection of around 200,000 EVs in Western Australia in 2027, the increase in energy consumption and related network response could be significant.

68. Further information on the key trends is available in the updated Revised Proposal Attachment 1.3 - Energy and Customer Numbers Forecast Report (2022).

5.2 AA4 Capital Expenditure (Draft Decision Attachment 3A)

5.2.1 RA-03A.02 CMS efficiency savings

69. In its Draft Decision, the ERA recognised the $24.9 million capital cost (nominal) of the CMS project and included it in the RAB subject to Western Power demonstrating that it had achieved the efficiencies equal to the expenditure and incorporated those in the AA5 forecast

70. The CMS was commissioned in 2019. It was designed and delivered in two phases:

- phase 1: Comprising initiatives directly related to replacing the obsolete network customer information system (**NetCIS**) system which was no longer fit for purpose; the replacement of NetCIS was essential to enable Western Power to maintain current service levels; the Phase 1 capex was $10.7 million (nominal)
- phase 2: Comprising initiatives to achieve two objectives:
  - maintain service levels – by undertaking initiatives which enable compliance, maintain safety, and replace remnant obsolete components at a capital cost of $4.1 million (nominal)

– improve service levels – by undertaking initiatives designed to respond to (i) customer feedback about issues with our current service offering, (ii) Energy Policy Western Australia (**EPWA**) feedback on the AQP process, and (iii) enable much better communications with customers and to reduce costs; the initiatives collectively cost $10.1 million capex (nominal).

5.2.1.1 Application of the NFIT requirements to the CMS project

71. Western Power considers that applying Section 6.52 of the Access Code (the NFIT) to the CMS project results in the following:

- phase 1 capex complies with s6.52(b)(iii) of the NFIT on the basis that it was required to maintain services and therefore demonstrating a net benefit is not required to satisfy the test
- phase 2 capex invested to maintain services similarly satisfies s6.52(b)(iii) of the NFIT and therefore demonstrating a net benefit is not required to satisfy the test
- phase 2 capex invested to improve services is required to satisfy s6.52(b)(ii) of the NFIT and therefore a net benefit must be demonstrated by Western Power to satisfy the test
- the ERA has not raised any concern that Section 6.52(a) of the NFIT (the efficiency test) is not satisfied.

5.2.1.2 Benefit analysis

Western Power has determined that the net benefit for the service improvement component of phase 2 is minus $1.9 million[18] based on tangible, realised and realisable benefits of $7.3 million (present value over a 10 year period). The NPV over 15 years is positive. However, in addition to these quantified benefits, there are also significant customer benefits (primarily saved time to access and receive services and additional information through various channels)[19] and other intangible benefits.

72. Other intangible benefits from the completion of the CMS project include:

- providing the foundational technology to enable improvements to customer and stakeholder communications in the lead up to, and during outage events, aligned with the requirements of the Shepherd Report
- enabling Western Power to improve the connection process[20] and to respond to a requirement from the ERA[21] to enable monitoring of connection process timing and improve transparency of the applications process
- introducing a virtual assistant to enable customer online self-reporting of faults (power and streetlight) and respond to metering and vegetation agent queries
- reducing the costs of future ICT projects due to the investment in foundational technology as part of the CMS project
- addressing metering non-compliance by enabling a mobile friendly self-read app.

---

18 NPV of -$1.9 million = $7.28 million PV benefit less $9.15 million PV cost (10-year study period).

19 Which the AER has accepted (when reasonably estimated) by Network Service Providers in the National Electricity Market (in accordance with the National Electricity Rules) for similar customer service improvement initiatives, noting also that the Electricity Network Access Code objective is aligned to the National Electricity Objective in this regard.

20 Refer to Appendix B Applications and Queuing Policy.

21 Required Amendment 6 - Draft Decision on proposed revisions to the access arrangement for the Western Power network 2022/23 – 2026/27 - https://www.erawa.com.au/cproot/22859/2/Attachment-12---Policies-and-contracts.PDF

5.2.1.3 Conclusion

73. Western Power considers that the appropriate application of the NFIT test results in Western Power having to demonstrate a net benefit from the investment of $9.1 million capex (in present value terms) in service improvement initiatives. Western Power has determined that the tangible, quantified net benefit is -$1.9 million (over 10 years).

74. However, this quantified net benefit does not include monetisation of intangible benefits (which Western Power has not undertaken), such as the improved customer experience or time saved by customers from the CMS, nor the reduced cost of future ICT initiatives because of the foundational investment in CMS.

75. For its Final Decision, Western Power submits that the ERA should take into account the tangible and intangible benefits for the 'service improvement' component of the investment along with the fact that $14.8 million of these investment meets the NFIT by reference to Section 6.52(b)(iii), and find that the $24.9 million (nominal) investment satisfies the NFIT.

5.3 AA5 Capital Expenditure (Draft Decision Attachment 3B)

76. Western Power's revised capex forecast for the AA5 period is $4,525 million ($2022 real, excluding indirect costs and labour escalation). This is 11.4 per cent higher than the Draft Decision for forecast capex of $4,061 million (on the same basis) and 2.2 per cent lower than our Initial Proposal of $4,629 million (on the same basis).

77. In preparing this Revised Proposal, we have considered customer requirements, the emerging challenges Western Power is facing from external factors including increased cyber security risks, increased focus on reliability and the rapidly accelerating decarbonisation. Where it is possible to accept the Draft Decision, without significantly compromising safety and reliability, we have done so. For aspects of the Draft Decision we have not accepted, we have provided further detailed information and analysis to explain and justify the proposed expenditure.

78. Key movements in our forecast capex (compared with the Draft Decision) reflect:

- an additional $83.4 million in growth capex for the transmission network for decarbonisation planning during the AA5 period, consistent with the Western Australian Government's Sectoral Emissions Reduction Strategy planning
- amendments to the asset replacement and renewal capex for the distribution network, including:
  - adding $31.3 million for overhead line decommissioning costs, as per the Draft Decision required amendment for opex (RA-06.06)
  - removing the costs of dual element metering ($27.5 million)
- an additional $115.6 million in capacity expansion capex for the distribution network to reflect the updated energy forecasts following the Christmas 2021 heatwave and further improve network planning criteria aligned with the Shepherd Report recommendation
- an additional $190.1 million for capex in the compliance category for the distribution network, comprising:
  - $182.0 million to partially address the Draft Decision required amendments relating to service standards for rural long feeders

- $8.1 million for insulator replacement (in 2022/23 only)

- an additional $60.8 million for SCADA and Telecommunications to address cyber risks, provide capability for the master station to manage cyber risks and enable communications with SPS assets
- an additional $39.0 million for Corporate IT to manage cyber risks and meet customer communication requirements stemming from the recommendations of the Shepherd Report, which is offset by a reduction of $28.2 million relating to ICT expenditure being classified as SaaS.

79. Our revised capex forecast is provided in Revised Proposal Attachment 3B.1 – Revised Capital Expenditure Model (confidential) and summarised in Table 5.3.

Table 5.3 Summary of Revised Proposal for forecast capex ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Capex category	Initial Proposal	ERA Draft Decision	Revised Proposal	Notes
Transmission Network				
Asset replacement and renewal	293.2	207.9	207.9	Implement as proposed by the ERA. Further information is provided in Section 5.3.1.
Growth	291.7	291.7	375.1	Propose Alternative – Propose Modified Position. Further information is provided in Section 5.3.2.
Improvement in services	0.0	0.0	0.0	Implement as proposed by the ERA.
Compliance	161.0	161.0	161.0	Implement as proposed by the ERA.
Subtotal – Transmission	**745.9**	**660.6**	**744.0**	
Distribution				
Asset replacement and renewal	2,017.9	1,786.2	1,790.0	Propose Alternative – Propose Modified Position. Further information is provided in Section 5.3.3.
Growth	773.4	773.4	889.0	Propose Alternative – Propose Modified Position. Further information is provided in Section 5.3.4.
Improvement in services	0.2	0.2	0.2	Implement as proposed by the ERA.

Capex category	Initial Proposal	ERA Draft Decision	Revised Proposal	Notes
Compliance	215.2	215.2	405.3	Implement in principle with modifications. Further information is provided in Section 5.3.5.
Subtotal – Distribution	**3,006.8**	**2,775.1**	**3,084.5**	
Other				
SCADA and Telecommunications	413.1	289.2	350.0	Propose Alternative – Propose Modified Position. Further information is provided in Section 5.3.5.2.
Corporate – business support	130.5	102.9	102.9	Implement as proposed by the ERA. Further information is provided in Section 5.3.7.
Corporate – ICT	332.8	233.0	243.8	Propose Alternative – Propose Modified Position. Further information is provided in Section 5.3.8.
Total	**4,629.1**	**4,060.8**	**4,525.2**	

80. The forecasts included in this Revised Proposal are based on, and supported by, our robust and accredited asset management systems and investment governance framework. Western Power's Asset Management Framework is set within the context of the Australian and International Standard on Asset Management (ISO55001:2014), ERA Audit Guidelines, *Electricity (Network Safety) Regulations 2015* and Electricity Network Safety Management Systems standard (AS 5577-2013).

81. This framework underpins Western Power's Asset Management Policy and defines the structure of Western Power's Asset Management System (**AMS**). Western Power's AMS supports risk-based decision making and sustainable management of network assets, as per the requirements of Western Power's transmission and distribution licences and other compliance requirements.

82. Western Power's risk-based approach to asset management and investment governance reflects industry best practice, as noted by the ERA's consultant, Engevity, who noted that:

> *"Western Power benchmarks well against similar networks in the National Electricity Market (**NEM**) and has robust capex governance and asset management processes that align with good industry practices".*[22]

83. Western Power's AMS has undergone a range of independent assessments for maturity, adequacy and application. The AMS was certified to the International Standard for Asset Management ISO55001:2014 in August 2019. The ISO55001:2014 assessment (completed in July 2019) found that:

[22] ERA, *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23-2026/27: Attachment 3A: AA4 Capital Expenditure*, pg.12.

"Western Power has a number of industry leading practices, particularly in the areas of asset risk management and the "line of sight" linkages to organisational objectives, as well as the optimisation and prioritisation of programs and projects".[23]

84. Further supporting information where we have proposed an alternative position to the Draft Decision required amendment for our specific capex programs are provided in the subsequent sections.

5.3.1 Transmission – Asset replacement and renewal

85. Western Power's Initial Proposal included investment of $293.2 million in asset replacement and renewal for the transmission network in the AA5 period. This category of expenditure includes power transformers, protection, static vars compensators, switchboards, power conductors and primary plant.

86. In its Draft Decision, the ERA reduced this investment to $207.9 million, a reduction of $85.3 million (29.1 per cent) across the AA5 period. The ERA did not specify which specific asset classes the reduction in expenditure should be applied to, noting only that the expenditure should reflect AA4 levels.

87. Western Power accepts deferral of some replacement and renewal capex may be achievable without significantly compromising safety and reliability. However, there are risks associated with the reduced capex profile which will need to be managed during the AA5 period. These risks include:

- deferring power transformer replacements would likely result in a breach of the maximum target for functional failures of the transformers. This could have significant impacts on reliability for our customers, with the possibility of rolling blackouts if multiple failures occur at the same time. Each power transformer covers a large number of customers, which means that a failure can have widespread impacts
- deferring replacement of primary plant would result in breaches of the maximum target for failures, risk ratings and risk index targets and likely result in the following consequences:
  - insufficient ability to operate the network, particularly in emergency situations, which would amplify the impacts of a power transformer or line failure. This would not only increase customers impacted by a major unplanned outage event but also increase the outage duration as it would be harder to transfer loads
  - as assets deteriorate, they become unreliable to be used in contingency to allow planned works so less maintenance is carried out, creating a negative feedback loop that will accelerate deterioration and further increase failures
  - restrictions to generation and curtailment of major industrial loads (e.g. mining operations) become more likely
  - increased risk of primary plant failing explosively and projecting shrapnel, potentially causing harm to Western Power staff and the public
  - increase in work related injuries from operating defective primary plant. Primary plant assets are an interface between operator and the network and certain defective assets can cause back and neck injuries if operated
  - increase in oil and gas leaks with a higher likelihood of environmental damage. Primary plant doesn't hold as much oil as power transformer, however there are thousands of these

[23] Lloyd's Register, *Stage 2 Assessment Report for: Electricity Networks Corporation trading as Western Power*, July 2019.

assets in the network so the combined effect of many leaks can amount to significant environmental damage.

- deferring replacement of protection assets will lead to a greater rate of failure with a higher proportion of assets operating beyond their mean replacement life (**MRL**). It will make the management of obsolete electrical mechanical relays even more challenging, with a combination of already high number of obsolete relays and an aged population that fails relatively early.

88. We intend to manage this adjustment with a combination of reprofiling and optimisation in delivery (by combining treatments for different transmission plant at the same time) to minimise the impact of the reduction in the replacement forecast. Specifically, Western Power will adopt the following approach to mitigate these risks during the AA5 period:

- **power transformers:** Western Power will manage required reductions by applying a more stringent prioritisation based on risk. However, the adjustment is expected to negatively impact power transformer performance . Therefore, the following considerations need to be made:
  - we will need to revise the target maximum failures
  - we will keep the maximum risk index target, but apply the caveat that the target may be breached in some load areas (localised impact)
  - customer risks assessment is expected to increase from medium to high.
- **primary plant:** We intend to manage the proposed adjustment by applying a more stringent prioritisation based on risk and optimisation of delivery in an attempt to minimise the impact of the reduction in the replacement forecast. However, the adjustment is expected to negatively impact primary plant performance. Therefore, the following considerations need to be made:
  - we will need to revise the target maximum failures for the impacted asset classes
  - we will keep the maximum risk index target but applying the caveat that the target may be breached in some load areas (localised impact) and will need to revise the target during AA5 depending on how assets with existing conditions deteriorate over the period, considering the current challenging operational environment (two-way power flow, increased network instability)
  - there may be implications for customer, workforce safety and environmental risk ratings.
- **protection:** We intend to manage this adjustment with a combination of reprofiling and optimisation in delivery to minimise the impact of the reduction in the replacement forecast. However, the adjustment is expected to impact on protection performance therefore the following considerations need to be made:
  - we will revise the target maximum failures
  - the proportion of assets operating beyond their MRL will increase from 43 per cent to 49 per cent
  - management of obsolescence of electrical mechanical relays will be more challenging, noting that Western Power's obsolescence challenge is already severe, with a combination of a high number of obsolete relays and an aged population that fails relatively early
  - safety and customer risk ratings are expected to increase from medium to high.

89. Taking into consideration our concerns and proposed approach for managing the risks, Western Power has reduced forecast asset replacement and renewal capex for the transmission network to $207.9 million, in accordance with the Draft Decision required amendment. Our reduced forecast is summarised in Table 5.4.

Table 5.4 Western Power's proposed transmission asset replacement and renewal capex for AA5 ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Asset replacement and renewal	293.2	207.9	45.0	44.2	39.7	39.1	39.9	207.9

5.3.2 Transmission – Growth

90. Western Power's Initial Proposal included investment of $291.7 million in growth capex for the transmission network in the AA5 period. This category of expenditure includes capacity expansion capex and customer driven capex, with capital contributions of $163.0 million offsetting the capex that is added to the RAB.

91. In its Draft Decision, the ERA accepted Western Power's forecast growth capex, largely because it reflected AA4 level of growth capex.

92. However, new requirements have since arisen for Western Power to support the Western Australian Government's decarbonation plans. Western Power has therefore amended the growth capex by an additional $83.4 million to account for these new requirements.

93. Our revised forecast growth capex for the transmission network is $375.1 million. Forecast growth net capex, after allowing for forecast capital contributions of $163.0 million, is $212.2 million.

94. Our revised growth capex for the transmission network is summarised in Table 5.5.

Table 5.5 Western Power's proposed transmission growth net capex for AA5 ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Growth	128.7	128.7	34.1	54.2	40.2	62.3	21.4	212.2

95. Further details on our proposed amendment to the growth capex for the transmission network are set out below.

5.3.2.1 Supporting the government's decarbonisation plans

96. The Western Australian Government has demonstrated a clear intent to decarbonise the electricity sector and to adapt the Western Power Network to accommodate various forms of renewable energy, particularly as the State-owned coal fired power stations are retired by 2030[24].

[24] Western Australian Government, State-owned power stations to be retired by 2030, Media Statement, 14 June 2022, Media statements - State-owned coal power stations to be retired by 2030, Accessed 2 November 2022.

97. The Western Australian Government has also announced an expedited assessment will be undertaken of new and existing demand for renewable energy for the Western Power Network ahead of the next Whole of System Plan (**WOSP**), due in 2025[25].

98. Western Power will play a central role in supporting these plans and must therefore ensure it can accommodate new connections into the Western Power Network within the compressed timeframes over which they are due to occur, given the rapid pace already seen in the industry-led evolution of the sector.

99. The investments required to support such initiatives will likely be transmission based, as new renewable energy and battery proponents seek to connect to the Western Power Network in some locations that were not originally designed to accommodate such high-capacity loads.

100. While the SWIS demand assessment and the updated WOSP will inform medium to longer term transmission augmentation requirements, there is an identified need to move ahead in the short term with targeted investment to support the Western Australian Government's plans and commence with some immediate transmission augmentation, in advance of the broader studies.

101. Should there be future transmission investment requirements in the AA5 period that arise through this work on the SWIS demand assessment and WOSP, Western Power will engage with the ERA to determine the most appropriate pathway to facilitate such investment. As the ERA points out in its Draft Decision, this may involve a re-opening of the access arrangement and so Western Power will continue to engage with the ERA as this work progresses and seek to identify the need for any such discussions at the earliest opportunity.

102. Early planning has identified a need though to undertake transmission network augmentations to support the delivery of the Western Australian Government's decarbonisation plans during the AA5 period. Western Power proposes to:

- deliver network upgrades in the East Region of the of the Western Power Network to maximise the utilisation of the 220kV transmission line to the Eastern Goldfields
- undertake scoping and planning of potential network augmentations for the North Region of the Western Power Network.[26]

103. The cost to deliver on the above is $104.3 million overall, with $83.4 million occurring during AA5. This was not included in our Initial Proposal as it was not a known requirement for Western Power at that time. Western Power is now looking to include these in the AA5 program of works.

104. The proposed augmentation during AA5 is outlined in Table 5.6 and Table 5.7.

---

[25] Western Australian Government, Assessment of electricity demand to inform Western Australia's future network, Media Statement, 24 August 2022, Media statements - Assessment of electricity demand to inform WA's future network, Accessed 2 November 2022.

[26] The funding estimate only covers the scoping and planning work and does not include the cost associated with progressing this work through to execution or completion.

Table 5.6 Network investment in the East Region – scope of project works to completion

Project phase	Description	Timing	Total augmentation capex
Scoping phase	During the scoping phase, Western Power will identify network issues and opportunities to deliver network upgrades required to maximise the utilisation of the 220kV transmission line to the Eastern Goldfields.	2022/23 to 2023/24	$11.8 million
Planning to Execution	At this stage, the project will proceed through the planning phase (Gate 2) of Western Power's Investment Governance Framework.	2024/25 to 2026/27	$49.0 million

Table 5.7 Network investment in the North Region – scope of project works to commence scoping and planning

Project phase	Description	Timing	Total augmentation capex
Scoping and planning phase	During the scoping phase, Western Power's objective is to complete scoping and planning of potential network augmentations that will assist to: • improve network efficiency and reduce constraints • optimise asset replacement costs • unlock capacity constraints to enable renewable connections to support Western Australian Government and Industry decarbonisation plans.	2022/23 to 2026/27	$22.6 million

105. In considering the pressures to deliver on this work and support the Western Australian Government's plans, Western Power seeks leave from the requirements to undertake a Regulatory Investment Test, to work in conjunction with the ERA to find a workable regulatory solution to this matter on the basis that undertaking a Regulatory Investment Test would be contrary to the objectives of chapter 9 of the Access Code, as detailed at Section 9.23 of the Access Code.

106. This could be through either a waiver or expedited process undertaken in conjunction with approval to commence the early stages of the work, on the basis that:

- there are unlikely to be alternative options to facilitate the connection of renewable energy proponents in the region without augmenting the single transmission line connecting the area to the SWIS (the objective of Section 9.23(a) refers)
- there are 'no regrets' minimum early efforts required for augmentation, given customer engagement and access requests, and long lead times in the current supply chain (the objective of Section 9.23(b))
- as these works are likely to be utilised predominantly by a small number of renewable energy proponents, arrangements can be made during these early stages of development to ensure the costs will not cause a net cost increase to other users (the objective of Section 9.23(d) refers).

107. In view of the range of dynamic external factors and pressures facing the sector, as recognised through the Draft Decision, the ERA has approached its assessment of capex required to meet the Western Australian Government policy in a very open and supportive way.

108. Western Power requests that the ERA will consider a waiver or expedited process in the same light and with a broader view of the long term interests of consumers as an outcome of industry development, State growth and in support of the newly added objective of the Access Code to consider the *"environmental consequences of energy supply…"*.

109. For the reasons noted above, we have revised our forecast growth capex to include an additional $83.4 million. We consider that this capex meets the NFIT and should be added to the RAB. The proposed investment in decarbonisation planning costs has been included in our growth capex forecast, on the assumption that the ERA will approve our waiver request.

5.3.3 Distribution – Asset replacement and renewal

110. Western Power's Initial Proposal included investment of $2,017.9 million in asset replacement and renewal for the distribution network in the AA5 period, with capital contributions of $219.2 million offsetting the capex that is added to the RAB. This category of expenditure includes pole management, SPS, Network Renewal Undergrounding Program (**NRUP**), metering and streetlights.

111. In its Draft Decision, the ERA reduced this investment to $1,786.2 million including capital contributions of $219.2 million, a reduction of $231.7 million (11.5 per cent) across the AA5 period. The Draft Decision included the following reductions in forecast capex:

- Asset replacement: $62.3 million
- SPS: $102.6 million
- NRUP: $66.8 million.

112. While Western Power has accepted the above Draft Decision, we have also amended the forecast asset replacement and renewal capex for the following:

- an additional $31.3 million for overhead line decommissioning costs, as per the Draft Decision requirement amendment for opex (see RA-06.06)
- removal of the costs of dual element metering ($27.5 million) from the AMI business case.

113. Our revised asset replacement and renewal capex forecast for the distribution network is $1,790.0 million, which is only marginally higher than the Draft Decision. Table 5.8 summarises the revised asset replacement and renewal capex forecast.

Table 5.8 Summary of Revised Proposal for forecast distribution asset replacement capex ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Asset replacement and renewal	2,017.9	1,786.2	332.6	354.7	366.6	364.1	372.0	1,790.0

114. The following sections provide further information on our proposed asset replacement and renewal capex for the distribution network.

5.3.3.1 Distribution – Asset replacement

115. Western Power's Initial Proposal included investment of $1,798.7 million for asset replacement for the AA5 period. This category of expenditure includes overhead conductors, distribution transformers, switchgear, protection devices, underground cables and streetlights.

116. In its Draft Decision, the ERA reduced the forecast asset replacement capex for the distribution network by $62.3 million. The ERA did not specify which specific asset classes the reduction in expenditure should be applied to, noting only that the expenditure should reflect AA4 levels.

117. Western Power accepts deferral of some asset replacement capex may be achievable without significantly compromising safety and reliability. However, there are risks associated with the reduced capex profile which will need to be managed during the AA5 period. These risks include:

- reduced expenditure in the ring main units (**RMU**) replacement program increases the risk of a switchgear operating whilst in a low-gas condition, which could lead to a failure and pose a safety risk to Western Power personnel and the general public. Applying operational restrictions partially mitigates this risk, noting that the restrictions do not address the risk of fuse switches within the RMU operating to clear a downstream fault. Additionally, operating restrictions reduce the switching capability of the underground network, resulting in longer outage durations and more customers being impacted by fault situations
- reduced expenditure in the cable replacement program mainly impacts reliability, with more frequent outages expected for customers impacted by cables in poor condition having to remain in the network.

118. To operate within the approved forecast capex within this sub-category during the AA5 period, Western Power proposes to:

- seek to reprioritise investments by risk within asset classes covered by the sub-category of expenditure, whilst aiming to minimise the impacts of these changes on asset risk and performance
- optimise replacement rates for RMUs whilst focussing asset replacement activities on the units that will have the largest reliability impacts. RMUs with lower reliability impacts will be deferred and temporarily managed with operational restrictions until increased funding is approved for the AA6 period
- focus underground cable replacement activities on sections that will have the largest reliability impacts. Cables with lower reliability impacts will be deferred and temporarily managed through opex treatments (repairs) where possible, until increased funding is approved for the AA6 period.

119. Taking into consideration our concerns and proposed approach for managing the risks, Western Power has reduced forecast other asset replacement capex from $441.5 million to $379.2 million, in accordance with the Draft Decision required amendment.

5.3.3.2 Stand-alone Power Systems

120. We appreciate the ERA's recognition of the prudence of a transition to SPS in areas of the rural network. Western Power supports the decision to apply the IAM to the program, to provide Western Power with the flexibility to meet the challenges of the energy sector transformation whilst protecting customers from incurring costs if the programs are reduced during AA5.

Decommissioning costs

121. In its Draft Decision, the ERA required Western Power to include the decommissioning costs associated with the removal of overhead lines as capital costs of the project leading to the need for the removal and to also depreciate these costs over one year.

122. Western Power has included overhead decommissioning costs as SPS capex with a one-year useful life, consistent with the Draft Decision required amendment. The forecasts capex of $31.3 million has been added to the forecast SPS capex approved by the ERA. Western Power notes this adjustment is for regulatory accounting purposes only, and will be included in Section 12 "Regulatory adjustments" in Western Power's Regulatory Financial Statements as prepared for each year of AA5.

5.3.3.3 Network Renewal Undergrounding Program

123. We appreciate the ERA's recognition of NRUP as an integral part of the transformation program, and its prudence as an approach to overhead network renewal. Western Power supports the decision to apply the IAM to the program to provide Western Power with the flexibility to meet the challenges of the energy sector transformation whilst protecting customers from incurring costs if the programs are reduced during AA5.

5.3.3.4 Metering – Removal of dual element metering

124. Western Power's Initial Proposal included forecast metering capex of $297.0 million, which was accepted by the ERA in its Draft Decision.

125. Western Power submits a revised forecast metering capex of $269.5 million, which is a reduction of $27.5 million. The reduction of $27.5 million reflects the removal of dual element metering from the AMI business case.

126. Western Power has updated its position to install these meters only when requested by a retailer. This is supported by Synergy implementing a digital platform solution as the primary tool for emergency solar management for the SWIS.[27]

5.3.3.5 Metering – Additional metering information

127. In its Draft Decision, the ERA accepted Western Power's proposed metering capex, subject to Western Power:

- quantifying and demonstrating the benefit of the acceleration
- removing any contingency allowance
- demonstrating that it will be able to deliver the program in the AA5 period.

128. Each of these are discussed in turn below.

Benefits of accelerated roll out of AMI

129. ERA has requested that Western Power quantify and demonstrate the benefits of the AMI acceleration.

130. Western Power reviewed the AMI benefits as part of preparing the AMI business case. We found that most benefits were still relevant, with the exception of time of use, reduced energy theft and faster fault

[27] Synergy, *Emergency Solar Management*, Emergency Solar Management FAQs (synergy.net.au), Accessed 2 November 2022.

detection benefits, which were removed from the quantified benefits. It was found that time of use was no longer viable at this point and ultimately outside of Western Power's control.

131. Western Power identified two additional benefits applicable to AMI – manually read interval meters (**MRIM**) and self-read benefits – which had not been included in AMI1 business case. The materiality of MRIM had become larger given the introduction of the Distributed Energy Buyback Scheme (**DEBS**) product which required more MRIM.

132. Taking these changes into consideration, the total financial benefit of AMI is estimated at $188.5 million, comprising $151.4 million relating to metering benefits and $37.0 million for network benefits.

133. Western Power notes that the case for AMI acceleration was not based solely on incremental quantifiable benefits. Rather, the reason for the acceleration is that AMI is a necessary enabling technology *"to support actions under the Western Australian Government's DER Roadmap, such as DER aggregation and improved tariffs and network tariff structures that reward efficient use of the power system"*.[28] We also recognise the ERA acknowledged AMI as a key enabler of the transformation program.

134. The quantifiable benefits of AMI are summarised in Table 5.9.

Table 5.9 AMI financial benefits

	AMI Metering Benefit	NPV ($ million)
AMI Metering Benefits	Changes in scheduled meter reading costs	59.9
	Special read costs – includes retrofit	34.5
	MRIM & Self Reads	13.0
	Billing System Savings	12.3
	De-energisation costs	6.7
	Re-energisation costs	6.7
	Reconfigure costs	5.4
	Service connection inspections	12.8
	Sub Total	**151.4**
AMI Network Benefits	Nested fault identification	7.6
	Avoidance of SCADA and Telecommunications Costs	7.5
	Operating the network - voltage	3.9
	Call centre efficiencies	14.9
	Outage compensation	0.8
	Avoidance of unnecessary attendance	2.3
	Sub Total	**37.0**
Total Benefits		**188.5**

135. The AMI non-quantified benefits are set out in Table 5.10.

[28] Energy Policy Western Australia, *Submission on ERA's Draft Framework and Approach*, 5 May 2021, pg. 3.

Table 5.10 AMI non-quantified benefits

Reliability	Decarbonisation	Customers
• AMI data is providing greater detailed granularity in focused areas to better help Western Power manage the network. The full deployment by the end of AA5 is providing more data at scale to better forecast the increasing complex load profile • Critical component of DER and necessary to support aggregators • Extra layer of safety for all customers with an AMI meter that allows Western Power to detect degradation of neutral integrity and proactively manage to mitigate electric shock • Provides voltage visibility at granular level in the distribution network. Western Power fault crews are now looking at AMI data before going to site • Supports a stronger mesh resulting in more reliable remote services • Prioritise routes with reading issues such as MRIM • AMI can be used in targeted areas to provide greater granularity of peak demand and voltage which will enable Western Power to monitor increased DER activity locally and design reliable network solutions • Improved reliability of supply. Global AMI rollouts support 5 per cent to 10 per cent reduction in customer lost minutes.	• Enables more renewable technologies including PV, EV and batteries as data insights can help better plan the network • AMI data insights can help better plan the network including batteries • Enables remote services for all AMI customers which will reduce manual field trips resulting in less long-term driving to site thereby reducing both emissions and vehicle incidents • Enables smart streetlights and other smart city opportunities.	• Supported by Synergy and EPWA • Supports actions under the DER Roadmap such as DER aggregation and improved tariffs • Supports network tariff structures that reward efficient use of the power system • Data can be used to provide forward looking price signals to reduce power system costs over time • Allows all customers to have increased visibility and control of their electricity usage • Provides retailers close to real time information to better manage hardship customers • Allows other potential reforms to be planned such as: – embedded network reforms – increased retail contestability – Project Symphony.

136. The ability of AMI to support retail tariff reform and provide for real time customer information are key reasons why the acceleration is also supported by retailers, such as Synergy, who noted that:

> *"… the uptake of time of use pricing is contingent on the roll-out of advanced metering. Consequently, Synergy supports the accelerated roll-out of advanced meters.*[29]

[29] Synergy, *Framework and approach for Western Power's fifth access arrangement review: Synergy's response to the Economic Regulation Authority draft* decision, 8 July 2020, p.14.

Contingency allowance (risk)

137. The ERA has requested that Western Power remove any contingency from the accelerated metering costs.

138. Western Power notes that there was a contingency allowance included in the business case for the first phase of AMI. However, this risk adjustment was excluded from the unit rates used to determine the cost of the second phase of AMI included in the Initial Proposal.

139. Western Power therefore confirms that the AMI capex forecast for the access arrangement expenditure amount does not include any contingency.

Deliverability

140. The ERA has requested Western Power to demonstrate that we will be able to deliver the accelerated roll out of the program.

141. AMI1 included the deployment of approximately 290,000 AMI enabled meters under a new and replacement program from February 2019 to June 2022 and retrofitting of approximately 190,400 AMI capable meters with network interface cards from October 2020 to June 2022. This was delivered with two external service providers and internal Western Power crews.

142. For the second phase of AMI, Western Power has onboarded two additional high volume service providers (rolling out 50,000 meters per annum) and more internal crews (rolling out 20,000 meters per annum). These external providers and internal crews will be specifically recruited for installing meters. This is in addition to our existing service providers, who have also advised that they have additional capacity available, if required.

143. Despite the tight labour market, Western Power has recruited the required personnel to perform the meter installation.

144. Western Power notes that the greater risk is likely to be meter supply, which we are proactively addressing through the onboarding of an additional meter provider.

5.3.4 Distribution – Growth

145. Western Power's Initial Proposal included investment of $773.4 million in growth capex for the distribution network over the AA5 period. This category of expenditure includes capacity expansion capex, customer driven capex and gifted assets, with capital contributions of $528.1 million offsetting the capex that is added to the RAB.

146. In its Draft Decision, the ERA accepted Western Power's forecast growth capex, largely because it reflected AA4 level of growth capex. The ERA also requested that we update our demand forecasts (see section 5.1.2).

147. Several significant events have occurred since the preparation of the Western Power's original AA5 proposal (and demand forecasts) that have increased the expected investment required to meet customer requirements for network services. These events include:

- the impact of the 2021 Christmas heatwave on energy forecasts under existing planning criteria
- the Shepherd Report and resulting recommendations
- preliminary results of modelling EV adoption and charging behaviour scenarios prepared in conjunction with EPWA as part of the Western Australia's EV Action Plan.

148. Western Power has therefore amended the growth capex by an additional $115.6 million to address the impacts of the above developments.

149. Our revised forecast growth capex for the distribution network is $889.0 million. Forecast growth net capex, after allowing for forecast capital contributions of $528.1 million, is $361.0 million, as summarised in Table 5.11.

Table 5.11 Western Power's proposed distribution growth net capex for AA5 ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Growth	245.4	245.4	67.5	61.5	68.1	78.0	85.8	361.0

150. Due to the uncertainty regarding EV adoption rates and the impact of the changes recommended to Western Power's planning criteria, Western Power also proposes the capacity expansion category be subject to the IAM.

151. The following sections provide further information on Western Power's forecast capacity expansion capex.

5.3.4.1 Impacts of recent events on capacity expansion

Impact of 2021 Christmas heatwave on forecasting

152. Western Power's Initial Proposal for overutilised feeder and transformer investment requirements were derived from forecasts developed prior to the 2021 Christmas heatwave outages. As forecasting for the short to medium term is informed by historic performance and observations, updated forecasts incorporating summer 2021/22 directly leads to an increase in the required investment in capacity expansion for the distribution network.

153. Details of the expected impact on investment required are set out below.

Independent review into 2021 Christmas Power Outages

154. Western Australia experienced five days with extremely high temperatures in late December 2021, resulting in widespread power outages. An independent review was commissioned by the Western Australian Government to investigate and report on the outages.[30]

155. The report noted that during the 5-day heatwave:

- 107,020 customer connections experienced an outage
- 69,469 customer connections experienced an outage for longer than two hours
- outages began and grew rapidly from the early evening as the sun set, reducing output from behind-the-meter rooftop solar generation and thus increasing customer demand from the network.

156. The Shepherd Report made six high level recommendation, which included:

- improving the use of rooftop solar, AMI and other data in the forecasting methodology
- incorporating the likelihood of extreme weather events into forecasting

[30] Shepherd, M., *Independent Review of Christmas 2021 Power Outages*, Final Report, 14 March 2022.

- reviewing network planning criteria given future uncertainties relating to climate
- reviewing the approach to fire risk management with regard to restoring supply on higher fire risk days
- improving customer and stakeholder communications in the lead up to, and during outage events
- improving information on reliability performance.

157. Western Power has developed an action plan to progressively implement all Shepherd Report recommendations, and this will have a direct impact on the investment required within the distribution capacity expansion category in subsequent access arrangement periods.

The impact of EV adoption

158. We acknowledge and accept Engevity's comment regarding EV uptake not being included in short to medium term forecasts, and that whilst impacts in the short term are expected to be manageable, impacts in the AA6 period and beyond are likely to be highly significant.

159. In conjunction with EPWA, and as a contributor to the Western Australia's EV Action Plan, Western Power is undertaking modelling of the anticipated network augmentation requirements for a range of EV scenarios which vary in customer charging behaviour, vehicle usage, and overall EV adoption as well as corresponding policy settings.

160. Given that there are a range of possible forecast projections for the uptake of EVs, Western Power proposes the capacity expansion category be subject to the IAM. Inclusion in the IAM will help to address the potential impacts of the uncertainty in EV adoption rates.

Impact on required investment in capacity expansion in the AA5 period

161. Western Power has forecast the impacts on overall investment requirements cumulatively in order of perceived likelihood.

Updated projections following the summer 2022 heatwave

162. The forecasts for the Initial Proposal for the AA5 period were based on summer 2020 data, which have since been updated and now incorporate the impacts of the December 2021 heatwave. A key impact of this has been on the forecast feeder utilisation, with a significant increase in the number of feeders now forecast to be overutilised over the AA5 period. For metro zone substations with positive growth, for example, there are now 103 feeders forecast to be overutilised, an increase of 48 feeders over our prior forecast of 55 overutilised feeders.

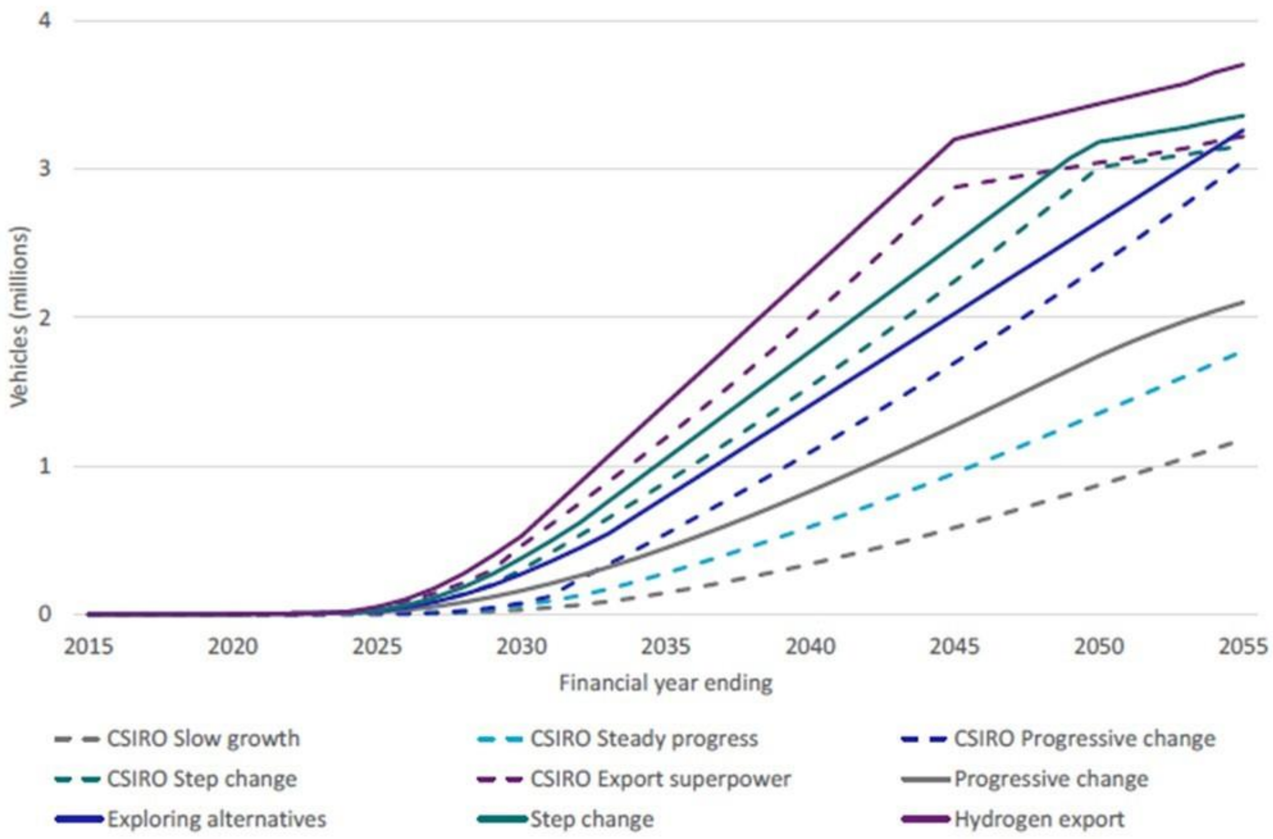
163. Western Power notes that most of the issues experienced during summer 2022 were related to metropolitan residential feeders and metropolitan distribution transformers. This means that there is limited opportunity to address this through either:

- the SPS program, as there is no overlap in the programs
- the undergrounding program, as that program is optimised against LV asset life, which means that any overlap between the two would be coincidental, and further optimisation opportunities would be minimal.

EV forecasting

164. The current set of adoption scenarios are based on preliminary results modelled by CSIRO in September 2022. EPWA and AEMO have reviewed this data and concluded that the 'step change' scenario shown in Figure 5.2 is the most likely scenario, with an expected case of approximately 200,000 vehicles in 2027/28 and approximately 500,000 vehicles in 2031/32 within the SWIS.

Figure 5.2 Draft CSIRO EV projections 2022[31]



165. Figure 5.2 highlights EV adoption curves are forecast to rise steeply towards the latter half of the decade. The network requirements to support this will require a proactive augmentation program. Increases in electricity demand requirements are anticipated to commence towards the end of the AA5 period with widespread impacts across the network. This adoption has been combined with scenario assumptions on policy intervention developed in conjunction with EPWA.

166. Additional medium voltage (**MV**) feeder and distribution transformer investment will be required to facilitate EV adoption, on top of requirements already forecast from existing energy growth factors, such as climate.

Extreme weather

167. The Initial Proposal did not include any provisions for increases to maximum temperatures due to climate change. Following the 2021/22 summer heatwave impact, the Shepherd Report included a recommendation to consider extreme weather events in forecasting for the distribution network.

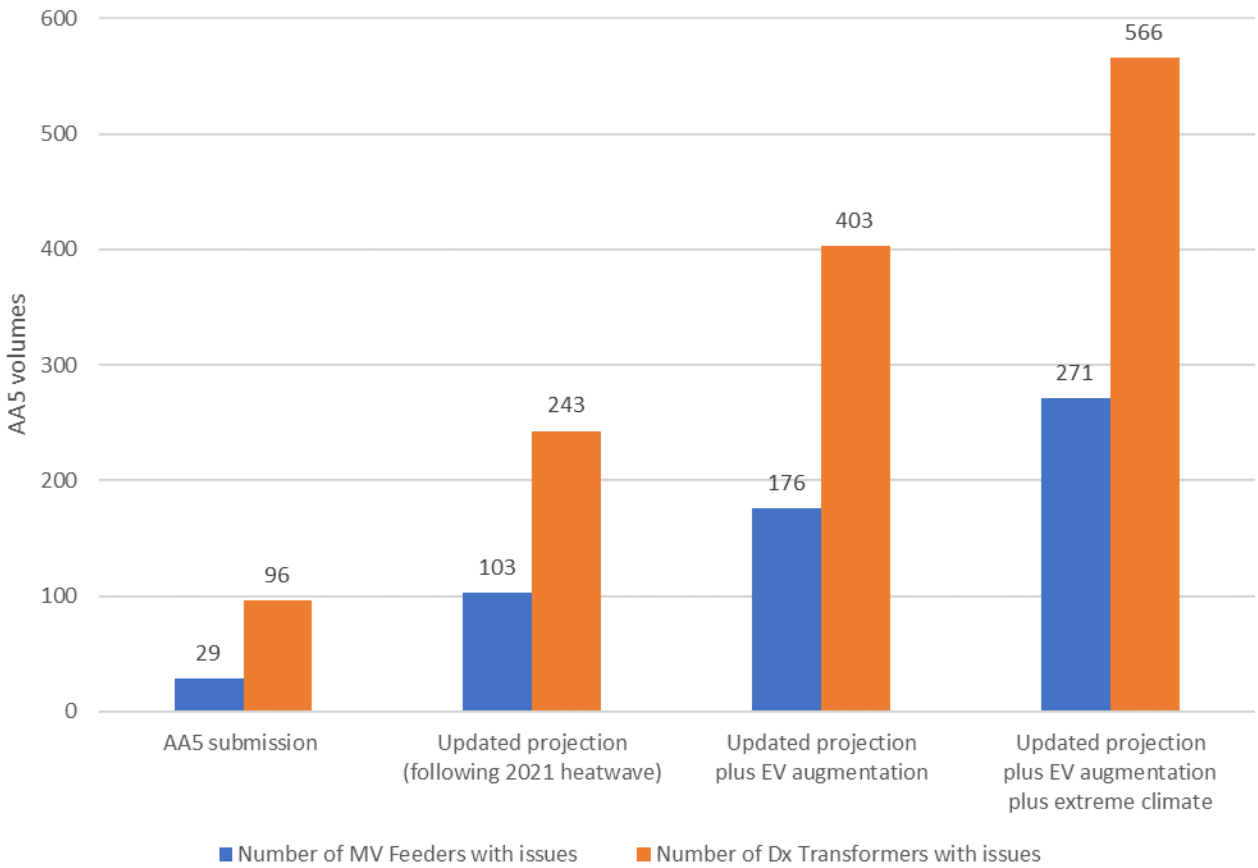
31 Sourced from draft CSIRO 2022 SWIS EV forecasts presented at AEMO's Forecasting Reference Group meeting on 28 September 2022.

168. Modelling in response to this recommendation has interpreted the impact of an extreme climate scenario, with a network impact of three days over 43 degrees centigrade and a 1 in 10 possibility of this occurring in the next 10 years. This is based on the Australian Government's Electricity Sector Climate Information RCP 4.5 scenario. The network impact of such an event is an extrapolation of past heatwaves observed on the South West Interconnected Network, including the heatwave of summer 2021/22.

Overall network impact

169. The following chart illustrates the impact of these events on the number of forecast feeder issues over the AA5 period, showing the cumulative effect of updating our demand forecasts for the 2021 heatwave, EV augmentation and extreme climate scenarios.

Figure 5.3 Forecast MV feeder and distribution transformer issues



170. Each of the three scenarios includes sharp increases in the number of MV feeders and distribution transformers requiring intervention within the AA5 period. Despite a great deal of uncertainty in both EV adoption and climate impacts, the overall impact on the network is forecast to be highly significant, even when choosing intermediate scenarios.

Revised capacity expansion investment

171. Western Power submits a revised capex forecast of $233.1 million for capacity expansion for the distribution network. This revised forecast includes an additional $115.6 million over the Initial Proposal for additional investment in MV feeders and distribution overloaded transformers, and reflects the 'Updated project (following the 2021/22 heatwave)' scenario in Figure 5.3 above. This is the additional capex to respond to the impacts of the 2021/22 heatwave.

172. Western Power has constrained the updated capex forecast to this scenario in order to enable deliverability. The program of work will be delivered using a combination of internal Western Power labour and external contract labour.

173. Due to the high level of uncertainty regarding EV adoption rates, the impact of the changes recommended to Western Power's planning criteria, and the overall deliverability of the program, Western Power proposes the capacity expansion category be subject to the IAM. This would allow for the delivery uncertainty of a program of work subject to significant expansion, and to react to volatility in EV adoption forecasts and the accompanying policies which have a highly significant impact on network requirements.

5.3.5 Distribution – Compliance

174. Western Power's Initial Proposal included investment of $215.2 million in compliance capex for the distribution network in the AA5 period. This category of capex includes expenditure required to meet regulatory obligations relating to the Western Power Network.

175. In its Draft Decision, the ERA accepted our proposed forecast, noting that the expenditure relates to compliance requirements and obligations. However, this decision did not take into consideration the impact of the Draft Decision on required amendments relating to SSB (see RA-09.02) or the need for insulator replacement (Pole top Management).

176. Western Power has therefore amended the compliance capex by an additional $190.1 million to include:

- $182.0 million for improving service and reliability on rural long feeders
- $8.1 million for insulator replacement (in 2022/23 only).

177. Our revised compliance capex for the distribution network is $405.3 million, which is 88.3 per cent higher than the Draft Decision. Table 5.12 summarises the revised compliance capex forecast.

Table 5.12 Summary of Revised Proposal for forecast distribution compliance capex ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Compliance	215.2	215.2	51.2	77.5	95.0	87.7	93.8	405.3

178. Further details on our proposed amendments to the compliance capex for the distribution network are provided in the following sections.

5.3.5.1 Reliability Performance Improvement for rural long feeders

179. In its Draft Decision, the ERA required Western Power to align SSB performance for rural long feeders[32] to the standard prescribed in the NQRS Code, which requires that rural long SAIDI be no worse than 290 minutes.

180. The feedback we received from customers is that while reliability is front of mind, customers are sensitive to price increases and therefore minimising cost increases is a high priority for them. This is discussed further at Section 5.6.1.2, including feedback received from customers in response to the Draft Decision.

32 Rural long feeders are all feeders that are over 200km long and not classified as CBD or urban feeders.

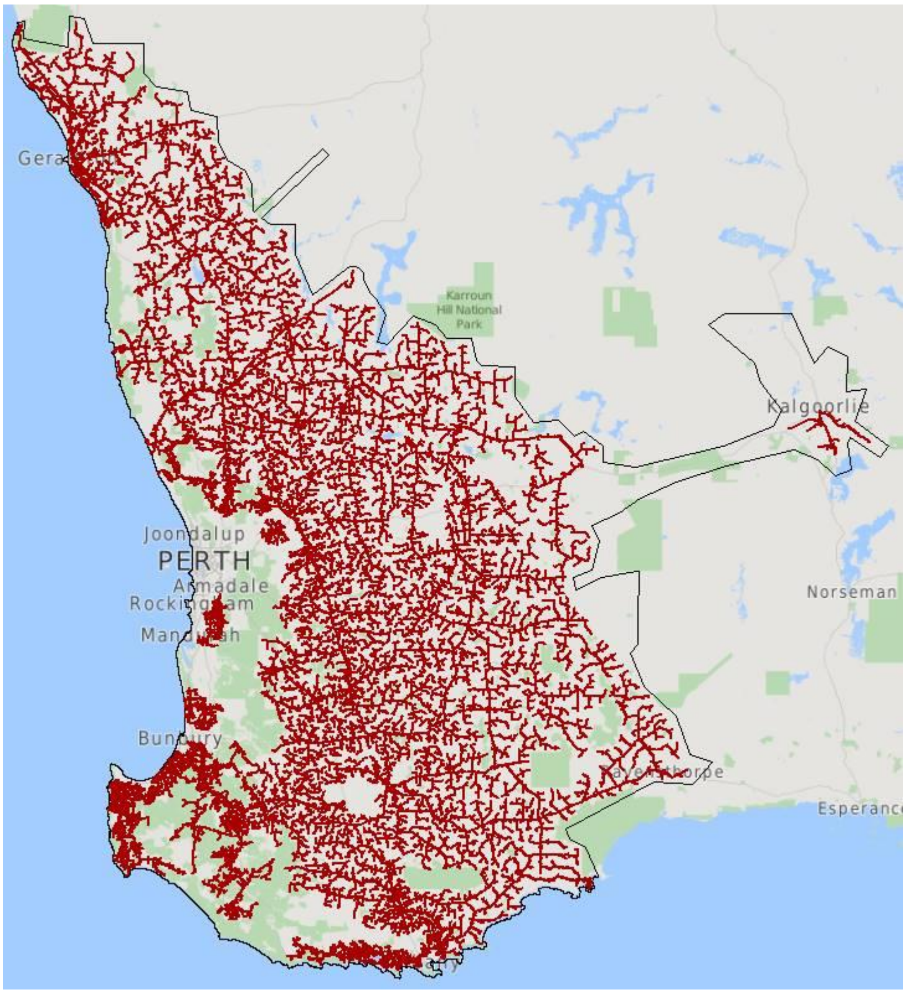
181. Our investment plan in the Initial Proposal was aimed at maintaining overall reliability levels and managing the technical challenges associated with the integration of DER.

182. Notwithstanding, Western Power acknowledges the importance of the reliability to the community and the feedback from the ERA through its Draft Decision and that which it gathered through its own customer feedback process.

183. The rural long feeder network is the largest component of our distribution network by total circuit length at approximately 52,500 km, accounting for 55 per cent of the distribution network circuits (both overheard and underground network), with approximately 47,000 km overhead (70 per cent of our overhead distribution network). This is shown in Figure 5.4.

184. But despite its size, the rural long feeder network accounts for just over 8 per cent of our customers, which means targeting significant improvements in overall averages as required by the NQRS Code represents the is challenging.

Figure 5.4 Western Power's rural long network[33]



185. Targeting lower overall averages as per the NQRS Code means investment is targeted at locations on the network with higher population densities, where the reduction in SAIDI is the greatest.

33 The red lines on this figure depict the 85 rural long feeders on the Western Power Network.

186. With this in mind, in addition to our transitional pathway to modular grid, we propose to undertake a bespoke program of investigation and investment into service reliability and performance improvements on the rural long feeders that are exhibiting the worst levels of performance.

187. We are therefore proposing a rural long Targeted Reliability Program for the AA5 period. This program will focus on the most under-performing rural long feeders, irrespective of other factors such as accessibility and customer densities.

188. In line with our Investment Governance Framework, we will develop a detailed business case for improvements on our worst performing feeders and will consider the most prudent and cost-efficient way to undertake this investment, from simple network strengthening through to an expansion of our SPS and microgrid program to targeted areas. Where savings are made and spare capacity exists within the program budget over the course of the AA5 period, other priority areas will be investigated for additional targeted investment.

189. We have estimated the cost of the program at $182.0 million over the course of the AA5 period, based on a range of potential solutions and the costs incurred in other areas of the network, and applying those potential solutions to some of the worst known feeders in the rural long network.

190. It is important to note that these targeted investments in the worst performing areas of the rural long network will not deliver significant movements on overall SAIDI and system average interruption frequency index (**SAIFI**) performance due to the often lower numbers of customers on each feeder. However, they will deliver improved outcomes in terms of customer felt experience to those customers affected by the work.

191. Together with the modular grid strategy across the SWIS, this Targeted Reliability Program will work to address rural reliability on a number of fronts and over multiple access arrangement periods, will deliver improved reliability performance in a prudent and cost-efficient manner, by targeting the outcomes most valued by our customers.

5.3.5.2 Insulator replacement program

192. In the Draft Decision, the ERA required Western Power to remove the proposed opex step change for the silicone treatment program. Western Power has updated the step change for the silicone treatment program in our forecast opex for the AA5 period and has proposed that part of this expenditure be treated as capex.

193. As outlined in our Initial Proposal, the primary driver for this step change is to mitigate the risk associated with PTF due to the accumulated backlog caused by a pause on the live-line silicone treatment program.

194. Western Power proposes to mitigate the risk associated with PTFs over the AA5 period to maintain the safety (fire) and reliability performance of the network by addressing 5,000 structures through Western Power's existing compliance capex programs in the AA5 period (e.g., pole top management) in 2022/23 at a cost of $8.05 million. The balance of the structures to be treated will be through the opex program.

195. Further information supporting the need for this expenditure is provided in section 5.4.2.1 below.

5.3.6 SCADA and Telecommunications

196. Western Power's Initial Proposal included investment of $413.1 million in the SCADA and Telecommunication program to protect, operate and manage the Western Power Network and WEM. This category of expenditure includes the SCADA master station, substation SCADA and distribution automation and the telecommunications infrastructure to support operation and management of the Western Power Network.

197. In its Draft Decision, the ERA proposed an alternative capex forecast of $289.2 million, which is a reduction of $123.9 million to our forecast investment in SCADA and Telecommunications. The ERA determined that the proposed expenditure for SCADA and Telecommunications was not reasonably likely to meet the NFIT. The ERA requires further justification and evidence to support the need for the SCADA and Telecommunications program specifically if addressing cyber security requirements.

198. We have reviewed the Draft Decision reasoning for their capex amendments and have accepted deferral of some, but not all, of the SCADA and Telecommunications capex.

199. Impacts from significant reductions in the forecast SCADA and Telecommunications investment, as would be required under the Draft Decision include:

- managing higher number of cyber security risks due to incompatible assets with the cyber security requirements extending the MRL of the subset of assets which cannot meet new capacity requirements and minimum cyber security requirements. While Western Power can address some of the supportability issues through harvesting spares from deployed assets (for spare parts and repairs), this is unable to increase the capacity and uplift the cyber security posture. This cannot be proactively managed and will result in a higher number of obsolete assets with negative consequences to reliability of the network and higher risk of breach of compliance requirements
- high pressure on maintenance and support workforce with a reactive approach, which is more costly
- increases in operating and maintenance expenditure as failed assets will need to be replaced on failure which will also have a negative impact on reliability and overall higher costs
- increased level of technical non-compliance and possible penalties
- an inability for Western Power to meet customer expectations
- a slow down in integration of new assets, including DER, microgrids, network batteries, SPS, Depot Modernisation, physical security requirements (therefore difficult to provide needed support for these assets).

200. Replacement of SCADA and Telecommunications assets is based on a balanced assessment of current condition, performance, critically, cyber security risks and network reliability considerations, as defined by the Network Management Plan and in alignment with Western Power's risk appetite statement set by the Board. Under this approach, assets are scheduled for upgrade and/or replacement when they exceed risk tolerance, resulting in lower-risk assets being retained for an extended period. This evaluation is applied at least annually so that assets are re-evaluated each year until they reach the risk level that triggers their replacement.

201. Western Power normally upgrades or replaces assets when the manufacturer ceases to provide support, which includes the provision of cyber security patches for new vulnerabilities. The duration for which manufacturers/vendors provide support for their technology products can vary from asset to asset but this typically ranges from seven to 12 years for SCADA and Telecommunications assets, and rarely exceeds 10 to 15 years without inferring a substantial cost premium.

202. Manufacturers will sometimes extend support, including the provision of patches for new, high risk cyber vulnerabilities beyond the normal support life but at a cost premium. It is normally more cost effective to carry out an upgrade than delay an upgrade and pay the premium.

203. After 15 years spares tools, repair and to some extent skills are generally difficult to source and support for these assets is not always economically justifiable. Therefore, Western Power utilises a partial upgrade process to 'harvest spares' and thereby further increase the asset life.

204. It should be noted that for some services it is difficult to meet new service requirements (such as the new cyber and capacity requirements) with the old assets, however risk assessments are completed and prioritised against other work.

205. A reduction in investment to meet the Draft Decision would require a significant increase in opex to fund extended support over the AA5 period and will result in an increase in cyber security risk beyond corporate risk tolerance levels within 12 months.

206. For these reasons, Western Power submits a revised capex forecast of $350.0 million for SCADA and Telecommunications. The revised proposed investment in SCADA and Telecommunications reflects an additional $60.8 million to address cyber risks, enable communications with SPS assets and provide capability for the master station to manage cyber risks. This investment is in addition to the Draft Decision capex of $289.0 million, and comprises:

- $30 million to address the cyber risks related to obsolete assets
- $15 million to enable communications with SPS assets
- $16 million for the master station to manage cyber risks.

207. Western Power's revised SCADA and Telecommunications capex is summarised in Table 5.13.

Table 5.13 Western Power's proposed SCADA and Telecommunications capex for AA5 ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
SCADA and Telecommunications	413.1	289.2	53.5	67.4	73.5	74.8	80.9	350.0

208. This is the revised expenditure total that is required to ensure that Western Power meets our compliance requirements relating to the above functions. This is the expenditure we believe is reasonably expected to meet the NFIT requirements and which should be included within the RAB.

5.3.7 Corporate – business support (real estate and depots)

209. Western Power's Initial Proposal included investment of $130.5 million in business support. This category of expenditure includes our property (including real estate and depots).

210. In its Draft Decision, the ERA reduced Western Power's proposed investment in corporate real estate and depots to $102.9 million, a reduction of $27.6 million (21.1 per cent) from our Initial Proposal.

211. Western Power accepts deferral of some business support capex may be achievable without significantly compromising safety and reliability. However, there are risks associated with the reduced capex profile which will need to be managed during the AA5 period.

212. Over the past 24 months, the construction industry has been faced with significant and unforeseen price increases for materials and labour, which is increasing the cost of construction. Evidence of this increase is highlighted:

- in recent advice provided by the Master Builders Association based on Australian Bureau of Statistics Data, which shows extraordinary price rises over the past 12 months to December 2021 for a variety of materials[34]
- by the Western Australian Government through their announcement in May 2022 on measures to support the building and construction industry manage price increases and supply constraints.[35]

213. With a significant portion of the industry-wide price increases occurring after our Initial Proposal, the Draft Decision on corporate real estate capex now provides insufficient funding to deliver the works forecast in the Initial Proposal.

214. In order to meet our legal obligations to provide safe workplaces for our staff, this means that Western Power will reprioritise our real estate investment in the AA5 period. Thus, Western Power will reduce activities on remediating depots and instead will continue to incur expenditure to undertake care and maintenance activities on many of our workplaces, consistent with the current approach. This represents a risk to Western Power as the majority of depots are not yet redeveloped under the Depot Modernisation Program in the AA4 period, are beyond their operational life of 40 years and in poor condition and require extensive, ongoing maintenance to ensure the provision of safe workplaces. This may potentially result in the need for major capital works to be undertaken in the AA6 period in addition to the proposed AA5 investment if significant remediation work is required to address safety issues.

215. Taking into consideration these concerns and proposed approach for managing the risks, Western Power has reduced forecast business support capex to $102.9 million, in accordance with the Draft Decision. Western Power will amend our proposed investments accordingly, taking into consideration workplace health and safety obligations to our staff and the public.

216. Our reduced forecast is summarised in Table 5.14.

Table 5.14 Western Power's proposed Corporate business support for AA5 ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Business support	130.5	102.9	22.7	26.6	45.5	4.1	4.1	102.9

5.3.8 Corporate – Information and communications technology

217. Western Power's Initial Proposal included investment of $332.8 million in Corporate ICT assets for the AA5 period. This category of expenditure includes business driven ICT (enterprise systems) and infrastructure and maintenance ICT (the core ICT infrastructure).

218. In its Draft Decision, the ERA reduced Western Power's proposed investment in Corporate ICT to $233.0 million, a reduction of $99.8 million from our Initial Proposal.

219. Western Power proposes a revised investment in Corporate ICT assets of $243.8 million, a net increase of $10.8 million (4.6 per cent) over the Draft Decision. This is comprised of:

- an additional $31.0 million to manage key cyber security risks

[34] Master Builders Association*, Building material price increases, trade and labour availability*, (undated).

[35] Western Australian Government, *New measures to protect home owners and support building and construction industry*, Media Release, 12 May 2022.

- an additional $8 million to meet customer communication expectations and align with the recommendations made in the Shepherd Report
- a reduction of $28.2 million relating to ICT classified as SaaS.

220. Our revised Corporate ICT capex is summarised in Table 5.15.

Table 5.15 Western Power's proposed Corporate ICT capex for AA5 ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 revised
Corporate ICT	332.8	233.0	48.1	48.3	46.5	52.3	48.6	243.8

221. Further details on the need for this investment is detailed in the following sections.

5.3.8.1 *Managing key cyber security risks*

222. Managing key cyber security risks involves:

- maintaining our digital assets to mitigate cyber risks
- implementing and uplifting cyber risk controls.

Maintaining Digital Assets to Mitigate Cyber Risk

223. Maintenance of ICT assets is based on a balanced assessment of risk, including performance, capacity, security, cost, strategic alignment and business impact as defined in the ICT Asset Management Guideline, and aligns with Western Power's risk appetite statement set by the Board. Under this approach, assets are scheduled for upgrade and/or replacement when they exceed risk tolerance, resulting in lower-risk assets being retained for an extended period. This evaluation is applied at least annually so that assets are re-evaluated each year until they reach the risk level that triggers their replacement.

224. Through the application of ICT Asset Management Guideline, cyber security risk is a frequent driver for asset replacement. Western Power normally upgrades or replaces assets when the manufacturer ceases to provide support, which includes the provision of cyber security patches for new vulnerabilities. The duration for which manufacturers/vendors provide support for their technology products can vary from asset to asset but this is typically ranges from 3 to 5 years, and rarely exceeds 5 years without requiring a substantial cost premium.

225. As noted for SCADA and Telecommunications, there are a range of implications from extended support beyond the manufacturers' standard period (see section 5.3.6). Therefore, the technology maintenance budget for Corporate ICT is based on a five-year asset life.

Uplifting Cyber Capabilities

226. The Australian Cyber Security Centre (**ACSC**) Annual Cyber Threat Report noted:

> *"Over the 2020–21 financial year, the ACSC received over 67,500 cybercrime reports, an increase of nearly 13 per cent from the previous financial year."*[36]

[36] ACSC, *ACSC Annual Cyber Threat Report I July 2020 to 30 June 2021*, September 2021, pg. 9.

227. This year has seen several successful and high-profile ransom attempts that leverage weaknesses in an organisation's cyber security controls (including Optus and Medibank). The threat landscape and complexity of cyber threat actors continues to evolve.

228. A reduction in uplifting cyber capabilities from our Initial Proposal, unilaterally applied to planned cyber security investments, would almost certainly result in a sustained risk posture outside of Western Power's enterprise risk appetite in the latter years of the AA5 period.

229. After submission of its Initial Proposal, Western Power undertook cyber audits and assurance activities. These assurance activities identified opportunities to further strengthen our cyber security controls and indicated that Western Power was operating at a risk level which it was not willing to accept given the criticality of its business delivering on customer and community expectations. Western Power will act promptly on some of these issues by continuing to deliver in-line with the current Cyber Security Strategy. However, the Cyber Security Strategy cannot be implemented for 30 per cent less than estimated cost (as would be required under the Draft Decision) without sustaining unacceptable levels of cyber security risk.

230. Western Power notes that the new information from the audits and assurance activities, combined with the increasing external cyber threat landscape since the Initial Proposal, require Western Power to have an updated Cyber Security Strategy. Western Power will require additional funds to implement tactical solutions to enhance its cyber security framework and operate within acceptable risk levels.

231. It is therefore imperative that:

- work is planned over five years in line with the strategy, which will require re-adjusting forecasts to accommodate a faster than anticipated spend on cyber projects
- tactical work on the updated strategy commences as soon as possible, to operate within acceptable risk levels.

5.3.8.2 Improving customer communications to implement the Shepherd Report recommendations

232. The Shepherd Report acknowledged that Western Power had in place a considered communications strategy that used a number of channels to provide frequent updates to affected customers and communities.[37] However, through stakeholder consultation the review found that Western Power's communication strategy could be improved to meet stakeholder expectations.

233. These improvements may include:

- more regular and detailed communication during an outage
- greater use of direct customer communication before and during an event
- the use of warnings where an outage can be reasonably forecast and is likely
- communication to customers about how a change in their energy use may reduce the risk of an imminent outage
- distinct communication strategies for vulnerable customers (including those on life support)
- recognition of the health impacts during a heatwave and appropriate health messaging/referrals

[37] Including SMS (for opt in customers only), Western Power's call centre, Facebook, Western Power's website, Twitter and mainstream media.

- greater engagement with impacted LGAs.

234. The Shepherd Report recommended that Western Power consult with stakeholders on these improvements to customer and stakeholder communications in the lead up to, and during outage events and report to the Minister for Energy on the outcomes of this consultation and the resulting implementation plans.[38]

235. To improve customer communications prior to next summer (December 2022), Western Power is implementing the following:

    - expanding automatic SMS message capability to inform customers of outages, estimated time of restoration and completion of restoration
    - manual SMS messaging capability to provide additional context to customers during extended outages as well as the ability to notify customers of areas of extreme network demand and how a change in their energy use may reduce the risk of an imminent outage
    - improvements to information provided on Western Power's website, including increased real-time contextual information regarding unplanned outages and estimated restoration times.

236. Furthermore, the Shepherd Report identified that there are a number of communities across the SWIS whose reliability falls below the reliability performance standards and recommended that Western Power *"improve information on its reliability performance, including making it easily understood by its customers, for… communities experiencing performance well below prescribed reliability standards during extreme events"*.[39]

237. Following the Shepherd Report, more strategic approach to customer communication is required beyond summer 2022/2023 with more appropriate and fit-for-purpose technical architecture, systems, data, and processes, in addition to the rural long feeder program (see section 5.3.5.1). This strategic approach will enable customer communication for a wider set of scenarios and use cases, will involve increasingly fine-tuned and targeted communication, and respond to customer preferences for the information customers value across a variety of delivery mechanisms. Implementing this strategic capability will be a multi-year programme of work building on the capabilities introduced through the CMS project delivered in the AA4 period and will include uplift in core operational processes and system to provide relevant and up to date information for customer consumption.

238. Western Power notes that the Shepherd Report was released after we submitted our Initial Proposal and therefore, there was no investment included for this. The Draft Decision required reduction in customer focused ICT means that we are not able to address the Shepherd Report recommendations. Accordingly, Western Power proposes to include a new investment of $8 million to improve customer communications in line with customer expectations and reliability data.

239. Analysis of strategic improvements to customer expenditure are still evolving but are expected to require investments in the following technology capabilities:

    - enhancement of automated customer communications to support multiple options, for example, communication media, frequency and severity

[38] Shepherd, M., *Independent Review of Christmas 2021 Power Outages*, Final Report, 14 March 2022, recommendation 5, p 51.

[39] Shepherd, M., *Independent Review of Christmas 2021 Power Outages*, Final Report, 14 March 2022, Recommendation 6, p 52.

- an improved customer record, allowing individual customers, not only network connections, to be distinguishable, in order to capture customer communications preferences and consolidate communications for the multiple interactions with a single customer
- a customer "portal", allowing customers to securely log-on to Western Power's website, for customers to manage their preferences through self-service and receive personalised information. This includes the implementation of customer identity services
- improved outage duration and customer impact analytics, covering the range of outages, from frequently occurring outages to more complex, evolving environmental driven events, allowing more informative customer outage communications
- development of network analysis algorithms to dynamically forecast where customer energy usage may reduce risk of imminent outage and then the automation of the associated, targeted customer communications
- enhancements to make Western Power's website more consumable to customers for both outage information and information on how energy use can reduce outage risk
- introduction of analytics and testing on Western Power's website to allow website communications to be continually assessed and improved
- development of a suite of reports to manage and monitor the effectiveness of customer communications to allow continued improvement of communications.

5.3.8.3 SaaS

240. We have reviewed our planned corporate ICT investment in the AA5 period and identified that part of this investment can be delivered through SaaS solutions, consistent with our "proactive cloud first" approach.

241. Western Power has forecast that $28.2 million of the planned corporate ICT investment in the AA5 period will be in SaaS technology. As such, Western Power has reduced our planned ICT capex, and moved this expenditure into our opex forecast. We note this adjustment is for regulatory accounting purposes only, and the total proposed expenditure for corporate ICT investment over the AA5 period remains the same as included in our Initial Proposal.

242. Further details on the proposed opex for SaaS is set out in section 5.4.2.3.

5.3.9 Forecast capex summary

243. Table 5.16 summarises Western Power's revised capex forecast for the AA5 period.

Table 5.16 Revised forecast capex summary ($ million real at 30 June 2022, excluding indirect costs and labour escalation)

Expenditure category	Initial Proposal	ERA Draft Decision	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Revised
Transmission network	745.9	660.6	172.7	166.4	150.8	159.6	94.4	744.0
Distribution network	3,006.8	2,775.1	558.5	600.7	636.7	636.8	651.7	3,084.5
SCADA and Telecommunications	413.1	289.2	53.5	67.4	73.5	74.8	80.9	350.0
Corporate Support	463.3	335.9	70.8	74.9	92.0	56.3	52.7	346.7
Gross Capex	**4629.1**	**4,060.8**	**855.5**	**909.5**	**953.0**	**927.5**	**879.7**	**4,525.2**
Less contributions	910.2	910.2	191.7	173.6	183.6	192.5	167.8	909.2
AA5 capex to be recovered via tariffs	**3,718.9**	**3,150.6**	**663.8**	**735.9**	**769.4**	**735.0**	**711.9**	**3,616.0**

244. Western Power considers that our revised capex forecast meets the NFIT set out in Section 6.52 of the Access Code.

5.4 Operating expenditure (Draft Decision Attachment 6)

245. Western Power's revised opex forecast for the AA5 period is $2,038.5 million ($2022 real, excluding indirect and labour escalation), as shown in Table 5.17. This is 12 per cent higher than the Draft Decision for forecast opex of $1,815.5 million (on the same basis) for the AA5 period, and 4 per cent higher than the Initial Proposal (on the same basis).

246. In preparing this Revised Proposal, we have considered our customer's requirements, the Draft Decision and the emerging challenges Western Power is facing from external factors including higher escalation on some costs than headline inflation, increased insurance premiums felt across the industry and a recent court judgment requiring Western Power to inspect private power poles.

247. Where it is possible to accept the Draft Decision, without compromising safety and reliability, we have done so. In relation to aspects we have not accepted, we have provided further detailed information and analysis to explain and justify the proposed expenditure.

Table 5.17 Summary of responses to Draft Decision required amendments on forecast opex, $ million real at 30 June 2022

	Initial Proposal	ERA Draft Decision	Revised Proposal	Notes
Recurrent network base costs	1,740.5	1,740.5	1,813.3	We have rolled forward the base year to account for actual inflation in the final year of the AA4 period.
Step changes	104.9	78.6	214.3	Since submitting our Initial Proposal, we are experiencing increasing challenges and cost pressures from external factors and have adjusted the opex forecast to reflect step changes for these new challenges.
Total recurrent network costs	1,845.4	1,819.0	2,027.6	
Network growth escalation	52.9	32.3	30.5	Western Power has amended the circuit length in the distribution network growth escalation factor, consistent with the Draft Decision required amendment. We also updated circuit length in the transmission network growth escalation factor to reflect the latest forecast growth. We amended the customer numbers transmission network growth escalation factor to use the number of transmission connections, consistent with the Draft Decision required amendment and updated it to reflect the latest customer numbers. We also amended the customer numbers distribution network growth escalation factor to reflect the most recent forecast of customer numbers for the AA5 period.
Productivity	(14.3)	(108.4)	(31.1)	Western Power has updated its position to include an opex productivity factor of 0.5 per cent per annum. Western Power is facing a number of challenging external factors impacting our costs. As such, imposing a higher productivity factor than 0.5 per cent per annum would set an unrealistic productivity target and is inconsistent with other regulator approaches.
Non-recurrent costs	72.5	72.5	11.5	We have shifted the costs associated with the decommissioning of distribution overhead lines from opex to capex, consistent with the Draft Decision required amendment.
Labour cost escalation	42.7	39.4	24.3	Western Power has updated the labour escalation rate to reflect the latest forecast data, consistent with the Draft Decision required amendment.
Expensed Indirect costs	183.4	177.1	187.5	Western Power has removed growth escalation factors from the forecast corporate costs for the AA5 period, consistent with the Draft Decision required amendment. Western Power has amended forecast indirect expenditure to adjust the growth escalation and productivity factor consistent with the approach adopted for direct opex outlined above.
Total	**2,182.7**	**2,032.0**	**2,250.3**	

248. Western Power has revised the forecast opex in accordance with the Draft Decision required amendment for the following aspects:

- amending the circuit lengths in the distribution escalation growth factor to take into account our plans to convert parts of the network to SPS
- amending the customer numbers transmission network growth escalation factor to use the number of transmission connections
- removing growth escalation factors from corporate costs
- shifting decommissioning costs associated with the removal of overhead lines from our forecast opex to forecast capex, as outlined in section 5.3.3.3
- updating the labour escalation factor to reflect updated forecast data.

249. For other components of opex, Western Power has either adopted the required amendment with minor modifications or proposed an alternative position.

250. The following sections provide further supporting information where we have proposed an alternative position to the Draft Decision required amendments.

5.4.1 Recurrent network base costs

251. In its Draft Decision, the ERA accepted Western Power's proposed base year opex. As part of its assessment, the ERA engaged Engevity to benchmark Western Power's performance against other service providers. Engevity's analysis demonstrated that we benchmark well in terms of expenditure against our peers in the NEM.[40]

252. As our proposed base year is the penultimate year of the AA4 period, we must roll forward the base year to account for inflation in the final year of the AA4 period. Our Initial Proposal rolled forward the base year opex to 2021/22 using an estimated inflation forecast of 1.84 per cent based on the forecast applied in the AA4 Final Decision. We have updated this calculation in our Revised Proposal to account for actual inflation of 6.1 per cent in 2021/22.[41]

253. As a result, our proposed base year opex has increased to $1,813.3 million.

5.4.2 Step changes

254. In its Draft Decision, the ERA accepted nine of our proposed step changes. The ERA required amendments to the silicone treatment program step change.

255. Since submitting our Initial Proposal, we are seeing increasing challenges and cost pressures from external factors such as increased insurance premiums felt across the industry and a recent court judgment confirming Western Power's new legal obligation to inspect private power poles. Western Power has adjusted upwards the Initial Proposal for opex to reflect these new challenges.

256. Western Power has retained all of the step changes included in its Initial Proposal and has updated its position to include a step change for the silicone treatment program. As part of our review of forecast AA5 opex in response to the Draft Decision, Western Power also identified additional cost increases that were not captured in our Initial Proposal. In addition, the ERA required Western Power to provide evidence that

40 ERA, *Draft Decision proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 6: Operating expenditure, p. 6.

41 Australian Bureau of Statistics, Consumer Price Index, Australia, June 2022.

the proposed reactive replacement of streetlights with light-emitting diode (**LED**) globes will meet current streetlighting standards and has the lowest lifecycle cost.

257. Table 5.18 provides a summary of our updated position on step changes, with further information provided below on those step changes that differ from the Draft Decision.

Table 5.18 Revised step changes, $ million real at 30 June 2022

Step change	Description	Initial Proposal	ERA Draft Decision	Revised Proposal
Silicone treatment program	To mitigate the risk associated with PTF due to the accumulated backlog caused by a pause on the live-line silicone treatment program during the AA4 period	26.4	-	40.3
Insurance costs	Significant increases in premiums forecast across the energy sector due to recent extreme claim events	-	-	43.0
SaaS	Movement from ICT capex to opex for cloud-based SaaS solutions	-	-	28.2
Private Pole inspections	Management of PPAP in line with a holistic full inspection cycle, driven by obligations placed upon Western Power from a court judgment issued by the Supreme Court of Western Australia, Court of Appeals in July 2021	-	-	24.3

5.4.2.1 RA-06.02 Opex – Silicone treatment program

258. In the Draft Decision, the ERA required Western Power to remove the proposed step change in opex for the silicone treatment program.

259. In the course of making its Draft Decision, the ERA commissioned Engevity to conduct a technical review of Western Power's AA5 opex associated with the silicone treatment program. Engevity's review included an assessment of Western Power's live-line and de-energised silicone treatment of insulators to prevent PTF. ERA and Engevity supported the PTF mitigation strategy that will focus on using the forecast expenditure to treat assets that pose safety and reliability risks. However, Engevity advised that[42]:

> *[Engevity] note that the move away from live line work is not required under the Energy Safety Order 01 – 2021 which instead recommends improved equipment testing, compliance and work practices for live line insulator washing. This is largely consistent with the Victorian Electricity Supply Industry guidelines[43] and recent awareness publications involving washing equipment condition[44]. On this basis, [Engevity] do not consider that the step change is efficient.*

260. Western Power has updated the step change for the silicone treatment program in its forecast opex for the AA5 period and provides further information as support for this step change.

42 ERA, *Draft Decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 6: Operating Expenditure – Section 5.2.1.

43 Victorian Electricity Supply Industry, VESI Fieldworker Handbook, updated 2008, pp. 15-16.

44 Victorian Electricity Supply Industry, VESI HV Live Work Committee & VESI Work Practices Committee – Awareness Bulletin Live Work Equipment. A copy of this document can be found here.

261. As outlined in our Initial Proposal, the primary driver for this step change is to mitigate the risk associated with PTF due to the accumulated backlog caused by a safety-related pause on the live-line silicone treatment program.

262. The Draft Decision acknowledges that this program was justified in the AA4 period[45]. Western Power has washed, and silicone treated about 20,000 structures per annum in the AA4 period before the workforce safety incident in January 2020. The treatment volume in our base year (2020/21) was less than 10 per cent of historical volumes due to the pause on the program pending the outcomes of the incident investigation. Historical volumes were provided as part of the determination process.

263. As outlined in our Initial Proposal, following the pause in the live-line silicone treatment program, Western Power reduced the silicone treatment program volumes to 5,000 per annum to address only the highest safety risk assets using a combination of de-energised siliconing and insulator replacement solutions.

264. This has resulted in a deficit of about 15,000 structures per annum that are required to be treated to maintain the risk associated with PTFs. As a result, the PTFs forecast shows an increase of PTFs in medium and low fire risk zones during the AA5 period, resulting in localised reliability impacts on the feeders with historical PTFs, especially rural long feeders.

265. This risk has further increased due to the accumulated backlog of 35,000 structures from the last three years of the AA4 period where very limited volumes of treatments were completed. The 2021/22 PTF season resulted in the highest conversion rate of PTF to ground fire, as well as multiple outages to customers related to PTF and nuance tripping due to excessive leakage current. This was compounded by Total Fire Ban days which prolonged restoration timeframes. This had severely affected the reliability of supply to communities, resulting in substantial increases in the number of ministerial and LGA complaints, as well as parliamentary and media questions on reliability of the Western Power Network.

266. The PTF strategy for the AA5 period requires treatment of 20,000 structures per annum from 2022/23, of which only approximately 5,000 can be delivered with the Draft Decision required amendment to remove the silicone treatment program step change. This is because the siliconing program was paused during the base year during the review of work practices, so lower than normal scheduled volumes were completed in the base year. Should the Draft Decision position be maintained, this additional backlog of approximately 15,000 treatments will increase the total cumulative backlog to about 50,000 by 30 June 2023, further impacting the reliability of rural long feeders.

267. In our Initial Proposal, we outlined that the PTF mitigation strategy is to focus on using the forecast expenditure to treat assets that pose the highest fire risks. Additionally, the strategy is being reviewed to ensure that the treatments applied provide optimal value, and risks are adequately managed.

268. Since the Initial Proposal, Western Power has undertaken trials and conducted further investigations, which have provided a potential live-line washing and siliconing option through the use of helicopters. When introducing a new work practice, Western Power is required to assess and implement adequate controls to mitigate workforce safety risk to 'so far as reasonably practical' (**SFAIRP**).[46] As a result, Western Power is likely to start the live-line silicone program from 2023/24.

269. Given the context above, Western Power plans to address 135,000 structures over the AA5 period to mitigate the risk associated with PTFs to maintain the safety (fire) and reliability performance of the

---

45 ERA, *Draft Decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 6: Operating Expenditure – Section 5.2.1.

46 Western Power's safety and health obligations are set out in the Electricity (Network Safety) Regulations 2015 (WA) and the Work Health and Safety Act 2020 (WA). The Dangerous Goods and Safety Act 2004 (WA) sets requirements for how Western Power manages the risk of fire, explosions, and leaks. The Work Health and Safety (WHS) Act 2020 requires Western Power to ensure the health and safety of workers and workplaces.

network. Of these, 120,000 structures are proposed to be addressed through this step change, while 15,000 structures will be addressed through Western Power's existing asset renewal programs in the AA5 period (e.g., pole replacement). This is consistent with the expectations of Western Power's key external stakeholders (e.g., Building and Energy and the Minister of Energy) and the findings of Western Power's CEP, where customers indicated that maintaining safety and reliability performance was critical.

5.4.2.1.1 Options assessment

270. Since our Initial Proposal, we have re-assessed alternative options for silicone treatments, considering the feasibility of live-line silicone treatments and changes in available treatment costs. The assessment of the three options is summarised below:

- silicone treatment on de-energised line (recommended option in the Initial Proposal)
- replace insulators on live-line
- live-line silicone treatment and live-line insulator replacement.

271. Our assessment of these options demonstrates that live-line silicone treatment is the most prudent option, which is in line with Engevity's recommendation. Live-line replacement of at-risk insulators in highest fire consequence areas is the recommended option compared to de-energised silicone treatment if live-line silicone treatments are not available. These options form the basis of this Revised Proposal to replace insulators on 5,000 structures in 2022/23 and address the remaining insulators through live-line silicone treatment over the remaining four years of the AA5 period.

Silicone treatment on de-energised line – recommended option in Western Power's Initial Proposal

272. This option is to apply silicone treatment on de-energised lines to treat assets in extreme and high fire risk zones as they pose the highest fire risks.

273. This option has the following benefits:

- feasibility of the treatment given the workforce safety risk
- targeting insulators that pose high safety (fire) risk and so it is expected to return high benefit for moderate additional cost
- compliant with the *Electricity (Network Safety) Regulation 2015* and associated Electricity Network Management Safety System requirements
- compliant with Western Power's Asset Management Policy
- aligns with Western Power's risk appetite
- aligns with customer and community expectation with respect to safety.

274. However, we note that this option will have an impact on customers from increased outages while the silicone treatment is applied. This will improve safety, but may reduce reliability performance.

275. Table 5.19 shows the volumes and cost of the silicone treatment on de-energised lines option.

Table 5.19 AA5 forecast - silicone treatment on de-energised line option, $ real at 30 June 2022

Program	Category	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Total
Wash & Silicone Insulators (De-Energised)	Number of units	5,000	15,000	30,000	35,000	35,000	120,000
	Unit Rate ($)	1,157	1,157	1,157	1,157	1,157	1,157
	Total opex ($ million)	5.79	17.36	34.71	40.50	40.50	138.84

276. With this option, the PTF forecast shows an increase of PTFs in medium and low fire risk zones during the AA5 period, resulting in localised reliability impact on the feeders with repeat PTFs. In addition, this option will result in longer planned customer outages and deliverability challenges.

Replace insulators on live-line

277. This option is to replace the at-risk insulators in live-line condition with new insulators that demonstrate superior leakage current performance in high polluting environments. The insulators will be replaced in extreme and high fire risk zone as they pose the highest fire risks.

278. This option has the following benefits:

- lower net present whole of lifecycle cost[47] compared with de-energised silicone treatment due to:
  - installation of superior insulator (silicone rubber insulator) live-line at lower cost than de-energised replacements
  - the new silicone rubber insulator that does not require ongoing silicone treatment and has lower material cost than traditional red Tyco polymeric insulators
- feasibility of the treatment given the workforce safety risk until it is mitigated to SFAIRP
- targeting insulators that pose high safety (fire) risk and so it is expected to return high benefit for moderate additional cost
- compliant with the *Electricity (Network Safety) Regulation 2015* and associated Electricity Network Management Safety System requirements
- compliant with Western Power's Asset Management Policy
- aligns with Western Power's risk appetite
- aligns with customer and community expectation with respect to safety.

279. However, the cost of this treatment approach at sufficient volumes to reduce the PTF risk is significantly higher than the other options. We also note that live-line work needs careful consideration and is undertaken following a detailed risk assessment and decision matrix. Table 5.20 shows the volumes and cost of the silicone treatment on live-line option. Note, this option would be a capex solution rather than an opex solution.

47 Investment Evaluation Model EDM 56612203.

Table 5.20 AA5 forecast – replace insulators on live-line option, $ real at 30 June 2022

Program	Category	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Total
Insulator Replacement Program (PTF Mitigation)	Number of units	5,000	15,000	30,000	35,000	35,000	120,000
	Unit Rate ($)	1,610	1,610	1,610	1,610	1,610	1,610
	Total Dx capex ($ million)	8.05	24.15	48.30	56.35	56.35	193.20

Live-line silicone treatment and live-line insulator replacement

280. This option is to:

- silicone insulators live-line, prioritising insulators prone to PTFs in extreme and high fire risk zones and on feeders known as prone to PTFs (repeat offenders) in the last four years for the AA5 period, and
- replace (in live-line condition) the at-risk insulators with new insulators that demonstrate superior leakage current performance in high polluting environments in the first year of the AA5 period.

281. This option provides the best outcomes in terms of cost, public safety and reliability performance once the adequate controls are in place to mitigate workforce safety risk to SFAIRP. Table 5.21 shows the volumes and cost of this option.

282. This option has all the benefits of the other options considered, but at a lower whole of lifecycle net present cost and brings the overall PTF risk down to high during the AA5 period. As such, it is the preferred option and forms the basis of the step change in our opex for the AA5 period.

Table 5.21 AA5 forecast – replace insulators on live-line option, $ real at 30 June 2022

Program	Category	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Total
Insulator Replacement Program (PTF Mitigation)	Number of units	5,000	-	-	-	-	5,000
	Unit Rate ($)	1,610	-	-	-	-	1,610
	Total Dx capex ($ million)	8.05	-	-	-	-	8.05
Dx – Wash & Silicone Insulators (live-line)	Number of units	-	15,000	30,000	35,000	35,000	115,000
	Unit Rate ($)	-	350	350	350	350	350
	Total opex ($ million)	-	5.25	10.5	12.25	12.25	40.25

Expenditure forecast

283. As outlined above, Western Power plans to mitigate the risk associated with PTFs over the AA5 period to maintain the safety (fire) and reliability performance of the network by addressing:

- 115,000 structures through a proposed opex step change for the silicone treatment program commencing in 2023/24
- 5,000 structures through Western Power's existing asset renewal programs in the AA5 period (such as pole replacements) in 2022/23.

284. The proposed expenditure forecast for the preferred option noted above for the silicone treatment program during the AA5 period is shown in Table 5.22 below.

Table 5.22 AA5 forecast - silicone treatment program, $ real at 30 June 2022

Category	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Total
Total Dx capex ($ million)	8.05	-	-	-	-	8.05
Total opex ($ million)	-	5.25	10.5	12.25	12.25	40.25

5.4.2.2 Insurance costs

285. Western Power is proposing an additional opex step change of $43.0 million for increased insurance costs over the AA5 period.

286. Insurance premium rates are subject to external factors that our other operating costs are not. This means that insurance premiums are not expected to follow typical inflationary drivers (e.g. consumer price index or average weekly earnings) that apply to many of our other operating costs over the AA5 period.

287. Whilst our insurance premiums largely reflect the risks of insuring our exposure to risk factors, other external factors have considerable bearing on insurance pricing. These external factors include:

- increasing inflation, and the resulting impact on replacement values, as well as supply chain issues
- recent claims activity of other insured businesses (nationally and globally)
- the increased frequency and severity of natural catastrophes
- demand from other utility companies and government entities for the same types of insurance, such as bushfire liability coverage in Australia
- market capacity available, which depends on the amount of available insurer capital and willingness or appetite to deploy capital
- capital requirements.

288. The insurance market has decreased for many of the insurance products we purchase due to significant global claims activity and a resultant reduction in market capacity. Unprofitable carriers and syndicates have left the market, leaving reduced capacity with the remaining carriers. This has led to substantial premium increases and currently there is no information to suggest this will change based on the increased rate of natural catastrophes domestically and globally, from which underwriters will take time to recover.

289. Liability insurance cover capacity is reducing globally, resulting in it being more expensive and difficult to obtain cover. In addition, some of our contractors and subcontractors cannot get cover for certain ‘high risk’ activities conducted on or around the network which means Western Power could become responsible for this cover in spite of contractual indemnities. Underwriters perceive this as increased risk and, accordingly, increase premiums.

290. With anticipated ongoing climate change and global claims experience it is unlikely bushfire-exposed premiums and deductibles will return to the levels seen 5 to 10 years ago. A major consideration influencing premium rate for liability is the increasing severity and frequency of fires due to climate change. The domestic and global appetite to ensure bushfire peril is declining, and bushfire is considered to be one

of our key risks. Any distinction due to geographic differences and network performance that were previously in Western Power's favour are no longer being passed on in premium savings.

291. It should be noted that the proposed step change does not take into consideration the effect that any bushfire caused by a utility in the AA5 period would have on premium rate increases.

292. Underwriter appetite to provide cover for assets linked to scope 1 and 2 emissions is diminishing. This will increase pressure on premiums until Western Australia's decarbonisation plan takes effect, especially in regard to the percentage of coal-fired electricity Western Power transmits and distributes.

293. From 2020/21 to 2022/23, our actual insurance premiums increased by 43 per cent. We anticipate insurance premiums will continue to increase well above the rate of change component of our opex forecasts over the AA5 period.

5.4.2.3 SaaS

294. Western Power is proposing an additional opex step change of $28.2 million for SaaS solutions over the AA5 period. Western Power has a "proactive cloud first" approach. This approach includes the selection of SaaS over on-premises commercial-off-the-shelf solutions, where it is prudent to do so. Key benefits of SaaS include:

- lower upgrade costs – many SaaS solutions remain current through small frequent upgrades rather than the large upgrades required of on-premises solutions
- continuous release of features which offer greater business benefit
- lower costs to maintain as SaaS solutions do not require a separate infrastructure stack.

295. While these benefits are available from SaaS solutions, the annual license cost of SaaS solutions as well as the complexity associated with integrating particular SaaS solutions as a part of a broader business process flow can mean that the implementation of an on-premises solution is more prudent in some cases. Solution selection is covered in the scoping phase of Western Power investments as part of the options analysis, in line with Western Power's Investment Governance Framework. It would not be prudent to carry-out this level of analysis significantly in advance of progressing an investment as ICT technology evolves rapidly.

296. While the level of expenditure on ICT solutions can be estimated, supported by the use of benchmarks, the overall split between SaaS (opex) and on-premises (capex) may vary. Western Power has forecast that $28.2 million of the planned corporate ICT investment in the AA5 period will be in SaaS technology. As such, Western Power is proposing an additional opex step change of $28.2 million for SaaS over the AA5 period. The driver for this step change is a capex-opex trade-off, with the total proposed expenditure over the AA5 period remaining the same as included in our Initial Proposal. See section 5.3.8.3 which shows the corresponding reduction in corporate ICT capex.

297. The forecast for this step change was developed on the basis of:

- a review of the types of solutions that are likely to support the business outcomes across the AA5 period
- consideration of which solution components were likely to be SaaS-based on review and expert knowledge of market offerings.

298. SaaS solutions forecast to be implemented in the AA5 period include:

- integration platforms

- workflow management platforms
- user experience platforms
- extensions to customer management and customer communications (based on existing Dynamics 365 platform)
- implementation of a contract lifecycle management solution, including legislated workplace health and safety solutions
- field work scheduling and optimisation solutions.

5.4.2.4 *Private Pole inspections*

299. Western Power is proposing an additional opex step change of $24.3 million for the management of PPAP over the AA5 period. The requirement for this expenditure is driven by obligations placed upon Western Power from the court judgment issued by the Supreme Court of Western Australia, Court of Appeals in July 2021 with regards to the Parkerville private pole failure case.

300. The investment required to manage PPAPs was not included in our Initial Proposal due to the timing of the court judgment. However, the potential for additional investment was noted in our Initial Proposal as an ongoing legal proceeding which may influence forecast investment in response to the Draft Decision.[48]

5.4.2.4.1 Parkerville private pole failure case

301. In accordance with the ruling of the Supreme Court of Western Australia, the assets that fall within the scope of this obligation are poles *"… at which an electricity distribution system is attached to the consumer mains"*. These tend to be the first pole within the consumer's internal power distribution system. These are referred to as PPAP.

302. Western Power has lodged an appeal to this decision, but until and unless the appeal is successful, Western Power is obliged to follow the requirements of the court decision. The appeal was heard in the High Court of Australia in September 2022. A decision is expected in early 2023.

303. Under the obligation imposed by the court decision, Western Power's responsibilities include:

- performing the necessary inspections on PPAP in order to understand their condition
- utilising this information to assess the likelihood of failure, potential consequences of failure and level of risk represented by these assets in accordance with the engineering practices that Western Power applies to its own assets, and
- issuing a notice to the owner of the pole on the required maintenance to perform on the pole, up to and including replacement. In the most serious cases, or where the notice period has expired and the pole condition has not been rectified, this includes the immediate disconnection of the service, and reconnection after the remediation works have been carried out.

304. This obligation does not include repairing, reinforcing or replacing PPAP after a condition assessment has been performed.

48 Paragraph 103 of Initial Proposal.

5.4.2.4.2 PPAP investment requirements

305. Western Power has an estimated 150,000 PPAPs connected to its the network. The inspection of these poles began in October 2021 in response to the WA Supreme Court decision and as at the end of 2021/22, approximately 34,500 inspections were completed.

306. At the time of our Initial Proposal, we did not have a forecast for the costs of inspecting PPAP with sufficient certainty to meet the Access Code requirements that require Western Power to both efficiently minimise costs and maintain the safety and reliability of the covered network. A robust forecast has since been developed on the basis of approved unit rates for pole inspections and forecast volumes based on existing criteria used to determine required treatments.

307. Table 5.23 shows the expenditure profile required to carry out PPAP inspections, based on Western Power's inspection requirements for PPAP.

Table 5.23 AA5 forecast opex for PPAP management, $ real at 30 June 2022

Program		2021/22 (Actuals)	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Total
PPAP inspections	Volumes	34,641	28,840	28,840	28,840	28,840	28,840	144,199
	Unit Rate ($)	142	168	168	168	168	168	-
Total opex	**($ million)**	**4.92**	**4.85**	**4.85**	**4.85**	**4.85**	**4.85**	**24.26**

5.4.2.5 RA-06.01 Opex - Streetlights

308. In the Draft Decision, the ERA required Western Power to provide evidence that the proposed reactive replacement of streetlights with LED globes will meet current streetlighting standards and has the lowest lifecycle cost.

309. Western Power maintains its position to include a step change for repair streetlight faults in its forecast opex for the AA5 period and has provided additional supporting evidence to demonstrate that LED globes provide the lowest lifecycle cost, consistent with the Draft Decision required amendment.

310. For the reasons set out further in section 5.5.2 (RA 08.08 – Streetlighting Exit Service), Western Power maintains that the current streetlight standards do not apply when streetlights are simply maintained by replacing a defective globe.

311. LGAs are seeking the ability to introduce more energy efficient streetlighting technologies such as LED to reduce costs, carbon emissions and deliver community benefit.[49] The LGAs' considerations are consistent with Australia's signing and subsequent ratification of the Minamata Convention which prohibits the import, export and manufacture of High-Pressure Mercury Vapour lamps. Hence, in line with Western Power's sustainability objectives for carbon reduction, we considered all equivalent replacement options for such globes while maintaining the lowest lifecycle cost.

312. Western Power understands that some LGAs have some concerns with Western Power's current strategy regarding transitioning from traditional to LED bulbs. Western Power will undertake further engagement with stakeholders to better understand those concerns and develop a pathway to address concerns where practicable. A potential pathway to proactively replace streetlighting assets prior to their efficient end of life or to change the current design of a streetlight string will require additional capex and opex, which will

[49] As noted in State Council Resolution December 2017 – 126.6/2017.

put significant upward pressure on the fixed asset charge component of streetlight tariffs. This in turn has the potential to put upward pressure on retail tariffs that are regulated by the State Government.

5.4.2.5.1 Options assessment

313. Western Power considered the following replacement options for mercury vapour globes, the assessment of which is summarised below:

- convert all mercury vapour luminaires to Compact Fluorescent Lights (**CFL**)
- reactively replace mercury vapour and certain wattages of Metal Halide (**MH**) with LED globes
- replace CFL and High Pressure Sodium (**HPS**) with like for like globes
- replace CFL and HPS luminaires with LED luminaire
- reactively replace all traditional streetlights with LED luminaire.

Convert all mercury vapour luminaires to CFL lights

314. The lowest lifecycle cost option for replacement of mercury vapour globes would be to convert all mercury vapour luminaires to the cheapest globe replacement option of CFL. However, this does not meet the sustainability objectives of Western Power nor LGAs. As such, this option was discarded.

315. Further, as the expected lifespan of a luminaire is approximately 20 years, earlier replacement of the luminaire does not fulfill the expected asset life at installation and carries the potential for a write-down of Western Power's RAB.

Reactively replace mercury vapour and certain wattages of MH with LED globes

316. Approximately 70 per cent of the current streetlight luminaire fleet is under 20 years old. As such, Western Power sought to maximise the lifespan of the traditional luminaire fleet by implementing an interim measure of installing a LED globe only when the luminaire is still serviceable. This option was considered prudent as it:

- met sustainability objectives of LED conversion, providing carbon reduction and phasing out of mercury vapour globes
- offered a lower cost interim solution for luminaires still within operating life
- provided lower tariffs to LGAs for streetlighting expenditure
- provided lowest lifecycle cost due to reduced maintenance expenditure and deriving full life of luminaires.

317. Regarding the compliance of LED globes with current streetlight standards, the replacement of a traditional globe with an equivalent LED globe via Western Power's reactive replacement strategy is not an upgrade, but an equivalent maintenance replacement. As previously installed mercury vapour globes are no longer available, Western Power was required to find an alternative asset to maintain streetlights and closely matches replacement LED globes according to asset availability. Equivalence of the lighting profile was a requirement of Western Power's tender for the supply of LED globes.

318. During the recent tender evaluations for supply of LED globes, LED equivalent globes for mercury vapour and certain wattages of MH were cost-effective and therefore ordered to meet demand following the cessation of mercury vapour globes. LED equivalent globes for CFL and HPS replacements were cost

prohibitive at the time of tender and will be reconsidered in future years following improvement of LED technologies and expected associated reduction in cost.

Unit rate and lifecycle cost comparison

319. Table 5.24 summarises the unit cost and expected service life of globes under each option. As demonstrated in the table, the option to reactively replace mercury vapour and certain wattages of MH with LED globes provides the lowest lifecycle cost for the replacement of streetlight globes.

320. Further, the rapid pace of technological change for LED products is expected to reduce LED globe and luminaire pricing while improving performance. The current strategy extends the life of existing streetlight luminaires, while converting approximately half of streetlight assets to LED via the cost-effective use of LED globes. Western Power will continue to monitor the cost-effectiveness of LED replacement globe options for remaining assets and update the Public Lighting Strategy accordingly to ensure the lowest lifecycle cost for replacement of streetlight globes.

Table 5.24 Comparison of unit rates and service life of streetlight replacement options

Option	AA5 Unit Rate	Increase from traditional globe rate	% Increase	Expected service life
Convert mercury vapour luminaires to CFL	Discarded as option does not meet sustainability objectives			
Reactively replace mercury vapour and certain wattages of MH with LED globes	$341	$28	9%	10 years
Replace CFL and HPS with like for like globes	$313	-	-	5 years
Replace CFL and HPS luminaires with LED luminaire[50]	$866	$553	177%	20 years
Reactively replace all traditional streetlights with LED luminaire	$866	$553	177%	20 years

5.4.3 RA-06.07 Opex – Productivity factor

321. In the Draft Decision, the ERA required Western Power to amend the productivity factor to 2 per cent per annum. The ERA indicated it was reasonable to expect a service provider efficiently minimising costs would seek to achieve a productivity factor of 2 per cent per annum. The ERA argued this would require Western Power to deliver opex efficiencies more consistent with other network operators in Australia.[51]

322. We have adopted a productivity factor based on analysis of industry practice, which is provided at Revised Proposal Attachment 6.1 - Forecast Cost Escalators for Western Power's 2022-27 regulatory period.[52]

323. Western Power has updated our position to include an opex productivity factor of 0.5 per cent per annum.

50 Note that as approximately 70 per cent of streetlight luminaires are under 20 years old, replacement of <20 year old luminaires will not fulfil the expected asset life for these assets and may incur a write down of Western Power's Regulated Asset Base.

51 ERA (2022), *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27,* Attachment 6: Operating expenditure, 9 September, p.17.

52 Synergies Economic Consulting, Forecast Cost Escalators for Western Power's 2022-27 regulatory period

324. The productivity forecast is intended to be a broad measure of industry productivity that is informed by trends in the electricity industry and other comparable sectors. It is not intended to impose a productivity catch-up on networks that are not amongst the best performing networks.

325. The analysis of industry practice notes that the choice of productivity growth can be misleading if sole or primary weight is placed on a single productivity estimation without considering a broad range of information.[53] As such, it has considered a range of recent productivity growth estimates that are relevant to Western Power's circumstances, including:

- electricity and gas distribution networks
- electricity supply chain
- labour productivity
- water productivity
- international electricity productivity.

326. On the basis of this analysis, Synergies Economic Consulting recommended an opex productivity forecast of 0.5 per cent per annum for the 2022-27 period. We note that this is consistent with the AER's current opex productivity assumption used in its base-step-trend opex forecasting methodology.[54]

327. Our opex productivity forecast addresses the Draft Decision that the real labour cost escalation forecast should be no higher than the assumed rate of productivity growth.[55] Our real labour escalation forecast of 0.29 per cent is somewhat lower than the updated 0.5 per cent opex productivity forecast.

328. We also note that Western Power is facing a number of challenging external factors impacting our costs:

- rising interest rates – over recent years, interest rates have been at historically low levels. However, economic conditions have now started to change and interest rates are rising. The Reserve Bank of Australia has increased the cash rate in consecutive months between May and November 2022, and further increases are expected
- higher inflation – the cost of living and doing business is rising. In addition, the higher inflation is, the higher our costs, and this will flow through to our network charges. Some of the materials we use to build and maintain the network are increasing by rates much higher than headline inflation
- tightening labour markets – Australia's labour market has tightened sharply over the past year, with the lowest unemployment rate since 1974. The latest Australian Bureau of Statistics Business Conditions and Sentiments survey indicated that almost a third of employing businesses are having difficulty finding staff[56]
- supply chain disruptions – there continue to be delivery challenges presented by the current world climate, including competition for local resources and global supply chain disruptions.

329. Western Power is absorbing some of these cost pressures, including additional costs for the energy transformation program and related initiatives such as the Change Control 5 program which includes resourcing to allow for the 12 month delay to the commencement of the WEM, additional reforms

---

53 Revised Proposal Attachment 6.1 - Forecast Cost Escalators for Western Power's 2022-27 regulatory period

54 AER (2019), *Final decision paper: Forecasting productivity growth for electricity distributors*.

55 ERA (2022), *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27,* Attachment 6: Operating expenditure, p 20.

56 ABS, Business Conditions and Sentiments – June 2022.

including the EV Action Plan and WOSP. As such, putting aside the correct application of a productivity factor, Western Power considers that imposing a higher productivity factor than 0.5 per cent per annum would set an unrealistic productivity target.

330. In addition, Western Power notes that as part of its assessment, the ERA engaged Engevity to benchmark Western Power's performance against other service providers. Engevity's analysis demonstrated that we benchmark well in terms of expenditure against our peers in the NEM.[57]

5.4.4 RA-06.08 Opex – Indirect expenditure

331. In the Draft Decision, the ERA required Western Power to amend its forecast indirect expenditure to:

- remove growth escalation
- amend the productivity factor to 2 per cent.

332. Western Power has amended forecast indirect expenditure to:

- remove the growth escalation factors from the forecast corporate costs for the AA5 period
- update its position to include an opex productivity factor of 0.5 per cent per annum for indirect expenditure.

333. This is consistent with the approach we adopted for direct opex outlined above.

5.4.5 RA-06.10 Opex – Forecast opex

334. We do not accept the Draft Decision required amendment to reduce our forecast opex from $2,182.7 million to $2,032.0 million. We consider the Draft Decision opex forecast is lower than what would be incurred by a service provider efficiently minimising costs.

335. Taking into account the individual items set out above, Western Power has amended our AA5 opex forecast. Our amended opex forecasts are set out in Table 5.25.

57 ERA, *Draft Decision proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 6: Operating expenditure, p. 6.

Table 5.25 AA5 forecast opex, $ million real at 30 June 2022

	2022/23	2023/24	2024/25	2025/26	2026/27	AA5 Total
Recurrent network base costs	362.7	362.7	362.7	362.7	362.7	**1,813.3**
Step changes	26.5	37.8	46.4	51.3	52.3	**214.3**
Total recurrent network costs	**389.2**	**400.4**	**409.0**	**414.0**	**415.0**	**2,027.6**
Network growth escalation	2.9	4.0	6.1	7.9	9.6	**30.5**
Productivity	- 2.0	- 4.0	- 6.2	- 8.4	- 10.5	**- 31.1**
Non-recurrent costs	6.0	5.4	0.1	-	-	**11.5**
Expensed Indirect costs	38.6	37.5	36.0	36.9	38.4	**187.5**
Labour cost escalation	3.2	4.0	4.8	5.7	6.6	**24.3**
Total	**437.9**	**447.3**	**449.9**	**456.2**	**459.0**	**2,250.3**

5.5 Services (Draft Decision Attachment 8)

5.5.1 RA-08.05 – Capacity allocation services

336. In its Draft Decision, the ERA required Western Power to *"resolve the outstanding matters raised by users on the capacity allocation service and amend the reference service accordingly"*.[58]

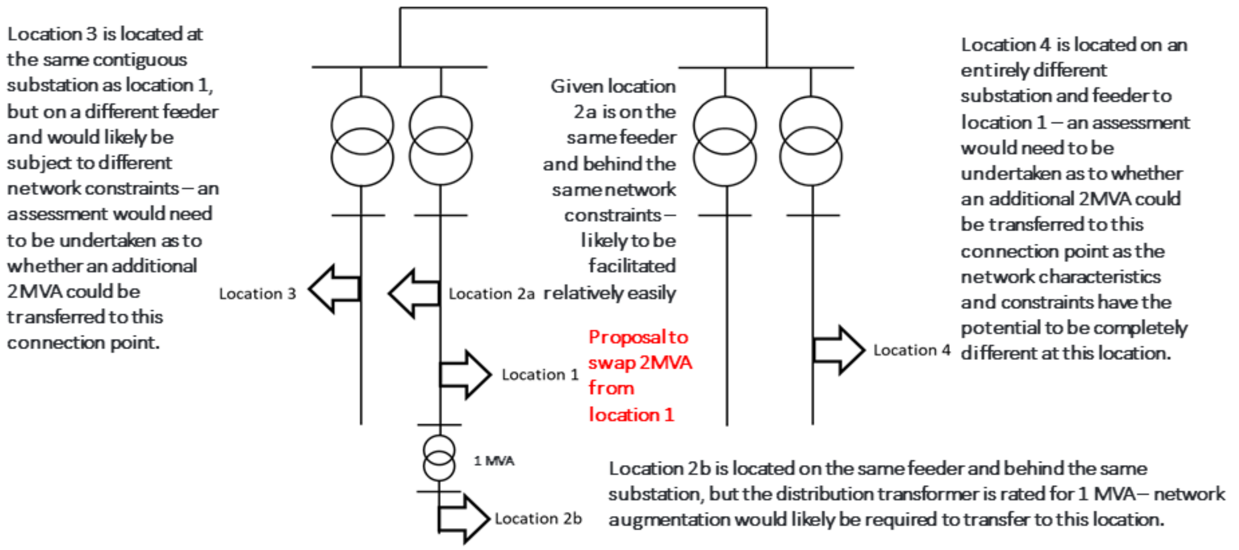
337. Western Power has engaged extensively with interested stakeholders and understands the concerns relate to the capacity aggregation, the sharing of non-reference service of some retailers and the ability of retailers to aggregate capacity at the destination connection point/s.

338. Taking this feedback on board and having regard to Appendix 3 of the Access Code as it relates to the relocation of capacity between two connection points, Western Power is proposing to facilitate a capacity (swap) relocation service under the AQP as a two-step process.

339. Western Power considers there are likely to be three basic tiers of capacity swap allocation services that would require assessment (same feeder, same substation, and different substation), as illustrated below.

58 ERA, *Draft decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 8: Services, pg. 10.

Figure 5.5 Western Power's proposed capacity allocation service process



340. The following two-step process would enable an earlier response for more straightforward applications (such as transferring capacity upstream on the same feeder):

1. Preliminary assessment – a high level review to determine if the application could proceed without affecting existing customers or the need for network augmentation, or a detailed assessment (within 30 business days of receipt of the application)
2. Assessment step – an optional step depending on the outcomes of the preliminary assessment.

341. The first step or discovery phase would require a User to complete the relevant form for a capacity (swap) relocation and submit this form to Western Power.

342. As part of the preliminary assessment, Western Power would undertake an assessment at the destination connection point of the following factors:

- capability of the destination connection point to receive the capacity
- whether the increases or decreases in contracted capacity would not be likely to impede the ability of Western Power to provide covered services to existing users
- whether any network constraints that would require augmentation, or additional works would be required on the network or in relation to network assets that impede the transfer of capacity to the destination connection point.

343. Western Power would subsequently respond to the User with whether:

- the transfer of capacity to the destination point is possible and implement the service within 50 business days of receipt of the application, or
- if not possible, provide reasons why the transfer is not possible.

344. Western Power notes that the time for an assessment would depend on the degree to which consideration of network constraints on the transmission and distribution networks needed to be undertaken, that is, the degree of assessment required would be a function of the distance between the reduction connection point and the destination connection point and the complexity of the network between the two connection points. Where an applicant decides to proceed with requesting Western Power to provide an estimate of the costs required to augment the network, or the works required to be carried out on the network or in relation to network assets to allow the capacity swap, the process will dovetail into the relevant section of the AQP (Section 7) for augmentation and/or modification of the network.

345. The AQP (Appendix B of the AAC) has been updated to reflect our proposed approach for Reference Service D2 – Capacity Allocation Service.

5.5.2 RA-08.08 – Streetlighting Exit Service

346. In the Draft Decision, the ERA required Western Power to amend the streetlight exit service (A9) as follows:

> *Western Power will maintain the streetlighting assets to ensure that the streetlighting exit service continues to be provided to original design levels. If Western Power initiates a change in the type of luminaire installed in an existing asset, it must ensure the streetlight asset meets current public lighting standards (AS/NZS 1158).*
>
> *Replace or repair the lamps and luminaires where upon investigation the lumen output no longer meets the original minimum design levels. If Western Power replaces the luminaire with a different type of luminaire, it must ensure it meets current public lighting standards (AS/NZS 1158).*[59]

347. It is worth noting our streetlight Asset Management Strategy, like all other Western Power Asset Management Strategies, is designed to comply with all applicable regulatory and technical standard obligations. In this context, all maintenance activities are chosen to ensure each asset meets the standards that it was designed to comply with at the time of the construction. Consistent with other asset maintenance and replacement programs, building on this technical foundation, every investment decision is made using the prudency and risk-based principles articulated throughout our AMS. This includes ensuring they meet the NFIT criteria and represent a safe, reliable, and cost-efficient solution for our community.

348. Therefore, in this Revised Proposal, Western Power has not amended the streetlight exit service (A9) to include the Draft Decision proposed wording for the reasons set out below. Western Power understands that some LGAs have some concerns with our current strategy regarding the transition from traditional globes to LED globes. Western Power will undertake further engagement with stakeholders to better understand those concerns and develop a pathway to address concerns where practicable.

349. Western Power considers the wording proposed in the Draft Decision required amendment has broader implications on the capex and opex for streetlighting services where it relates to the replacement of a globe.

350. Compliance with the current public lighting standards (AS/NZS 1158:2022) is inclusive of:

- individual assets meeting specified requirements
- the system of streetlights meeting specified illumination requirements for a defined area.

---

59 ERA, *Draft Decision on proposed revisions to the access arrangement for the Western Power Network 2022/23 – 2026/27*, Attachment 8: Services, pg. 14.

351. While individual assets may be compliant with the requirements of AS/NZS 1158:2022, illumination compliance for a defined area such as a residential street cannot be ascertained without the completion of a streetlight design review (which may require the whole street's existing streetlight infrastructure to be relocated/upgraded). Public lighting standards are continuously subject to update, with updates to AS/NZS 1158 made approximately every five years in recent years. To continue to meet compliance requirements of updated standards with in situ assets would require the continual redesign and upgrade of the streetlight network, which Western Power does not consider to be feasible, practical nor in our customers' or the community's best interest (nor is it the intent of the lighting standard upgrades).

352. Western Power's current practice is to maintain public lighting assets at least to the applicable standard as at the date of original installation. The replacement of a traditional luminaire with an equivalent LED luminaire via Western Power's reactive replacement strategy is not an upgrade. It is simply maintenance of an existing in situ asset. As previously installed luminaires are no longer available, Western Power needed to obtain a new replacement globe for its maintenance and closely matched the replacement luminaires according to asset availability. Under this approach Western Power maintains public lighting standards by:

- responding to streetlight faults within defined SLAs
- carrying out night audits where concerns are raised, and remediating streetlighting infrastructure as required.

353. At an overall level, Western Power's approach to streetlighting services is as follows:

- construction of streetlights in conjunction with a greenfield site (for example, a new suburb, sub-division or road network) will be undertaken to the standard applicable at the time of construction
- construction of streetlights in conjunction with a brownfield site (for example, installation of underground power within a suburb, or major reconstruction of a road, such as the installation of a dual carriage way, that necessitates changes to lighting infrastructure) will be undertaken to the standard applicable at the time of construction
- replacement of luminaires, and other maintenance activities, are undertaken to the applicable standards as at the date of the original installation of the streetlighting asset. We note here that, where possible and practicable, Western Power does seek to include improvements to its existing streetlight network during the maintenance cycle.

354. To upgrade each streetlight to meet current public lighting standards each time a luminaire needs to be replaced, Western Power would need to:

- carry out a streetlight modelling/design review via computer-aided software – a comprehensive design review is usually carried out by an external design house for legal purposes. The cost of the review ranges from approximately $3,000 for a basic residential street, up to $15,000 for a major intersection
- amend the streetlight system based on the outcome of the design review – requirements of the design review could range from the installation of a single luminaire to installation of multiple luminaires or relocation of multiple streetlight poles with associated cabling and supply points.

355. Western Power estimated the approximate cost[60] of meeting the AS/NZS 1158:2022 compliance requirements based on the estimated annual volumes of luminaire replacement forecast in the AA5 period.

60 As required upgrades to ensure compliance with AS/NZS 1158 cannot be ascertained prior to detailed designs being completed, cost estimates have been generated by the application of scenario modelling to predicted program volumes in the AA5 period.

Table 5.26 summarises the estimated increase in program costs depending on whether this requirement applies only to luminaire replacement, or all streetlighting asset replacement programs.

Table 5.26 Approximate cost of meeting the AS/NZS 1158:2022 compliance requirements

Program	Current program estimate ($ million per annum)	Compliance upgrade program cost ($ million per annum)		% increase
		Lower range	Upper range	
Luminaire replacement	5.2	96.5	289.5	1,757% to 5,471%
Luminaire, DSLMP and globe replacement	26.4	511.8	1,535.4	1,835% to 5,705%

356. This analysis indicates that meeting compliance requirements for current public lighting standards will require at least $96 million per year over the AA5 period, which is at least a 1,757 per cent increase compared to current program estimates.

357. The requirement to provide lighting designs for each luminaire replacement, in addition to the subsequent scheduling of additional works required to bring the area to compliance with regularly updated versions of AS/NZS 1158:2022 will likely require the reworking of streetlight designs, such as spacing between lights, which may not be possible based on the existing in situ assets, whether it be in an area with overhead or underground network. Western Power is not currently funded nor resourced to carry out this work, and the requirement to do so is not practical under our reactive delivery model.

358. Western Power's long term network strategy for the metropolitan region is to underground all overhead network. This involves redesigning the lighting assets when changing from brackets on the overhead network, to standalone columns. These upgrades are designed to comply with AS/NZS 1158 at the time of implementation and will therefore be designed according to the standard at the time of installation. Any work carried out to redesign the streetlighting system on the overhead network prior to undergrounding would subsequently become redundant.

359. Western Power does not consider additional investment and increased fault response times to be in the best interest of our customers. However, if LGAs wish to proactively upgrade specific sections of the network, Western Power supports these upgrades via customer-funded programs.

5.6 Service Standard Benchmarks and Adjustment Mechanism (Draft Decision Attachment 9)

5.6.1 RA-09.02 Service standards adjustment mechanism

360. In the Draft Decision, the ERA required Western Power to remove the SST from the AAC, and rather than setting the SSB at minimal performance levels as has been done in existing approved access arrangements, they should be based on the current service standard performance. This can be achieved by using the method currently used to set the SST (average performance over the previous five years). This change is intended to remove the confusion caused by having both SSB and SST.

361. With respect to rural long feeders, the Draft Decision set the SSB at 290 minutes, consistent with the NQRS Code requirements.

362. Western Power has calculated the transmission and distribution SSB based on the average performance over the AA4 period, adjusted in the AA5 period for anticipated changes in service reliability and where

individual penalty caps applied during the AA4 period, consistent with the Draft Decision required amendment. For consistency, Western Power also applied this change to rural long SAIDI, which is a departure from the Draft Decision required amendment. This approach is discussed further below.

5.6.1.1 Change to the Service Standard Adjustment Mechanism

363. Western Power understands that under the Draft Decision proposed approach for the AA5 period, the SSAM will effectively operate in the same way as it did during the AA4 period to incentivise Western Power to maintain current service standards, or improve them where this is valued by customers. The only difference is that the measure previously labelled as a "service standard target" will be relabelled as the "service standard benchmark" and continue to be based on the average performance during the previous access arrangement period. The AAC will also no longer include a measure labelled a "service standard target".

364. Western Power will continue to be required to report on annual service standard performance. For the purposes of the SSAM rewards and penalties, if the reported annual performance is above or below what for the AA5 period will be called the "service standard benchmark" there will be a reward or penalty respectively.

365. Western Power's annual service standard report will continue to include explanations for any differences between actual performance and the SSB. We understand that the ERA expects Western Power to aim to meet the benchmarks but given that the benchmarks have been calculated using average performance over a period of time, there are likely to be overs and unders during the period. The SSAM will apply a penalty or reward as applicable in each year. If the average actual performance over the period is in line with the benchmark, the rewards and penalties will net out to zero. If the average actual performance is above or below the benchmark over the period there will be a net reward or penalty respectively.

366. The implications of the Draft Decision are that the AAC will no longer include minimum service standards. This will preference the maintenance of service standards levels as the desired outcome, over a more traditional achievement of compliance through a "meet – not meet" approach.

367. This approach will necessitate a review of Western Power's annual reporting to the ERA on SSB, noting the guidance in the Draft Decision for Western Power to report on actual performance and explain:

- the reasoning for any departures from the average
- plans to improve performance closer to the average.

368. Western Power agrees with the intent of the ERA to simplify reporting and provide greater clarity of the service standards we are expected to deliver. We have therefore accepted the Draft Decision required amendments to the SSAM in Section 4 of the AAC.

369. Western Power will work with the ERA following the completion of the access arrangement decision to develop reporting requirements for the annual reports. We expect these will need to include consideration of average performance over the whole of the access arrangement period with explanations for any performance below the benchmarks and, if relevant, plans to improve to meet the benchmarks over the period. The reasons for underperformance and, where applicable, whether it has effective plans to address those issues are key to monitoring Western Power's performance.

5.6.1.2 Rural long feeders

370. Western Power recognises the importance of network performance and customer experience, especially in relation to rural long feeder performance. We agree with the intent of the ERA to improve the performance of rural long feeders.

371. However, the effect of the Draft Decision with respect to the rural long feeders would require Western Power to significantly improve network reliability (and its investment in the network) above current levels to meet the NQRS Code requirements, or face penalties under the SSAM. This is a departure from the approach adopted by the ERA in existing approved access arrangements, which based the service standards on current service standard performance (i.e. the average performance over the previous five years). As such, we consider that the same approach should apply across all feeder types and measures to improve clarity and consistency within the mechanism.

372. Our investment plan in the Initial Proposal was aimed at maintaining overall reliability levels and managing the technical challenges associated with the integration of DER. However Western Power acknowledges the importance of the reliability to the community and the feedback from the ERA through its Draft Decision and that which it gathered through its own customer feedback process.

373. In recognition of this, we are proposing a Rural Long Targeted Reliability Program. This program will focus on the most under-performing rural long feeders, irrespective of other factors such as accessibility and customer numbers, that may have in the past led to a de-prioritisation of investment against other priorities. This is discussed in section 5.3.5.

374. In addition, we will continue our strategy of the ongoing transition to a modular grid with a meshed urban network, hybrid network in the urban fringe and autonomous networks in rural areas which will improve customer outcomes overall.

375. We tested our proposed approach with our customer reference group. Overall, participants generally expressed a preference for the alternative approach presented by Western Power, seeing it as being more realistic, future-focused and having wider benefits to the community compared to the recommendation in the Draft Decision. Key findings also included:

- Residential customers, especially Urban and Rural short, are unlikely to be willing to pay for Western Power to meet the 290-minute rural long SSB outlined in the Draft Decision
- costs and how they would be spread across residential customers were again highlighted as a key factor and concern in relation to customers' willingness to pay, with Western Power's proposed approach generally expected to be a lower-cost alternative
- concerns were also raised regarding feasibility, with participants questioning the high expected costs and area of investment, i.e., the relatively small number of rural long customers that would benefit from investment.

376. Further information about the outcomes of our customer engagement are provided in Revised Proposal Attachment 9.1 – Community and Customer Engagement Program (CEP) Report.

377. In light of the above, we have not accepted the Draft Decision SSB for rural long SAIDI. Instead, we have calculated the benchmark based on the average performance consistent with the calculation approach for other feeder types.

5.6.2 RA-09.04 Service standards benchmark – Metering services

378. The Draft Decision required the SSB for metering services to be amended to be consistent with the time periods specified in the Metering Code or Code of Conduct and apply to each individual performance of the relevant service.

379. We agree in principle with the approach in the Draft Decision to measure the performance of each individual service type against the time periods specified in the Metering Code or Code of Conduct. Western Power has updated its position to develop a service standard for each of the metering services based on the time periods specified in the metering model service level agreement (**MSLA**).

380. Western Power is proposing a 'percentage of time' approach to measuring performance for each service – that is the percentage of time the service was performed within the service standard response time over a 12 month period, consistent with the times in schedule 4 of the metering MSLA. This is to be calculated using the following formula:

$$\frac{\text{Number of metering services that met the Service Standard during the reporting period}}{\text{Total number of Metering Services performed during the reporting period}} \times \frac{100}{1}$$

381. We propose an SSB that is calculated based on the historical performance over the past five years. Based on our performance data, the SSB will be 95 per cent.

382. Western Power has updated the SSB for metering reference services in Section 4 of the AAC to reflect the above position. This will apply to the metering reference services in the AA5 period (services D1, D6, D8, D9, D11, D12 and D13).