Australian Energy Market Operator in-period funding submission for implementation of the Distributed Energy Resources Roadmap actions – Determination report

17 December 2020

Economic Regulation Authority
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Executive summary

In June 2020, the Minister for Energy placed new obligations on the Australian Energy Market Operator to implement part of the State Government's Distributed Energy Resources Roadmap. The roadmap contains a series of actions to integrate electricity generated from rooftop solar systems into the Wholesale Electricity Market and ensure the ongoing stability of the electricity network.

On 25 September 2020, the Australian Energy Market Operator (AEMO) submitted its proposal to the Economic Regulation Authority for additional forecast capital expenditure of $18.9 million to cover Distributed Energy Resources (DER) roadmap activities. In November 2020, AEMO revised its forecast DER costs to $17.9 million.[1]

AEMO's original submission represents a substantial increase in funding on that previously approved for the period 1 July 2019 to 30 June 2022: a 29 per cent increase on AEMO's approved capital expenditure and a 39 per cent increase above approved capital expenditure for Wholesale Electricity Market (WEM) reform. The proposed DER funding would add a further 5.4 percentage points on to the 13.8 per cent increase in average WEM market fees over the three years from 1 July 2022 to 30 June 2025.[2]

The funding request is similar to AEMO's budget of $20 million for DER implementation in the National Electricity Market (NEM) in 2020/21.[3]

Transitional market rules enable AEMO to recover the cost of its obligation to support WEM reform activities. The same transitional rules require the ERA to review the efficiency of AEMO's proposed WEM reform costs, but not whether a project proposed by AEMO is a prudent means to deliver WEM reform.[4] The State Government's DER roadmap is part of the current suite of reforms, and so the transitional funding approval arrangements extend to AEMO's proposed DER projects. Commenting on the content of AEMO's DER projects is out of scope for the ERA's determination.

Further changes to the transitional market rules made in June 2020 limit the ERA's determination process. The ERA can make two requests for additional information from AEMO during the process and must make its determination within 45 business days of receiving AEMO's proposal. Part of the ERA's revised funding approval obligations is that it must not take into account any funding already approved for the current period (known as the fifth allowable revenue period or AR5) when making its determination on DER funding.

The ERA's approach to assessing AEMO's funding proposal has been to determine whether the proposal is a reasonable forecast of incremental costs that AEMO will incur in the WEM by fulfilling its new DER obligations. Incremental costs are the additional costs that AEMO will incur from undertaking DER actions, over and above costs that AEMO will already incur in the absence of the new DER obligations.[5]

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1 In the intervening period AEMO was able to clarify the Information Technology requirements for aspects of the DER orchestration pilot, which reduced forecast labour costs by $584,000. New financing arrangements were also introduced, which reduced financing costs by $199,000. These two changes reduced the project contingency forecast by $147,000.

2 ERA, 2019, *Australian Energy Market Operator Allowable Revenue and Forecast Expenditure 2019/20 to 2021/2022*, p.47 (online)

3 AEMO, 2020, *2020-21 Final Budget and Fees*, pp. 24-25 (online)

4 Wholesale Electricity Market Rules (WA), 7 August 2020, Rule 1.20 (online)

5 For the avoidance of doubt, incremental cost does not include redistribution of costs that are already recovered through market fees.

Under the Market Rules, and before approving funding, the ERA must consider whether AEMO's proposed costs are consistent with costs proposed by a prudent provider of the services, acting efficiently and "seeking to achieve the lowest practicably sustainable cost of delivering the services."[6] Once approved, AEMO can recover these costs from market participants through market fees. These costs are ultimately passed through to consumers.

Although AEMO provided the ERA with supplementary information during the review process, AEMO did not provide evidence to support parts of its funding proposal. This is explained further under the project contingency and labour cost sections below.

AEMO provided information on its internal governance process and how the DER funding application had been challenged through that process before being submitted to the ERA. There are several governance steps in AEMO's processes and AEMO indicated, in additional information provided to the ERA, the types of matters discussed. The ERA asked AEMO to provide notes from the committee meetings to understand what the committees discussed, the robustness of the top-down challenge process, or how long the committees spend discussing the proposal. AEMO did not provide this information.

The ERA accepts that AEMO's DER forecast costs were assessed through AEMO's internal governance process but, without the requested information, cannot ascertain how effectively that process constrained AEMO's DER capital expenditure forecast.

The primary focus on AEMO's incremental costs from undertaking its DER activities, the limited evidence in support of parts of AEMO's proposal and the ERA's concerns with AEMO's internal governance process have informed the ERA's determination on AEMO's in-period funding submission.

The ERA approves $14.6 million of forecast capital expenditure to be added to AEMO's approved capital budget for the period to 30 June 2022. The ERA has agreed with AEMO that the additional approved forecast capital expenditure will be divided equally between the System Management and Market Operation capital budgets. The approved forecast capital expenditure represents a reduction in cost to the market of $3.3 million from AEMO's revised DER forecast. The approved funding is anticipated to increase market fees by around four per cent above the projected fees for the AR6 period.

The ERA reviewed all aspects of AEMO's proposal to make its final determination and reduced the costs in two main categories: project contingency and labour. The ERA's decision for these two areas is summarised below.

Project contingency

AEMO identified project contingency costs of $2.3 million in its revised DER forecast, equivalent to 12.6 per cent of total DER forecast costs. The ERA has raised concerns in the past about AEMO being overly conservative when proposing funding for project contingency. AEMO's submission and additional information provided have not addressed these concerns.

In this funding proposal, AEMO provided insufficient evidence to support its claim for contingency and the ERA is concerned that AEMO's internal governance process, as noted earlier, may not have provided sufficient challenge to the funding proposal.

In this instance, the ERA has not approved any general project contingency. Over three-quarters of AEMO's funding is for labour and over half of the internal personnel identified to work on DER projects are existing AEMO staff. AEMO has included contingency on the

[6] Ibid, Rule 2.22A.11(b)

grounds that these staff may not be available when required. This is unlikely as AEMO has control over how and when it allocates staff to projects. Further, a prudent provider of services would ensure it has risk mitigation strategies in place should critical staff leave the organisation. Losing critical staff is a corporate risk, rather than a project-specific risk. The remainder of staff required to work on DER projects are either new hires or consultants. AEMO's submission states that it is confident these personnel are available and can be recruited from the market.

AEMO has included contingency of 22 per cent for the DER register project and claimed this is largely driven by a risk of project delay or extension. However, the project is currently running to time and AEMO is able to redeploy the project team should a delay occur.

The ERA acknowledges that AEMO may have some residual project risk, for example an unexpected change in the scope or complexity of a project, such that different IT platform requirements are needed. This risk can be accommodated in the 10 per cent overspend above approved DER forecast capital expenditure already allowed under the market rules.

Labour costs

AEMO's revised labour cost estimate to deliver the DER roadmap actions was $13.7 million, or 77 per cent of the total funding estimate. Of this, AEMO proposed $8.9 million to cover internal labour identified to work on DER projects. This is a combination of 33 existing AEMO staff, 24 from the National Electricity Market and nine from the WEM, and 22 new contract hires in the WEM. AEMO proposed a further $4.9 million for 23 external staff such as consultants and technical specialists.

AEMO provided evidence to support its forecast costs for the 23 external positions in the form of actual invoices for external contractors currently engaged on DER projects and benchmark day rates from five separate vendors. The ERA has approved AEMO's forecast capital expenditure costs for external staff.

AEMO's funding submission included the costs of existing staff transferred to work on DER projects, on the presumption that the substantive positions of these staff will be backfilled by additional recruitment.

The ERA has considered the number of days that AEMO expects existing staff to work on DER projects. Some staff will be fully deployed to work on DER projects. It is reasonable to expect AEMO to backfill these positions and this would represent an incremental cost to AEMO. However, some other staff are only expected to contribute a day a week or less to DER projects. It is unlikely that these staff will be backfilled for such a limited time. If the positions are not backfilled, then AEMO will not incur an incremental cost for these staff.

Where any of the nine existing WEM staff identified to work on DER projects have a substantive commitment of one day a week or more, then the ERA has included these staff costs in its determination. It is reasonable to assume that these positions will be backfilled and AEMO will incur an additional cost.

Where existing WEM staff have only a limited commitment to DER activities, less than one day a week on average, then the ERA considers these positions are unlikely to be backfilled. The ERA has not considered the costs of these staff as incremental DER costs in its determination.

Although NEM staff transferred to work on DER project are already fully funded through AEMO's NEM budget, this is an incremental cost to the WEM. AEMO will internally cost these staff to its WEM operations for the duration of their involvement in the DER projects.

The ERA has also reviewed how AEMO forecast the cost of internal labour in its submission.

AEMO forecast all internal staff costs, for new and existing staff, using one of five unit labour rates. AEMO stated that it calculated the five unit rates based on the total remuneration of its 1,100 existing staff.

The ERA compared AEMO's forecast cost of existing staff, using the five tier rates, with the actual costs of the existing staff identified to work on DER projects. AEMO's forecast cost was higher. The ERA does not support the use of five calculated tier rates to forecast the costs of existing staff when total remuneration cost for the 33 staff is already known. The future costs of these staff can be forecast using the annual uplift requirements in AEMO's Enterprise Agreement or in the terms and conditions of individual employment contracts.

The ERA also considered if the five tier approach was a reasonable approach to use to estimate the cost of new hires. The ERA compared the costs of existing staff against the salary ranges AEMO used to calculate the five tier labour rates. There was a significant degree of overlap in the salary ranges between bands that suggests the tiers do not represent a clustering of competencies, responsibilities and remuneration. This undermines the use of the five tier rates as a robust means to forecast the costs of new contract hires. AEMO's submissions and additional information provided to the ERA did not contain any evidence to support its claim that it needed to hire new staff on rates comparable to existing staff to attract personnel with the right capability. However, the ERA accepts that shorter-term contracts incur a premium to compensate for the lack of security and other employment benefits. Given the weakness of AEMO's proposed five tier unit rate approach, the ERA has based approved funding on AEMO's new contract hires costed at average market rates plus a 25 per cent premium consistent with standard loading for contract staff.

For the reasons outlined above, the ERA approves forecast capital expenditure of $12.7 million to cover AEMO's incremental labour costs to deliver its new DER obligations.

1. Introduction

The ERA is responsible for determining the allowable revenue and forecast capital expenditure AEMO can recover through fees charged to market participants.[7]

AEMO estimates its funding requirements every three years. In May 2019, the ERA approved AEMO's funding for the fifth allowable revenue period from 1 July 2019 to 30 June 2022 (AR5).[8] For AEMO's activities in the WEM, the ERA approved:

- $99.8 million allowable revenue
- $65.8 million forecast capital expenditure.[9]

On 4 April 2020, the Minister for Energy released the DER roadmap that identifies 32 actions needed to integrate DER into the South West Interconnected System (SWIS).[10] The roadmap gives AEMO responsibility for delivering some of these actions within AR5.

On 1 July 2020, the Minister for Energy amended market rule 1.20 to recognise the additional obligations that the roadmap conferred on AEMO. These obligations were not anticipated early in 2019 when AEMO proposed, and the ERA determined, AEMO's funding for AR5.

The amendments to market rule 1.20 enable AEMO to make an in-period funding submission to the ERA for additional funding to cover the new DER roadmap obligations.[11] The amendments to market rule 1.20 also impose conditions on the ERA's approval of AEMO's proposed DER funding.[12] These conditions are outlined in section 3.

In May 2020, AEMO's initial estimate of its DER implementation costs was $13.1 million in total, 37 per cent of which was identified as forecast operating expenditure and 63 per cent as forecast capital expenditure. This estimate was provided as part of Energy Policy WA's (EPWA) consultation on the DER roadmap implementation rule change.[13]

On 25 September 2020, the ERA received a submission from AEMO seeking approval for $18.9 million additional forecast capital expenditure in AR5 for its DER roadmap functions. On 29 September 2020, the ERA published AEMO's submission and a notice explaining the process the ERA would take to review the proposal.

On 9 November, the ERA published a draft findings report. The report outlined the ERA's initial findings on AEMO's proposal and provided an indicative level of approved funding for AEMO's DER activities if the ERA applied its initial findings in the funding determination. The ERA received six submissions in response to the draft findings report and has taken this feedback into account in the final determination.

The ERA's timeline for reviewing and determining AEMO's funding was fixed at 45 business days as shown in Table 1:.

7 Wholesale Electricity Market Rules (WA), 7 August 2020, Rule 2.22A.11

8 ERA, 2019, *Australian Energy Market Operator Allowable Revenue and Forecast Capital Expenditure 2019/20 to 2021/22 – Final determination,* (online)

9 Ibid, p. v.

10 Energy Policy WA, 2020, Government publications – DER Roadmap (online)

11 Wholesale Electricity Market Rules (WA), 7 August 2020, Rule 1.20A

12 Ibid, Rule 1.20A

13 Energy Transformation Taskforce, 2020, *DER Roadmap Implementation Rule Change – Industry Consultation Paper (4 May 2020)*, pp. 9 and 13 (online)

Table 1: ERA review timeline

Date	Action	Timeline count
25 September	AEMO submitted its DER funding proposal	-
29 September	The ERA published the proposal with a notice	Day 1 – clock started and ran to Day 7
8 October	The ERA sent its first set of questions to AEMO	Clock stopped
15 October	AEMO provided its response to the questions	-
16 October	The ERA's review continues	Day 8 – clock started again and ran to Day 17
29 October	The ERA sent its second set of questions to AEMO	Clock stopped
9 November	AEMO provided its response to the questions	-
	The ERA published its draft findings report	
10 November	The ERA's review continued	Day 18 – clock started again
20 November	Consultation closed	Day 26
17 December	Deadline for the ERA to publish its funding determination	Day 45

2. AEMO's DER funding submission

AEMO's DER funding submission requested $18.9 million to cover its new obligations to implement parts of the DER roadmap in AR5. AEMO advised that the DER activities included some additional allowable revenue expenditure. However, AEMO indicated that it could accommodate this within the allowable revenue already approved for AR5.

AEMO's submission in response to the ERA's draft findings report, received in November, identified savings of $1 million and reduced the overall proposed cost to $17.9 million. The savings were a combination of reduced labour costs for the DER orchestration project, reduced financing costs following the introduction of new financing arrangements and subsequent adjustments to the forecast contingency costs.[14]

2.1 Expenditure by workstream

The additional forecast capital expenditure is allocated across four workstreams, all supported by shared program support resources. AEMO has applied an allowance for project contingency to each of the four workstreams and the program support expenditure. The allocation by workstream over each year of AR5 is shown in Table 2. This includes both AEMO's initial and revised cost forecasts.

Table 2: AEMO's estimated forecast capital expenditure costs by workstream ($ million)

Workstream	2019/20	2020/21	2021/22	Contingency	AR5 total	Revised AR5 total	%
DER register	0.1	0.9	-	0.2	**1.3**	1.3	7.1
DER participation	-	0.7	1.3	0.2	**2.2**	2.2	12.2
Technology integration	-	1.1	1.9	0.3	**3.3**	3.2	18.1
DER orchestration	-	5.8	2.1	1.6	**9.5**	8.6	48.3
Program support	0.3	1.2	1.1	0.1	**2.6**	2.6	13.8
Total	**0.4**	**9.7**	**6.4**	**2.4**	**18.9**	**17.9**	**100**

Note: ERA analysis of AEMO data

A short description of each of the four workstreams and project support is provided below.

2.1.1 DER register

In its proposal, AEMO stated that to be able to "effectively manage the power system as DER penetration levels increase, a reliable database of installed DER equipment must be established for the SWIS."[15] AEMO has already begun project planning to establish and deliver the register in January 2021. AEMO has an operational DER register in the NEM and "will

[14] AEMO, 2020, *ERA Draft Findings Report AEMO submission*, p. 5. (online)

[15] AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 29. (online)

draw heavily on the experience and technology applied in the NEM DER register" to extend the register for use in the WEM.[16]

2.1.2 DER participation

AEMO stated that its "effort in this workstream is to design market arrangements and support the establishment of rules and regulatory arrangements to enable DER aggregators to participate in the WEM."[17] AEMO has separately costed its involvement in six DER roadmap actions that are collated, along with separate DER implementation planning costs, into the total costs for this workstream. The DER implementation planning costs of $0.9 million will be informed by the DER orchestration pilot. The DER implementation planning workstream includes just under $0.5 million in staff costs that are allocated to:

- Providing expert advice on EPWA's proposed initial and detailed legislative and regulatory arrangements for DER Orchestration.
- Engaging with EPWA consultation processes on detailed legislative and regulatory requirements, including with written and direct consultation with EPWA.
- Supporting the implementation of EPWA's legislative and regulatory arrangements as required by EPWA.[18]

2.1.3 Technology integration

AEMO described the technology integration workstream as covering "the critical actions required to ensure system security as more and more DER connects to the grid."[19] Over half of the $3.3 million forecast capital cost for this workstream is focussed on DER inverters, which convert direct current generated by solar rooftop panels into alternating current for use by the household and export to the network. This includes establishing equipment to collect data to understand how DER inverters perform in practice and develop communications to allow the remote control of inverters in the SWIS.

AEMO described the remaining costs in this workstream as having an operational focus. This included assessing how DER can reduce the load on the system and whether there are any implications for under frequency load shedding scheme settings. This is the emergency mechanism that disconnects sections of the network when the frequency of supply drops below a given level.

When the electricity system has had a major fault, it may need to be re-energised; this is known as a black start condition. AEMO is concerned that when black start is needed, the variation in demand from the network caused by fluctuations in output from rooftop solar may disrupt efforts to restart the system.

AEMO also plans to use DER and load models originally developed in the NEM to inform the creation of similar models in the WEM. AEMO will use these to model the effect of DER systems on demand, particularly when the security of the electricity system is at risk.[20]

16 Ibid, p. 30.
17 Ibid, p. 39.
18 Ibid, p. 40.
19 Ibid, p. 25.
20 Ibid, p. 29.

2.1.4 DER orchestration

AEMO described this workstream as "a 'virtual power plant' pilot project to demonstrate technical capability of DER and the aggregation of DER to participate in the market, alongside the provision of network support services (or 'alternative options services') to Western Power."[21] The pilot program involves recruiting customers with rooftop solar to participate in the pilot, determining how to aggregate and control these DER resources, and identifying what services the aggregated DER can provide and how performance in delivering services will be measured. Also included in the project is the design of the IT platforms to integrate aggregated DER into existing market operation and settlement systems. The pilot project will run from January 2021 to December 2022.

DER orchestration funding makes up half of AEMO's total in-period funding request. In its original submission, AEMO stated that the DER orchestration workstream was linked to the DER participation workstream and it was "therefore crucial both workstreams are appropriately resourced, coordinated and delivered within the strict timeframes prescribed by the WA State Government."[22]

In its submission to the ERA's draft findings report, AEMO confirmed that:

> Recent discussions and workshops on technology solutions and integration requirements between the Project Symphony partners has refined AEMO's understanding of the IT requirements. This has allowed AEMO to adjust its forecasts for some of its forecast internal technology resources (e.g. architects, designers, developers, etc.) and contractor expectations. Revisions of the forecast resource profile have identified a $584,000 reduction in these labour costs.[23]

From this adjustment, the forecast labour costs for the DER orchestration pilot have reduced from $6.6 million to $6.0 million. When combined with the additional changes to the forecast financing and contingency for the project, total forecast project costs reduce from $9.5 million to $8.6 million.

2.1.5 Program support

AEMO included $2.6 million in its submission to cover the staffing costs of providing support to the for DER workstreams. This includes "planning and oversight, legal support, communications and stakeholder management and project support services."[24]

2.2 Expenditure by cost category

AEMO presented the categorisation of costs in its funding submission using the same breakdown as in AR5. Costs have been grouped by cost category in Table 3 consistent with AEMO's initial submission and its revised forecast.

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21 Ibid, p. 31.

22 Ibid, p. 25.

23 AEMO, 2020, *ERA Draft Findings Report AEMO submission*, p. 14. (online)

24 AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 25. (online)

Table 3: Estimated forecast capital expenditure by cost category ($ million)

Cost category	2019/20	2020/21	2021/22	AR5 total	Revised AR5 total	%
Internal labour	0.1	4.1	4.7	9.0	8.9	49.7
External labour	0.2	4.5	0.7	5.4	4.9	26.8
Hardware	-	0.2	-	0.2	0.2	1.1
Software	-	0.5	0.4	0.9	0.9	5.0
Travel	-	-	0.1	0.1	0.1	0.6
Property costs	-	0.2	0.2	0.4	0.4	2.2
Financing costs	-	0.1	0.4	0.5	0.3	1.7
Contingency	0.1	1.6	0.7	2.4	2.3	12.8
Total	**0.4**	**11.3**	**7.1**	**18.9**	**17.9**	**100**

Note: Totals may not add due to rounding

Overall, 76 per cent of the revised total forecast capital expenditure, $13.7 million, is on staffing:

- 65 per cent, or $8.9 million, is on internal staff, including existing WEM staff, existing NEM staff, and new contract positions in the WEM.
- 35 per cent, or $4.8 million, is on external contractors and consultants.

2.2.1 AEMO's approach to estimating costs

AEMO stated that it started by identifying the personnel requirement for each workstream and then, for each role, estimated the number of days required. AEMO then costed existing staff and internal contract personnel using a five-tier unit rate system. The five unit rates were derived from the labour costs of 1,100 existing AEMO roles.

AEMO has identified 23 external contractor positions to work on DER roadmap actions. AEMO stated that it approached five separate vendors to request estimated rates for given roles and then used this information as one of the factors upon which it based estimated costs for external contractors.

A further 55 positions are a combination of:

- 22 new internal staff that will be employed on contract in the WEM.
- Nine existing WEM staff that will be seconded onto DER activities and their positions backfilled.
- 24 existing NEM employees who will work on DER activities, recording their time and allocating those costs, again based on the five-tier system, to the WEM.

For each action included in the workstreams, AEMO undertook a risk assessment and from this calculated a project contingency. The higher the anticipated risk, the higher the contingency for the action. Contingencies ranged from 5 per cent to 22 per cent for individual actions. The overall contingency amount included for the funding proposal is 15 per cent.

AEMO has applied a fixed charge to each full time equivalent (FTE) hour to cover occupancy costs:

> Occupancy costs include rental, floor space, utilities and consumables, all of which are subject to incremental increase or decrease as the number of AEMO employees using AEMO resources varies. It is likely that additional floor space will be required to accommodate the new WEM resources necessary to deliver the DER Roadmap. This cost would be absorbed within the occupancy charge.[25]

AEMO proposed financing its forecast capital expenditure using an existing debt facility. This approach to project financing is consistent with its approach in AR5, which the ERA supported.[26] AEMO uses an in-house consolidated borrowing facility to finance projects.

AEMO provided the ERA with commercial-in-confidence information to illustrate where it had sought to benchmark forecast capital expenditure against similar projects undertaken elsewhere.

AEMO noted that it:

> Has sought to achieve the lowest practicably sustainable cost of delivering the work, and that the capex forecast reflects this. Cost estimates are based on market-tested rates and historical costs of a similar nature. Detailed bottom up build and top down challenge has been applied, with scrutiny from the Investment Committee, AEMO's Executive and Board in particular.[27]

2.3 Effect on market fees

In the ERA's final determination for AR5, market fees were estimated to increase by an average of 4.2 per cent year on year compared to AR4.[28]

In its original submission, AEMO calculated that, assuming its in-period proposal was fully funded, the effect of the additional capital expenditure in AR5 would be a further increase of 0.2 per cent in 2020/21 and 0.5 per cent in 2021/22.

AEMO's AR5 funding submission stated that "most of the capex incurred during the AR5 period will not commence depreciation and amortisation until the AR6 period."[29] As part of its AR5 submission AEMO undertook some high-level modelling of AR6 fees. This modelling indicated that average market fees in AR6 would increase by 13.8 per cent over the AR6 period.[30]

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[25] AEMO, 2020, *Adjustment to 2019-2022 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 22 (online).

[26] ERA, 2019, *Australian Energy Market Operator Allowable Revenue and Forecast Capital Expenditure 2019/20 to 2021/2022 - Final Determination*, p. 28. (online)

[27] AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 10. (online)

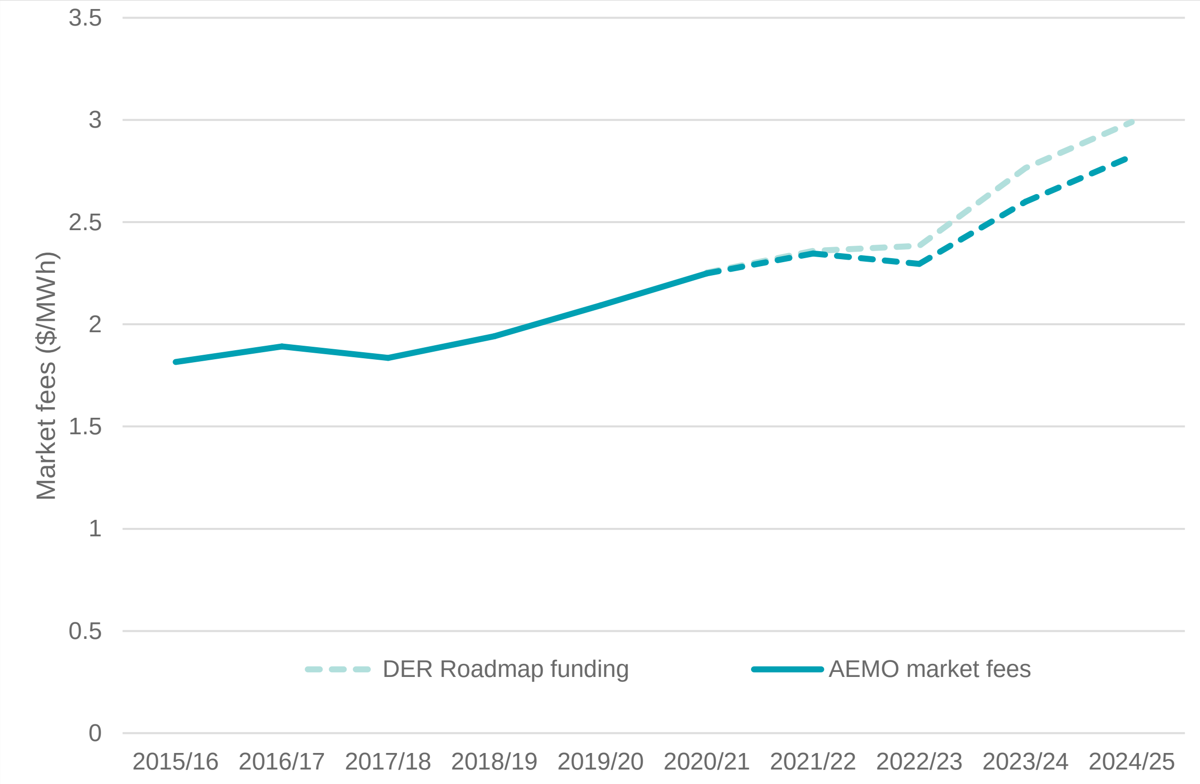
[28] ERA, 2020, *Australian Energy Market Operator Allowable Revenue and Forecast Capital Expenditure 2019/20 to 2021/2022 - Final Determination*, p. 45. (online)

[29] AEMO, 2019, 2*019-22 allowable revenue and forecast capital expenditure submission to the Economic Regulation Authority*, p. 44. (online) AR6 is the next allowable revenue funding period and runs from 1 July 2022 to 30 June 2025.

[30] Ibid.

AEMO's current funding submission identifies that the additional capital expenditure for DER roadmap activities, if funded in full, would increase market fees in AR6 on average by a further 5.4 per cent. Combined with the existing reform program, this increase over the AR6 period is 19.2 per cent higher than average fees during the AR5 period.[31]

Figure 1: WEM market fees with DER roadmap funding



Source: ERA analysis

Several stakeholders commented on AEMO's forecast cost to implement its DER actions and the effect of these costs on market fees.

The Australian Energy Council commented:

> It is critical for all stakeholders that market fees, which are already substantial and increasing, are managed and excess costs eliminated.[32]

Summit Southern Cross Power stated:

> SSCPH again reiterates its position that such costs have grown excessive relative to the benefit they provide a small and uncomplicated market such as the WEM.[33]

The ERA has considered these comments when making its determination by focussing on the incremental cost AEMO is likely to incur in implementing its DER actions. This will limit the

[31] AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 47. (online)

[32] Australian Energy Council, 2020, *Australian Energy Market Operator in-period funding for Distributed Energy Resources Roadmap activities*, p. 2 (online)

[33] Summit Southern Cross Power, 2020, *AEMO AR5 in-period funding request for DER implementation*, p. 1 (online)

increase in market fees to include only the additional costs to AEMO from its new DER obligations.

3. The ERA's obligations under the market rules

The WEM rules identify the ERA's obligations when approving funding to cover AEMO's obligations in the WEM. On 29 June 2018, the ERA's funding approval obligations and discretion changed with amendments to transitional market rules regarding the approval of funding for AEMO's new market reform obligations. Two years later, on 30 June 2020, the ERA's obligations changed again when the transitional market rules were further amended to set the process for approving funding for AEMO's new DER Roadmap obligations.

Following the changes made to the market rules in June 2018, the ERA reviewed its obligations on approving funding for WEM reform activities prior to its final determination of AEMO's allowable revenue and forecast capital expenditure funding for AR5. The ERA confirmed that it:

- Had no discretion to determine whether a proposed WEM reform project or activity is prudent.[34]
- Could not approve only part of AEMO's proposed WEM funding request.[35]

As AEMO's functions to implement the DER roadmap are an extension of its WEM reform activities, the points above also apply. When approving AEMO's proposed DER funding submission, the ERA has no scope to determine whether proposed DER workstreams or projects are a prudent means of delivering the DER roadmap. Also, the ERA must approve funding for the remainder, not part, of the AR5 period.

In its submission in response to the ERA's draft findings report, Summit Southern Cross commented on the ERA's role in approving AEMO's DER funding:

> SSCPH believes it is unfortunate that recent changes to the Market Rules, passed without consultation with those participants that fund the WEM, serve to constrain the Authority's ability to properly regulate the WEM.
>
> While the Authority can only determine whether AEMO's cost for implementing the DER roadmap are prudent, there is no ability to review the prudency of the proposal in the first place.[36]

Energy Networks Australia's submission made two comments on the scope of the DER funding submission:

> ENA's finding from the Open Energy Networks project (OpEN project) is that pursuing a centralised market approach to DER orchestration is a high cost approach that bears significant risk of stranded assets, while a scalable and proportionate approach would deliver optionality value and minimise the risk to consumers of investing heavily under uncertain future DER uptake scenarios.

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34 Under usual funding approval obligations, market rule 2.22A.11, the ERA can determine if a proposed project is a prudent means for AEMO to deliver its business as usual market operation and system management services in the WEM. This is out of scope under transitional market rule 1.20.

35 The ERA's AR5 draft determination suggested delaying approving funding for IT WEM reform projects until more robust costings for these large-scale market IT systems had been developed. The ERA reviewed its obligations under transitional rule 1.20 and determined that this was not an option for the AR5 final determination.

36 Summit Southern Cross Power, 2020, *AEMO AR5 funding request for DER implementation*, p. 1 (online)

> Some areas of the Technology Integration workstream appropriately fall in the roles and responsibilities of the electricity distribution network provider, and roles for which they are already funded to perform.[37]

The ERA acknowledges the comments from Summit Southern Cross Power and Energy Networks Australia. However, commenting on the projects AEMO has identified as necessary to deliver its DER roadmap actions is out of scope for the ERA's funding determination.

Implementing DER roadmap actions is a new obligation for AEMO. When making its determination, the ERA is primarily concerned with identifying the incremental or additional costs AEMO incurs in executing its new DER obligation, over and above the costs AEMO will incur in the absence of these new obligations.

When approving AEMO's funding, the ERA has to ensure that it is consistent with the funding approval requirements in the market rules. Once approved, AEMO can then recover its incremental DER costs from market participants through market fees. When approving allowable revenue and forecast capital expenditure, the ERA must take the following into account:

2.22A.11 (a) The allowable revenue must be sufficient to cover the forward looking costs of providing the services described in clause 2.22A.1 and performing AEMO's functions and obligations under these Market Rules in accordance with the following principles-

(i) Recurring expenditure requirements and payments are recovered in the year of expenditure

(ii) Capital expenditure is to be recovered through the depreciation and amortisation of the assets acquired by the capital expenditures in a manner that is consistent with generally accepted accounting principles; and

(iii) Notwithstanding clauses 2.22A.11(a)(i) and 2.22A.11(a)(ii), expenditure incurred, and amortisation charged, in relation to any Declared Market Project are to be recovered over the period determined for the Declared Market Project.

(b) The Allowable Revenue and Forecast Capital Expenditure must include only costs which would be incurred by a prudent provider of the services described in clause 2.22A.1, acting efficiently, seeking to achieve the lowest practicably sustainable cost of delivering the services described in clause 2.22A.1 in accordance with these Market Rules, while effectively promoting the Wholesale Market Objectives.

(c) Where possible the Economic Regulation Authority should benchmark the Allowable Revenue and Forecast Capital Expenditure against the costs of providing similar services in other jurisdictions; and

(d) Where costs incurred by AEMO relate to both the performance of functions in connection with the Market Rules, and the performance of AEMO's other functions, the costs must be allocated on a fair and reasonable basis between-

(i) Costs recoverable as part of AEMO's Allowable Revenue and Forecast Capital Expenditure; and

(ii) Other costs not to be recovered under the Market Rules.[38]

The changes made to the market rules in June 2020 further prescribe the decision-making process of the ERA when approving funding to cover AEMO's DER activities.

The ERA could make two requests to AEMO for additional information the ERA required to assess and make a determination on AEMO's submission. AEMO was obliged to comply with

37 Energy Networks Australia, 2020, *Australian Energy Market Operator in-period funding application*, p. 3 (online)

38 Wholesale Electricity Market Rules (WA), 7 August 2020, Rule 2.22A.11 (online)

these requests. These requirements are described in market rules 1.20A.2 to market rule 1.20A.4 as follows:

> 1.20A.2 Within 15 Business Days of the day on which an application under clause 1.20A.1 is received, the Economic Regulation Authority may give notice to AEMO requesting any additional information the Economic Regulation Authority reasonably requires to assess and determine AEMO's application.[39]
>
> 1.20A.3 The Economic Regulation Authority may, within 10 Business days of the day it receives AEMO's response to a notice issues under clause 1.20A.2, give notice to AEMO requesting any further additional information the Economic Regulation Authority reasonably requires to assess and determine AEMO's application.[40]
>
> 1.20A.4 AEMO must comply with any request made by the Economic Regulation Authority under clauses 1.20A.2 and 1.20A.3.[41]

The ERA's review of AEMO's submission must be completed within 45 business days, extended by the number of business days AEMO took to return information requested by the ERA. This is explained in market rules 1.20A.5 and 1.20A.6:

> 1.20A.5 Subject to clause 1.20A.6, the Economic Regulation Authority must assess an application made under this section 1.20A and determine any adjustment to AEMO's Allowable Revenue and Forecast Capital Expenditure within 24 Business Days of the date AEMO's application is received.[42]
>
> 1.20A.6 The 45 Business Day period referred to in clause 1.20A.5 is to be extended by the following additional Business Days-
>
> (a) The day on which any request for additional information is made by the Economic Regulation Authority under clauses 1.20A.3 and 1.20A.3;
>
> (b) The period of time subsequently taken by AEMO to respond to such a request; and
>
> (c) The day on which the Economic Regulation Authority receives AEMO's response.[43]

The ERA could not consider funding already approved for AR5. This is a departure from the usual review and determination process undertaken when AEMO makes a request for additional funding within a funding period.[44] In such determinations, the ERA has discretion to review AEMO's expenditure against budget and reallocate unused but approved funding to other activities. This discretion was removed when approving funding to cover DER implementation costs as described in market rule 1.20A.7 (d) below:

> 1.20A.7 When determining and approving an adjustment to AEMO's Allowable Revenue and Forecast Capital Expenditure under this section 1.20A, the Economic Regulation Authority-
>
> (a) Must take into account the matters in clauses 2.22A.11(a) to 2.22A.11(d);
>
> (b) Must have regard to information provided by AEMO in its application and to any information provided in accordance with clauses 1.20A.2 and 1.20A.4;
>
> (c) May have regard to such other information as the Economic Regulation Authority reasonably considers necessary or desirable to inform the Economic Regulation Authority's assessment of AEMO's application;

[39] Ibid, Rule 1.20A.2

[40] Ibid, Rule 1.20A.3

[41] Ibid, Rule 1.20A.4

[42] Ibid, Rule 1.20A.5

[43] Ibid, Rule 1.20A.6

[44] Ibid, Rule 2.22A.8 and 2.22A.9

(d) Must not have regard to or take into account the Allowable Revenue and Forecast Capital Expenditure already approved by the Economic Regulation Authority for the Review Period 1 July 2019 to 1 July 2022; and

(e) Must determine and approve an adjustment on the basis that-

(i) Any Wholesale Electricity Market Reform and Constrained Network Access Reform relating to the introduction of a distribution system operator or distribution market operator will not be completed before 1 July 2022 but will require a substantial commitment of resources by AEMO during the Review Period ending on that date; and

(ii) All other Wholesale Electricity Market Reform and Constrained Network Access Reform will be implemented before 1 October 2022.[45]

Clause (c) above enabled the ERA to have regard to other information when assessing AEMO's application. The ERA has used this clause to:

- Publish the draft findings report to gather stakeholder feedback on:
  - AEMO's proposal
  - the ERA's initial findings from reviewing AEMO's proposal.

The ERA has considered stakeholder feedback received in response to the draft findings report and additional information obtained from AEMO to make its final determination.

45 Ibid, Rule 1.20A.7

4. The ERA's determination

AEMO requested $18.9 million of forecast capital expenditure to cover the estimated costs of new DER implementation actions over the remaining 20 months of the AR5 period. In November 2020, as noted in section 2, AEMO subsequently reduced this figure to $17.9 million.

The $17.9 million is an increase of 26 per cent above the $68.5 million WEM forecast capital expenditure previously approved for AR5 and a 37 per cent increase on the $48.5 million forecast capital expenditure previously approved for WEM reform activities in AR5.[46]

Stakeholder submissions from AEMO's delivery partners for the DER roadmap, Western Power and Synergy, supported the approval of funding for AEMO to implement DER actions.

Western Power acknowledged that roadmap actions were "at differing levels of certainty in a regulatory sense" and because of this it was difficult to forecast the costs required with precision. Synergy supported AEMO's application for additional DER funding, providing that the costs met the funding approval requirements in the market rules.[47] Synergy noted that as it was "responsible for paying a large proportion of the WEM fees, Synergy supports the ERA conducting adequate due diligence before approving any additional Forecast Capital Expenditure and Allowable Revenue."[48]

The ERA has outlined its determination against each of the individual cost categories below. Stakeholder comments on the specific cost categories are included where appropriate.

4.1 Labour costs

Over three quarters of AEMO's revised forecast DER implementation costs are for labour. AEMO divided its labour costs as internal, $8.9 million, and external, $4.9 million. Internal staff comprised 33 existing personnel and 22 new contract positions in the WEM. AEMO identified 23 contractor positions and additional consultancy services as external labour. External contract positions will provide "mostly IT expertise such as architects, designers, software developers and testers".[49]

Internal labour

To forecast internal labour costs, AEMO identified the number and type of different personnel required, estimated the number of days required from each individual for each DER action and then applied a unit day rate, derived from its existing staff costs, to calculate the cost of each resource.

[46] ERA, 2019, *Australian Energy Market Operator Allowable Revenue and Forecast Capital Expenditure 2019/20 to 2021/2022 -Final Determination*, p. 39, (online)

[47] Synergy, 2020, *Submission to the Economic Regulation Authority's Draft Findings Report on the Australian Energy Market Operator's in-period funding submission for implementation of the Distributed Energy Resources Roadmap*, p. 3 (online)

[48] Ibid. p. 3

[49] AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 21 (online)

AEMO supported this approach in its submission in response to the ERA's draft findings report noted:

> The approach of using actual historical costs to inform future labour costs for similar roles is a reasonable and commonly accepted approach to developing expenditure forecasts.[50]

External labour

The information AEMO provided on its forecast external labour costs was compiled from two sources:

- External contractor type and estimated days required from each type were multiplied by anticipated contractor rates. These staff are hired on service contracts that are awarded through AEMO's procurement process.
- Consultants are generally identified to undertake defined tasks. AEMO has based these costs on observed rates for similar projects.

In its final determination, the ERA has considered whether AEMO's approach to forecasting labour costs meets the funding approval requirements in the market rules identified in section 3.

4.1.1 Observations

The ERA made the following observations when reviewing AEMO's forecast internal and external labour costs.

Internal labour

AEMO forecast internal labour cost using a five-tier system of unit rates. AEMO described this as:

> The unit rate applied for each role is drawn from AEMO's five-tier system of labour rates. The five-tier labour rates are calculated by allocating all existing AEMO roles (some 1,100 employees) to one of five tiers or pay grades, and then taking an average of the total remuneration for the positions in that tier. Essentially, the five-tier system is based on the actual remuneration being paid to AEMO employees. AEMO then uses these actual costs to forecast the likely remuneration costs it will incur for new hires in similar roles.[51]

The calculated rates in each tier are an average of the total remuneration for each position in that tier, including performance rewards, long service leave, and workers' compensation.[52] AEMO used these rates to forecast labour costs for both existing staff and anticipated new hires. AEMO stated that "the total remuneration of employees (including all leave and performance benefits) is also a reasonable benchmark for the higher rate typically paid to short-term hires."[53] However, AEMO did not provide any evidence on recent costs of short-term hires to support this.

The ERA asked AEMO to supply actual cost information for the 33 existing staff identified to work on DER projects. Of these, 24 are NEM positions and nine are WEM positions. With this

[50] AEMO. 2020, *ERA Draft Findings Report AEMO Submission*, p. 11 (online)

[51] Ibid. p. 11

[52] Ibid. p. 13

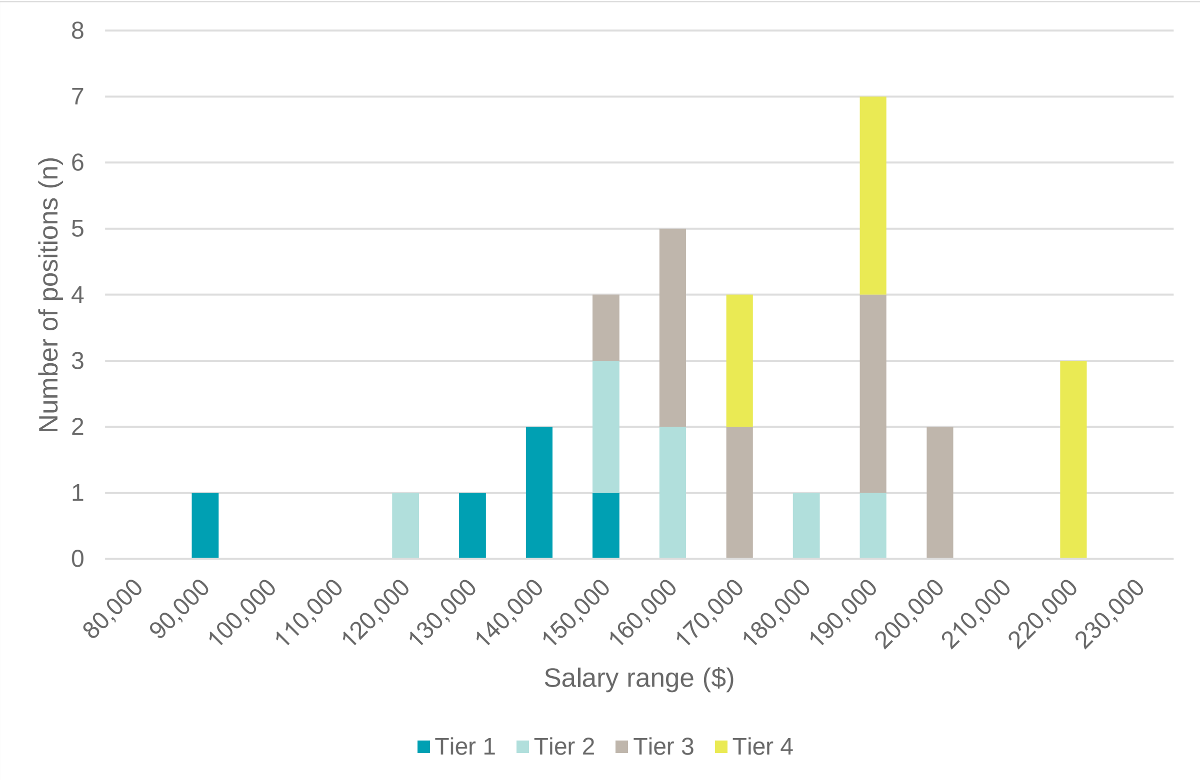
[53] Ibid. p. 13

information the ERA compared existing staff costs with the forecast cost of existing staff in AEMO's submission.

AEMO initially provided salary information without the position details. Given the range in salaries for the roles identified for the DER roadmap within each tier, this was insufficient for the ERA to evaluate the proposal. AEMO subsequently provided the salary information, as requested by the ERA. However, the daily rates linked with the salaries were higher than in the initial submission. The daily rates had been increased to account for annual leave and public holidays. The staff salaries already cover entitlements including annual leave and public holidays. Overall, AEMO's forecast costs for existing staff, using the five tier rate approach, was higher than the forecast cost of existing staff using their actual remuneration, adjusted by the annual uplifts consistent with the requirements of AEMO's Enterprise Agreement or individual contract terms and conditions.

The ERA examined the distribution of salaries of existing staff within each of the tiers. This involved plotting the salary ranges, maximum, minimum, average and median values of each of the tiers against each other. This analysis identified substantial overlap between the tiers and no clear clustering within the tiers. For example, as shown in Figure 2, of the salaries for the eight positions in tier 4, five would fit within the salary range of tier 2.

Figure 2 Observed overlap of salary ranges between tiers



Source: ERA analysis of AEMO submission

The overlap between tiers in the sample analysed by the ERA indicates the tiers do not clearly represent clusters of roles with similar competencies, responsibilities and pay rates.

The wide salary spread coupled with the diversity in activity meant that it was not possible to replicate and validate AEMO's labour costings using its tier rate approach. This undermined the usefulness of the approach as a means to forecast future labour costs, particularly for new hires.

Within each tier the labour forecasts show a substantial diversity in hours allocated to DER roadmap projects – some staff have a commitment equivalent to less than half a day per week in a month, whereas others over four days per week in a month. For example, considering the DER orchestration pilot, within tier two, the person with the lowest time commitment had hours less than 4 per cent of the time commitment from the person with the greatest time commitment. However, the remuneration within tier 2 for the highest paid position was nearly two thirds above the lowest paid position. As the cost is a function of both price and quantity, the wide ranges in both factors within each tier - commitment coupled with the wide salary range - creates substantial uncertainty about the merit of the aggregation used to forecast the project costs.

In addition, because the five tier rates are based on AEMO's existing costs, the forecast costs for new short-term contract hires are higher than market rates for similar positions because:

- AEMO's Enterprise Agreement contains rates that are calibrated at the 75th percentile of market rates for the industry.[54]
- They include an allowance for AEMO's performance bonus scheme and long service leave, which would not otherwise apply to new staff on short-term contracts.

AEMO stated that forecasting its labour costs above market rates was prudent because:

> The DER Roadmap activities are part of an industry-leading program of work and therefore have unique deliverables. The skills and competencies required to deliver the works are not readily comparable with roles apparently selected without a comparison of skills, competencies and experience.[55]

When the ERA compared AEMO's base salary rates to advertised market rates for similarly titled positions in the draft findings report, this did not include exactly matching required competencies and essential skill sets as the information was not available from AEMO at the time.

AEMO subsequently provided information on the expected competencies and specialist knowledge for its new hires. For some positions, such as Project Administrators, this included generic project management knowledge. Other positions required knowledge of the energy market. It is not unusual for employers to seek to recruit individuals with relevant industry knowledge. Other positions required knowledge of the IT applications AEMO uses. However, AEMO has not indicated if the IT systems it uses are commonplace or bespoke, nor indicated how easy it will be to recruit staff with the requisite skillset.

Although AEMO stated that its five-tier rate system was appropriate to forecast labour costs for new positions, AEMO did not provide any information in support of this. For example, AEMO could have demonstrated that it had tried to recruit at market rates but could not attract suitable candidates with the requisite specialist knowledge. The ERA would have expected that information on the cost of new staff recently hired to work on WEM reform projects would have been available but AEMO has not provided this information.

AEMO's initial submission identified how it determined which roles would be required to implement the DER actions:

> For each role AEMO has:
>
> - Estimated the number of days required to deliver each project.

[54] This means the rates are calibrated to pay more than 75 per cent of the industry participants in their field.

[55] AEMO, 2020, *ERA Draft Findings Report AEMO Submission*, p. 12, (online)

- Identified whether each resource is already funded in the AR5 revenue determination, or if it is a new role.
- Identified, for cost allocation purposes, to which AEMO entity the role is currently allocated (i.e. NEM or WEM).
- Used AEMO's five-tier resource cost allocation process to estimate the cost of using existing internal resources.
- Considered the training and 'up-to-speed' effort associated with tasks the role will fulfill.
- Determined whether the role should be permanent or temporary.
- Determined whether the role should be internal or external (contracted).
- Optimised resourcing so that individuals can support multiple workstreams, where practicable.[56]

In its second information request to AEMO, the ERA requested information to show how AEMO had identified the types of staff needed to work on DER projects and how it had estimated the number of days required of each position.[57]

AEMO provided, in confidence, a summary of the expected competencies and capabilities for staff on each of the DER projects. The identified competencies were consistent with the positions identified to work on each DER project. AEMO did not provide written evidence to show how it determined the number of days needed for each individual position when requested to do so by the ERA. Later, AEMO did confirm verbally that the number of days was initially based on estimates from internal subject matter experts.

AEMO maintained that its initial estimates of labour quantity and resultant labour costs were subject to challenge through its internal governance process. Although AEMO provided details of a lengthy governance process, the effectiveness of the process is difficult for the ERA to assess. This is discussed further in section 4.7.

The ERA is primarily concerned with approving funding to cover the incremental costs of implementing AEMO's new DER roadmap obligations. Incremental costs are those over and above costs AEMO will incur in the absence of its new DER obligations. Existing staff identified to work on DER projects are already fully funded, either through approved AR5 expenditure or through NEM funding arrangements.

The ERA understands why AEMO identified existing staff to work on DER projects, to utilise the experience of:

- NEM staff who have worked on similar DER projects on the east coast.
- WEM staff with subject matter expertise on integrating with AEMO's IT systems.

Where existing staff are taken away from their current duties to work on DER projects entirely or for long periods of time, then it is necessary and appropriate to backfill these individuals. The cost of these individuals is then an incremental cost to AEMO.

This is consistent with AEMO's submission that noted:

> If an existing AEMO employee's remuneration was included in approved opex in the AR5 determination, the portion of that employee's time spent on DER Roadmap Actions

[56] AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 56 (online)

[57] Wholesale Electricity Market Rules (WA), 7 August 2020, Rule 1.20A.3 (online)

> will be capitalised, and a credit issued against the AR5 opex amount, with the Market Fee adjusted downwards accordingly. The capitalised portion of the employee's remuneration will be recovered as per the depreciation schedule associated with the DER Roadmap projects.[58]

However, AEMO has identified several existing staff who will contribute a very small number of days a month to DER projects during AR5. The ERA examined the monthly projected time commitment for existing positions and divided this by the working hours per month after accounting for public holidays. This identified that while some positions are heavily committed, many of the existing positions appear to have relatively light time commitments.

Eight positions have a maximum full-time equivalent time commitment of less than one day per week and half of these have a maximum commitment of around half a day per week. It is unlikely that AEMO will backfill these positions, given the short timeframes they are expected to work on DER projects, their specialised skill set, or relative seniority in the organisation. It is more likely their workload would be distributed across other staff.

AEMO's response to the question of backfilling states that decisions on backfilling depend on circumstances at the point in time. Therefore, there does not appear to be any basis for a claim of incremental cost under all circumstances.

To make its determination, the ERA has considered the likely incremental costs AEMO will incur from undertaking DER projects.

Although NEM staff transferred to work on DER project are already fully funded through AEMO's NEM budget, this is an incremental cost to the WEM. AEMO will internally cost these staff to its WEM operations for the duration of their involvement in the DER projects.

Where any of the nine existing WEM staff identified to work on DER projects have a substantive commitment, more than one day a week for any period of time, then the ERA has included these staff costs in its determination. The positions are likely to be backfilled and AEMO will incur an additional cost.

Where existing WEM staff have only a limited commitment to DER activities, less than one day a week on average, then the ERA suggests these positions are unlikely to be backfilled. The ERA has not considered the costs of these staff as incremental DER costs in its determination.

External labour

AEMO provided evidence to support its estimate of external labour costs. AEMO has already incurred external labour costs where DER implementation work is under way. Invoices for this work were provided to the ERA to compare against the forecast rates for the work. The costs incurred exhibit day rates consistent with AEMO's external contractor cost forecasts. AEMO also provided samples of day rates for given job titles from five external vendors for benchmarking purposes. AEMO's forecast external labour costs fall within the benchmarked ranges.

4.1.2 Other information considered

Before making its final determination, the ERA considered stakeholder feedback received in response to the draft findings report.

[58] AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 20 (online)

In its response to the ERA's draft findings report, Energy Networks Australia encouraged the ERA to further review AEMO's proposed labour costs:

> ENA recommends that the ERA seek further supporting information from AEMO to justify its proposed costs, especially in the context that AEMO's total employment costs have risen 104 per cent in the last four years.[59]

Synergy supported the ERA assessing labour quantity not unit rates:

> A more effective way to assess the labour cost forecast is for ERA to consider whether the number of resources is appropriate, rather than attempting to adjust the forecast labour rates of each of those resources. This is because AEMO would have more discretion on the number of resources it appoints than it would over the rate it ultimately pays for each individual resource.[60]

Western Power supported AEMO's argument on the type of staff needed to work on DER projects:

> Western Power is of the view that in many respects, the work required is highly specialised and likely to require higher cost expertise, as these are emerging issues with no current comparable solution.[61]

The ERA has considered the above feedback in its determination. Forecast labour costs amount to over three quarters of AEMO's funding submission, so the ERA has concentrated on reviewing how AEMO estimated these costs consistent with the suggestion from Energy Networks Australia. Part of the ERA's review has also looked at both the labour competencies and specialist knowledge required and the number of full-time equivalent days anticipated for each position. This addresses Synergy's comment. Both AEMO and Western Power have noted that that, given the specialist nature of the DER roadmap actions, this would attract higher cost staff. However, no evidence has been provided to support this claim.

4.1.3 Conclusion

AEMO identified 33 existing staff to work on DER actions, nine from the WEM and 24 from the NEM, to use their experience of integrating with WEM IT systems and working on similar distributed energy projects in the NEM. These staff are already funded, and their costs are known and do not need to be forecast beyond inclusion of annual increases that form part of AEMO's Enterprise Agreement or common law employment contract terms and conditions. In its determination, the ERA has considered only AEMO's incremental costs for DER activities. Cost forecasts for existing WEM positions with only a limited contribution to DER projects have not been considered as these positions are unlikely to be backfilled and do not represent an incremental cost to AEMO.

AEMO also forecast costs for new contract positions in the WEM using its five-tier system of unit rates. The analysis in 4.1.1 suggests that, given the overlap between tiers, each tier does not represent a clustering of competencies, responsibilities and remuneration from which to robustly cost new positions.

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59 Energy Networks Australia, 2020, *Australian Energy Market Operator in-period funding application*, p. 2 (online)

60 Synergy, 2020, *Submission to the Economic Regulation Authority's Draft Findings Report on the Australian Energy Market Operator's in-period funding submission for implementation of the Distributed Energy Resources Roadmap*, pp. 5-6 (online)

61 Western Power, 2020, Draft findings – AEMO in-period funding submission for implementation of the DER Roadmap, p 2 (online)

In its response to the draft findings report, AEMO stated:

> It is therefore reasonable and prudent to use total remuneration of employees in similar roles as a proxy for the estimated day rate payable to new short-term contractors appointed to work the DER Roadmap implementation activities.[62]
>
> A day rate paid to a short-term contractor is typically higher than the base day rate paid to a permanent employee (excluding performance and leave benefits). This is because the rate is loaded to compensate for the contractor not being entitled to paid leave or the benefits and security of a permanent role.[63]

The ERA agrees that it is reasonable to use existing staff costs to forecast the cost of new hires. However, AEMO's forecast based on its five tier unit rate approach overestimates the cost of its existing staff. This undermines the five tier unit rate approach as being representative of AEMO's existing costs. The extent of the overlap of actual salaries across the five tiers does not suggest that each tier represents a robust clustering of competencies and responsibilities to use as the basis for forecasting new staff costs. Unlike its approach to supporting its forecast external labour costs, AEMO did not provide any evidence to support its claim that it needed to pay internal staff on short-term contracts rates equal to or higher than the rates applied to existing staff.[64]

For these reasons, the ERA does not support using the five-tier rates for costing new staff and instead has assumed a 25 per cent margin above market rates for new positions identified to work on DER projects in its determination. The 25 per cent margin is consistent with the premium typically paid to skilled staff on short-term contracts to compensate them for job security and other permanent employment benefits.

The ERA's funding determination approves forecast capital expenditure of $7.8 million, equivalent to cover AEMO's estimated internal labour costs for DER projects.

The ERA is satisfied that the approach taken to forecasting external labour costs is consistent with the funding approval requirements in the market rules. The ERA's final determination approves forecast capital expenditure of $4.9 million to cover AEMO's estimated revised external labour costs for DER projects.

4.2 Hardware, software and travel costs

Three of the DER implementation actions include forecasts for hardware costs of $0.2 million and software costs of $0.9 million. This forecast expenditure is allocated to the projects that include an element of system development or integration. Examples include testing cloud services, standalone system testing and new software to enable improved data streaming. AEMO has indicated how it has estimated these costs based on actual costs incurred elsewhere.

AEMO included $69,500 in travel costs as part of its program support function. AEMO expected this forecast to be used for workshops and training as and when required. The cost has been averaged across 2021/22.

The ERA accepts that the approach taken to forecasting hardware, software and travel costs is consistent with the funding approval requirements in the market rules. The ERA's final

[62] AEMO, 2020, *ERA Draft Findings Report AEMO Submission*, p. 13, (online)

[63] Ibid

[64] AEMO did provide actual invoices for some external labour positions.

determination approves forecast capital expenditure of $1.4 million to cover AEMO's estimated hardware, software, consultancy, and travel costs for DER projects.

4.3 Property costs

AEMO included a total property cost of $0.4 million in its submission. This cost is a fixed occupancy charge per FTE hour applied to all internal and external staff and contractors. AEMO explained that the property cost charge included "rental, floorspace, utilities and consumables", and provided a breakdown of the individual elements in confidential information provided to the ERA. AEMO indicated that additional floor space would be required at its office to accommodate additional staff working on the DER roadmap actions but did not indicate when or how much additional floorspace would be required.

AEMO has previously advised the ERA that:

> AEMO's accommodation strategy now includes options such as requiring consultants to work from their own premises and hot desking to minimise the need for additional office space. This demonstrates that AEMO has sought to restrict its accommodation costs.[65]

AEMO did not provide information confirming that it had applied this strategy when setting the accommodation element in its property charge. The option of hot-desking may no longer be appropriate given health and safety arrangements adopted by most organisations to protect staff through the COVID-19 pandemic. However, the ERA understands that AEMO continues to encourage staff, including contractors, to work part of their time from home. Given the extended nature of these arrangements, and that AEMO has continued to work on WEM reforms while working from home, an option may be to enable some new contract staff to work on this basis. This would limit the need for additional floor space. AEMO has confirmed verbally to the ERA that it will actively seek to avoid extending its office space.[66]

In this funding approval, the ERA is primarily concerned with the incremental costs AEMO can expect to incur from its new DER roadmap action obligations. The ERA has applied the same approach to identifying incremental property costs that it did to identifying incremental labour costs in section 4.1.1. Occupancy costs for existing NEM staff, backfilled WEM staff and new contract hires are an incremental cost to the WEM resulting from AEMO's new DER obligations. However, where existing WEM staff contribute less than one day a week to DER projects it is unlikely these staff will be backfilled and so AEMO will not incur any incremental property costs for those existing staff.

Based on AEMO's proposed hourly unit rate, the ERA has approved $0.3 million forecast capital expenditure to cover incremental forecast property costs.

4.4 Financing costs

AEMO finances capital projects using a loan facility. Projects greater than $1 million attract a borrowing cost. In its response to the ERA's findings report, AEMO noted that the 3.3 per cent financing capitalisation rate used to determine the borrowing cost for DER projects in its submission had reduced to 2 per cent for the remainder of the AR5 period. This was because in the meantime AEMO had "established new financing arrangements and market-based

[65] ERA, 2019, *Australian Energy Market Operator Allowable Revenue and Forecast Capital Expenditure 2019/20 to 2021/2022 – Final Determination*, pp. 26-27 (online)

[66] This information was provided verbally at a meeting on 26 November 2020.

interest rates have fallen." AEMO reported a change in its estimated financing costs from $498,803 to $300,113, a reduction of $189,690.

The ERA considers that this is a prudent approach to estimating financing costs for its capital projects. The final determination approves forecast capital expenditure of $0.3 million, equivalent to AEMO's estimated financing costs for DER projects.

4.5 Project contingency

AEMO identified a project contingency cost of $2.3 million in its revised DER forecast. This equates to approximately 12 per cent of the total revised capital expenditure forecast. AEMO undertook a risk assessment of each DER roadmap action and from this calculated a project contingency. There were two categories of risk assessment:

- the risk that resource costs would vary from the forecast
- the risk that the cost of hardware, software and licences would vary from the forecast.

Within each risk category, AEMO identified sub-elements that may drive project risk, such as changes in the mix of internal and external resources, changes in the complexity or the scope of the project and any other feasible risk such as exchange rate risk.

The ERA has previously raised concerns with AEMO's approach to estimating project contingency. Historically, AEMO's actual expenditure has been below the approved level of allowable revenue and forecast capital expenditure. There have been reasons for this, for example poor cost forecasting, good cost management or projects being cancelled or delayed. However, AEMO has not demonstrated a feedback loop between its actual experience of managing project risk, using contingency and its estimation of contingency for new projects. AEMO has also previously identified some project risk, such as exchange rate risk, that could work in AEMO's favour.[67] AEMO's submission and additional information provided did not address any of the ERA's previous concerns about AEMO's approach to project contingency.

The 15 per cent overall project contingency AEMO calculated for DER actions appears high, given the nature of the proposed expenditure. AEMO reduced this overall contingency to 12 per cent in its revised submission.

The ERA does not approve AEMO's estimates of project contingency for DER projects. Over 75 per cent of the DER project costs are for labour and just under half of these are existing staff. There are 24 internal NEM staff and nine internal WEM staff identified to work on DER roadmap actions. AEMO's submission in response to the draft findings report suggested that contingency was needed because there was "a real risk that these resources will not be available due to reasons beyond AEMO's control (e.g. turnover, inability to backfill)." AEMO has control over how it manages its internal personnel and will allocate staff to projects based on organisational priorities, so can make staff available to work on DER projects if required. In addition, all organisations bear the risk of valuable staff moving on. A prudent service provider would mitigate this risk through a risk management plan and engage in succession planning for all projects. For new staff, AEMO mentions its "medium high level of confidence that sufficient resources will be available from the market."[68]

[67] Ibid, p. 32

[68] AEMO, 2020, *ERA Draft Findings Report AEMO Submission*, pp. 45-46, (online)

The number of existing staff available to work on DER projects and AEMO's confidence that it can recruit new contract staff does not support a separate project contingency for labour-only projects.

AEMO included exchange rate risk as part of the types of risks it considers. AEMO has not identified that any of its staff or consultants would be hired from overseas. Therefore, the only instance of exchange rate risk would be on hardware and software costs. In AEMO's DER funding submission, the total value of this component is just over $1 million so any exchange risk would be small. AEMO's annual report states that, on occasion, AEMO enters into foreign currency contracts to minimise currency risk. Using low-cost hedging products such as foreign currency options or forward exchange contracts would fix the price of any foreign currency purchases and eliminate any exchange rate risk.

The DER roadmap actions with the highest project contingences identified by AEMO are the DER register (action 15 in AEMO's submission) with a project contingency of 22 per cent and the DER orchestration pilot (actions 22 and 23 in AEMO's submission) with a project contingency of 20 per cent.

AEMO stated that the DER register project contingency was a combination of the project requiring some software development to enable the DER register to interface with WEM IT systems and the risk of a project extension and the necessary retention of the project team.[69] The ERA suggests that if there is a delay in this project because "Western Power is not ready to deploy within the expected time", as claimed by AEMO, then AEMO's project team should be deployed on another project until the DER register work resumes.

AEMO applied the 20 per cent contingency to the DER orchestration pilot because "platform/software development" was required.[70] Given that AEMO intends to use off-the-shelf software to deliver the pilot, this attracts a lower contingency than the 30 per cent starting point AEMO typically uses for assessing contingency for an IT project. There may be a residual risk for AEMO given the nature of IT development. However, AEMO has not provided evidence of its risk assessment to explain how it arrived at a 20 per cent contingency.

The market rules enable AEMO to overspend approved forecast capital expenditure by 10 per cent before it needs to apply to the ERA for a budget uplift. The ERA suggests any additional project costs incurred because of IT issues could be accommodated in this budget allowance.

Feedback from Synergy in response to the draft findings report supported using the 10 per cent capital overspend allowed in the market rules for contingency costs:

> In principle, we consider the ERA's position is reasonable and that the 10% allowance automatically provides a reasonable amount of contingency.[71]

Synergy recommended the ERA consider whether "not having any provision for contingency would lead to continued funding uncertainty that may inhibit delivery of the DER Roadmap actions."[72]

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69 AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 46 (online)

70 AEMO, 2020, *Adjustment to 2019-22 Forecast Capital Expenditure – DER Roadmap Implementation Costs*, p. 47 (online)

71 Synergy, 2020, *Submission to the ERA's draft findings report on AEMO's in-period funding submission for implementation of the DER roadmap*, p. 6 (online)

72 Ibid.

Energy Networks Australia supported "the ERA's proposed $2.2 million reduction in Project Symphony costs, largely due to reduced labour unit rates and removal of project contingency."[73]

Summit Southern Cross Power stated that it "generally agrees with the Authority's (implied) observations that AEMO is overly conservative with its costings and contingencies."[74]

The ERA's view remains that it does not approve forecast capital expenditure to cover AEMO's revised forecast project contingency of $2.3 million.

4.6 Capitalisation policy, intangible assets and future benefit

In the draft findings report, the ERA noted that AEMO had chosen to capitalise the DER funding identified in its submission in line with the Australian Accounting Standards Board (AASB) 138 – Intangible Assets.[75]

In additional information provided to the ERA, AEMO noted that the DER project would deliver:

> New and enhanced capabilities developed, systems, protocols, procedures and technical specifications/prototypes built (and more) in order to incorporate DER into the power system. These can be considered either intellectual property (IP) or actual technology assets created.

In the draft findings report, the ERA questioned this approach as it represented a change from how AEMO had previously categorised initial DER cost estimates. In May 2020, AEMO provided estimated cost information as part of EPWA's DER consultation paper. In this initial $13.7 million estimate of its DER implementation costs, 37 per cent was identified as forecast operating expenditure and 63 per cent was forecast capital expenditure.

The ERA also noted that AEMO expected to develop intellectual property through DER activities and that this would be an intangible asset, controlled by AEMO and from which future economic benefits were expected to flow to AEMO. The intellectual property could be separated and shared with or sold to third parties if desired.

Many of the actions outlined in the DER Roadmap lead expected national work programs. Examples include the work on inverter standards and communications as well as the virtual power plant pilot (Project Symphony). The benefit of linking or harmonising systems and knowledge between the NEM and the WEM is the value of intellectual property that can be spread and recovered across both markets and a wider cost base. It is reasonable for AEMO to use the intellectual property gained from conducting WEM-based DER activities in the NEM. If some of the benefit from AEMO's involvement in the DER roadmap actions is to be transferred out of the state and used in other Australian jurisdictions, then these jurisdictions could bear some of the costs incurred in acquiring the intellectual property. Electricity customers in the SWIS should not be funding benefits that are realised by NEM customers. The ERA noted in the draft findings report that AEMO's proposal did not discuss how the value

73 Energy Networks Australia, 2020, *Australian Energy Market Operator in-period funding application*, p. 2 (online)

74 Summit Southern Cross Power, 2020, *AEMO AR5 in-period funding request for DER implementation*, p.1 (online)

75 Australian Accounting Standards Board, 2020, AASB 138 – Intangible Assets (online) accessed 29 October 2020.

from the intangible assets created through DER activities would be captured, commercialised, or transferred in the interest of market participants.

In the draft findings report, the ERA expressed concern about whether all of the DER activities can or should be capitalised. The ERA's view was that unless AEMO could demonstrate how and where the future value of these intangible assets would be realised, the ERA's initial view was to treat some or all of the costs as operational expenditure.

AEMO's response to the draft findings report confirmed that "AEMO has not placed a value on intellectual property. This is because AEMO does not intend to sell the intellectual property or make any profit from it."[76]

4.6.1 Other information considered

Synergy's submission in response to the draft findings report commented on AEMO's approach to the capitalisation of assets. Synergy expressed concern that if capital costs were reallocated to operating expenditure then WEM fees in the current period would increase.[77]

Synergy noted:

> Synergy understands capitalising the expenditure may only serve to defer the WEM fee impact into future periods. However, if fees are destined to increase, our preference is that the impact be spread over a longer timeframe and there is opportunity to scrutinise AEMO's ongoing actual costs.[78]

4.6.2 Summary

AEMO has confirmed that "any value brought about by the DER Roadmap actions is dedicated to the SWIS with customers being the ultimate beneficiaries."[79] The ERA is satisfied that AEMO's approach to capitalisation is consistent with the appropriate Australian Accounting Standards.

The ERA accepts AEMO's decision to capitalise the cost of this funding request. This addresses Synergy's preference to have the effect of increased market fees spread over a longer timeframe. In separate discussions with AEMO, the ERA has confirmed that the forecast capital expenditure approved in this determination will be allocated evenly between the existing AR5 capital budgets for Market Operations and System Management.

4.7 AEMO's governance process

AEMO provided information on its internal governance process and how the DER funding application had been challenged through that process before being submitted to the ERA.

There are multiple governance steps in AEMO's processes and AEMO has indicated, in additional information provided to the ERA, the types of matters discussed. The ERA asked AEMO to provide meeting notes from the committee meetings so the ERA would be able to assess what the committees discussed, the robustness of the top-down challenge process, or

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76 AEMO, 2020, *ERA Draft Findings Report AEMO Submission*, p18 (online)

77 Synergy, 2020, *Submission to the ERA's draft findings report on AEMO's in-period funding submission for implementation of the DER roadmap*, p. 4 (online)

78 Synergy, 2020, *Submission to the ERA's draft findings report on AEMO's in-period funding submission for implementation of the DER roadmap*, p. 4 (online)

79 AEMO, 2020, *ERA Draft Findings Report AEMO Submission*, p18 (online)

how long the committees spend discussing the proposal. AEMO did not provide this information. In addition, AEMO did not record meeting notes for all governance sessions.

The ERA accepts that AEMO's DER forecast costs were assessed through AEMO's internal governance process but, without the requested information, cannot ascertain the effectiveness of that process in constraining AEMO's DER capital expenditure forecast.

4.8 ERA's determination on DER forecast capital expenditure

The ERA has combined its determinations on each of the cost categories in sections 4.1 to 4.8 to approve $14.6 million total forecast capital expenditure for AEMO's new DER roadmap implementation obligations. This represents 81 per cent of AEMO's latest cost estimate, provided in November 2020.

The approved forecast capital expenditure is consistent with the funding approval requirements in the market rules. The ERA has considered only the incremental cost AEMO expects to incur when implementing its new DER roadmap obligations. The ERA has only taken into account the incremental costs that would be incurred by a prudent provider of the services, acting efficiently and seeking to achieve the lowest practically sustainable cost of delivering the services described.

The ERA's final determination is provided in Table 4 by cost category and in Table 5 by workstream.

Table 4: Draft report calculation of DER forecast capital expenditure compared to AEMO's proposal by cost category for DER activities in AR5

Cost category	AEMO proposed ($ million)	ERA draft finding ($ million)	AEMO revised forecast	ERA final determination ($ million)	Variance (%)*
Internal labour	9.0	7.3	8.8	7.8	(12)
External labour	5.4	5.4	4.9	4.9	-
Hardware	0.2	0.2	0.2	0.2	-
Software	0.9	0.9	0.9	0.9	-
Travel	0.1	0.1	0.1	0.1	-
Property	0.4	0	0.4	0.4	(4)
Financing	0.5	0.5	0.3	0.3	-
Contingency	2.4	0	2.3	0	(100)
Total	**18.9**	**14.4**	**17.9**	**14.6**	**(19)**

Source: ERA analysis

Note: The variance column compares the ERA's determination with AEMO's revised forecast

In the final determination, forecast capital expenditure for DER actions reduces to $14.6 million. This is $3.3 million, or 19 per cent, lower than the $17.9 million forecast capital expenditure AEMO proposed in its revised forecast.

The ERA has also recalculated the final determination expenditure by workstream. This is shown in Table 5 for comparison against AEMO's submission.

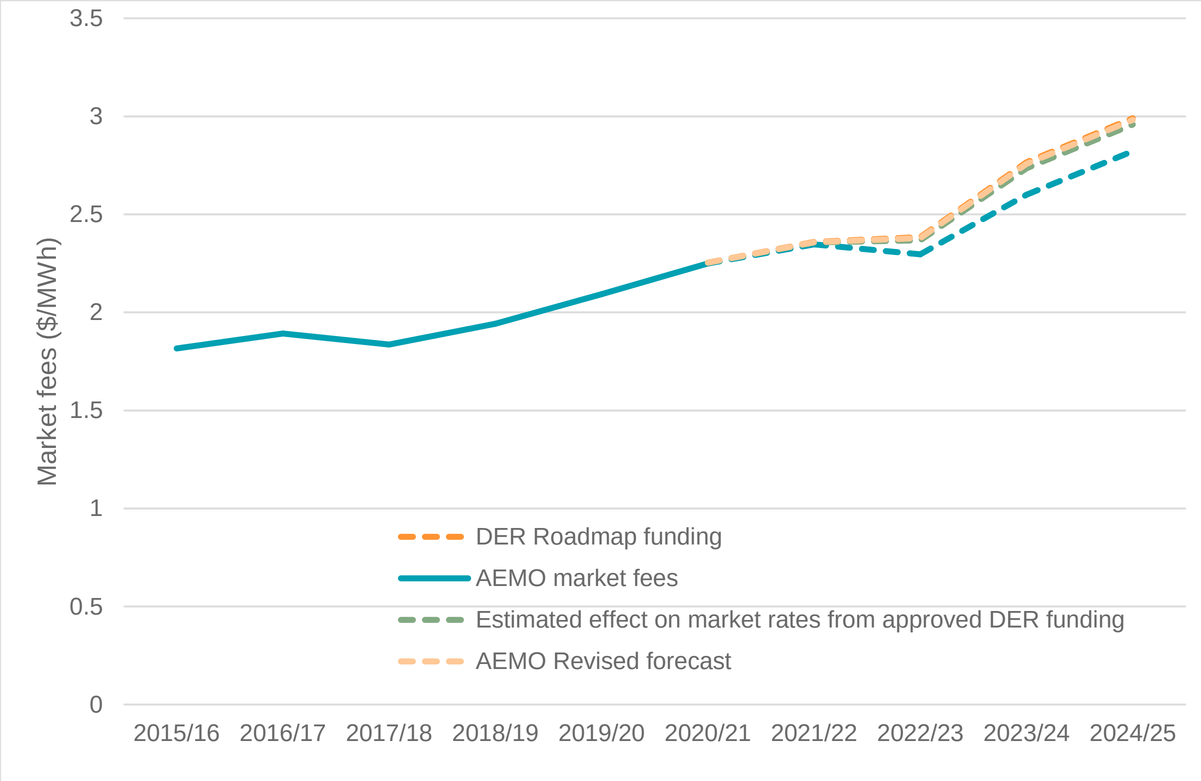
Table 5: ERA's final determination on DER forecast capital expenditure compared to AEMO's proposal by workstream for DER activities in AR5 ($ million)

Workstream	AEMO proposed	ERA draft findings	AEMO revised forecast	ERA final determination	Variance (%)
DER register	1.3	0.9	1.3	1.0	(23)
DER participation	2.2	1.6	2.2	1.7	(23)
Technology Integration	3.3	2.3	3.2	2.8	(12)
DER orchestration	9.5	7.3	8.6	6.8	(21)
Program support	2.6	2.2	2.6	2.3	(11)
Total	**18.9**	**14.4**	**17.9**	**14.6**	**(19)**

Source: ERA analysis

The estimated effect on market fees from the determination is in Figure 3 below. The estimated increase in market fees due to the DER Roadmap funding is approximately 4 per cent above the project fees for the AR6 period.

Figure 3: Estimated effect on market fees



Source: ERA analysis of AEMO's proposal

Appendix 1 History of allowable revenue and forecast capital expenditure proposals and approvals AR3-AR5

Table A1: Comparison of proposed and approved funding over the last three funding approval periods

$'000s (nominal)	AR3 - 1 July 2013 – 30 June 2016			AR4 – 1 July 2016 – 30 June 2019			AR5 – 1 July 2019 – 30 June 2022					
	IMO proposed	ERA approved	Variance (%)	AEMO proposed	ERA approved	Variance (%)	AEMO proposed	ERA approved	Variance (%)	AEMO revised proposed	ERA revised approved	Variance
Total allowable revenue	91,800	88,182	(3.9)	114,344	99,265	(13.2)	104,241	105,895	1.6	-	-	-
Independent Market Operator/Market operator	48,776	48,776	-	53,972	44,263	(18.0)	42,764	44,795	4.7	-	-	-
System management	43,024	39,403	(8.4)	54,494	49,386	(9.4)	55,584	55,033	(0.99)	-	-	-
GSI	6,919	6,919	-	5,878	5,619	(4.4)	5,893	6,067	3.0	-	-	-
Total forecast capital expenditure	12,006	10,734	(10.6)	51,264	33,232	(35.2)	78,477	66,324	(15.5)	85,175	80,924	(5)
Independent Market Operator/Market operator	6,274	6,274	-	31,530	16,091	(49.0)	38,637	34,469	(10.8)	43894.5	41769	-5%
System management	5,271	3,999	(24.1)	18,616	16,023	(13.9)	38,566	31,322	(18.8)	40747.5	38622	-5%
GSI	461	461	-	1,118	1,118	-	1,274	533	(58.2)	533	533	-

Appendix 2 Summary of stakeholder submissions in response to the ERA's draft findings report

The ERA received six submissions in response to the draft findings report. All submissions are published on the ERA's website.

Australian Energy Council[80]

The Australian Energy Council (AEC) noted the ERA's review in the context of substantial cost increases in the AR5 revenue period. Overall, the submission supported the ERA's efforts to lower forecast capital expenditure.

The AEC restated its position that it does not support industry paying for government led reform. The AEC's submission suggested that funding reform through market fees made AEMO's responsibility to minimise fees more difficult. The approach also penalised participants in accordance with their market share, while the drivers of the reforms face no direct cost.

The AEC encouraged the ERA to review the way AEMO's costs are recovered from market participants and non-market participants in the future, include this matter in the next annual WEM effectiveness report, and address these issues with EPWA.

The submission noted:

> It is critical for all stakeholders that market fees, which are already substantial and increasing, are managed and excess costs eliminated.

Energy Networks Australia[81]

Energy Networks Australia (ENA) supported the DER roadmap and grid integration. The submission recommended that funding should be carefully assessed for prudency and efficiency.

ENA made two comments on the scope of AEMO's DER roadmap obligations:

> Some of the activities seeking funding appear to duplicate the responsibilities of the relevant distribution network service providers (DNSPs) and possibly work already undertaken as part of previous work programs.
>
> ENA's findings from the Open Energy Networks project (OpEN project) is that pursing a centralized market approach to DER orchestration is a high cost approach that bears significant risk of stranded assets, while a scalable and proportionate approach would deliver optionality value and minimize the risk to consumers of investing heavily under uncertain future DER uptake scenarios. While the OpEN project only delivered a cost-benefit analysis for the NEM, learnings from the project are likely to be similarly applicable in the WEM,

ENA's suggested that there were reasons why AEMO's labour rates could be higher, but the justification was not outlined in AEMO's submission. ENA supported the ERA seek additional information from AEMO regarding its proposed costs - especially given the 104 per cent increase in staffing costs ENA had identified over the last four years.

ENA supported the ERA removing the project contingency and reducing the labour rates.

80 Australian Energy Council, 2020, *Australian Energy Market Operator in-period funding for Distributed Energy Resources Roadmap activities,* (online)

81 Energy Networks Australia, 2020, *Australian Energy Market Operator in-period funding application*, (online)

Synergy[82]

Synergy noted that as it incurs a substantial share of the market fees flowing from AEMO's proposal it supports due diligence on reviewing AEMO's proposal. Synergy supported the proposal provided the costs were demonstrated to be prudent and efficient.

> As a key implementation partner in the State Government's reform program, we seek for this due diligence to be balanced with a sense of reasonableness and expedition. Each of the implementation partners rely on AEMO gaining access to the necessary funding required to undertake its functions and the broader market relies on the pilot project along with other actions in the Roadmap being successful."

Synergy did not support the ERA changing the basis of AEMO's proposal from capital expenditure to operating expenditure, as suggested in the draft findings report, because of the effect it would have on market fees.

> Synergy understands capitalising the expenditure may only serve to defer the WEM fee impact into future periods. However, if fees are destined to increase, our preference is that the impact be spread over a longer timeframe and there is opportunity to scrutinise AEMO's ongoing actual costs."

Synergy suggested the better way for the ERA to assess the forecast labour costs would be to address not the labour rate but the quantity. Synergy also considered the 10 per cent overspend allowance was enough to cover the costs of contingencies for the DER projects. However, Synergy did ask the ERA to consider if not having any provision for contingency would lead to continued funding uncertainty and if this would detrimentally affect the State Government's program as a whole.

Western Power[83]

As another organisation tasked with delivering aspects of the DER roadmap, Western Power confirmed that DER actions are at "differing levels of certainty in a regulatory sense." Without this certainty it is difficult to forecast implementation costs with precision. Western Power suggested that even without cost certainty "it is therefore anticipated that the costs of transition and implementation are outweighed by the benefits customers will receive."

Summit Southern Cross Power[84]

Summit Southern Cross Power (SSCP) did not support the changes to the rules that constrained the ERA's ability to scrutinise the funding application. SSCP acknowledged the ERA had no ability to review the prudency of the work program, only the costs.

SSCP noted its concern that AEMO's proposed costs would contribute to a substantial burden on the market and stated:

> "SSCPH again reiterates its position that such costs have grown excessive relative to the benefit they provide a small and uncomplicated market such as the WEM.
>
> All of these numbers are extraordinary. It is not lost on SSCPH that increasing fees are being levied in increasing proportion to incumbent participants in a simplistic allocation methodology that has not been fit-for-purpose for some time. At the very least,

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82 Synergy, 2020, *Submission to the Economic Regulation Authority's draft findings report on the Australian Energy Market Operator's in-period funding submission for implementation of the Distributed Energy Resources Roadmap*, (online)

83 Western Power, 2020, *Draft findings – AEMO in-period funding submission for implementation of the DER roadmap*, (online)

84 Summit Southern Cross Power, 2020, *AEMO AR5 in-period funding request for DER implementation*, (online)

> notwithstanding the requirement for a proper evaluation of the cost-benefit of the WEM itself, this allocation methodology must be reviewed in time for the AR6 period.

SSCP supported the ERA challenging the forecast project delivery costs and stated that "conservatism or 'gold-plating'" in the delivery is to be expected and should be challenged by the Authority."

AEMO[85]

AEMO did not support the findings in the ERA's draft findings report for most funding categories noting it did not provide information at the time for the ERA to validate its proposal.

AEMO stated that although it had identified positions where the occupants had the requisite capability to deliver DER roadmap projects, it could not assure they would be available to work on the projects. It considered a contingency was appropriate to cover project risks linked to backfilling, turnover and external market conditions. It also considered the risk that additional analysis may be necessary to deliver the roadmap projects than had been scoped. It considered the ERA's indicated approach to project contingency was not consistent with previous funding determinations. It also believed the 10 per cent overspend allowance should be reserved for new projects that were unforeseen and not be used for additional project expenses.

AEMO expressed a view that it's labour rates were not materially above industry norms and disagreed with the ERA's preliminary findings. It also believed that its rates were a reasonable benchmark to reflect the higher costs connected with the short-term employment of specialist resources.

AEMO stated its property costs increased (including both resources, accommodation, and utilities) as occupancy increased regardless of whether additional accommodation was needed. it also stated it considered it to be reasonable to account for the property related costs for NEM staff working on WEM related projects and vice versa. While it could not confirm that additional space would be required, it believed it was prudent to allow for it to be increased.

AEMO believed it was satisfied that it had reasonably assessed the labour requirement through a comprehensive planning and governance processes. It also identified labour volume reductions on one project reducing the funds it was seeking by around half a million dollars.

AEMO noted the benefit of intellectual property applied across both markets and separately accounting for the contribution of intellectual property to and from either market was not practical. AEMO also expressed a view that considering the future benefits was outside the scope of the funding review which was to assess costs and not benefits.

AEMO did not consider its preliminary estimates for the implementation cost for the DER roadmap a fair basis for comparison with its proposal.

AEMO provided updated project costs reflecting a change in the financing rate, some project savings that would reduce the labour requirements for the virtual power plant pilot.

85 AEMO, 2020, *Response to ERA's Draft Findings Report*, (online)