NTESMO

FY2028–32 System Control and Market Operator Charges Review

Consultation Paper

December 2025

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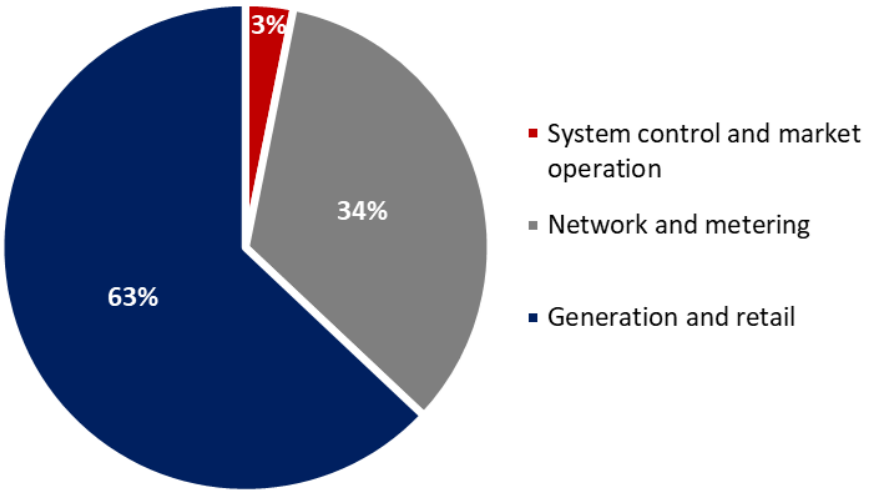
Executive Summary

Context

Power and Water Corporation (Power and Water) is a government-owned corporation. The Northern Territory Electricity System and Market Operator (NTESMO) is an independently operated (ring-fenced) unit within Power and Water. It carries out System Control functions for the Northern Territory's 3 major networks Darwin-Katherine, Alice Springs and Tennant Creek. Since 2015, NTESMO has also provided Market Operator functions for the Darwin-Katherine region's electricity market. NTESMO carries out its System Control and Market Operator functions through the provision of a series of regulated and unregulated services. This consultation paper discusses the regulated services only.

NTESMO's regulated services contribute a relatively small proportion (less than 5%) to electricity supply costs as illustrated by Figure 1. However, the Northern Territory electricity systems and market are undergoing rapid transformation and NTESMO's role is growing in prominence.

Figure 1: Electricity supply cost breakdown for a residential customer 2025-26



Note: Illustrative breakdown of average cost to supply a residential electricity customer consuming 8,500 kWh per year in Darwin Katherine, Alice Springs and Tennant Creek by supply service component.

The uptake of renewable electricity generation and storage present a significant opportunity to reduce the wholesale cost of electricity generation. However, the speed and scale of the uptake of distributed energy resources and large-scale solar PV generation are presenting NTESMO with significant operational challenges in relation to managing the reliability and security of the electricity systems under its existing functions.

In addition, the Northern Territory Government recently made legislative reforms that will create new electricity market and governance structures for the Northern Territory's major electricity systems. Central to the new governance structure is the establishment of NTESMO as a statutory corporation, formally separating the System Control and Market Operator functions from Power and Water. NTESMO will also carry out central planning and procurement activities, new functions in addition to those it already provides, as part of new electricity market arrangements. This legislation will have significant impacts on both the operations and expenditure requirements of NTEMSO's System Control and Market Operator functions.

FY2028–32 regulatory period

Costs incurred by Power and Water in performing NTESMO's regulated functions are recovered through charges approved by the Utilities Commission of the Northern Territory (the Commission). The Commission's regulatory determination sets NTESMO's allowed revenues for the System Control and the Market Operator functions respectively, for each regulatory year based on an assessment of its efficient costs. The Commission accordingly determines the annual charges that can be recovered by NTESMO from market participants in the Northern Territory for the performance of its functions.

The FY2028–32 Regulatory Proposal will set out the forecast expenditure Power and Water expects to incur in performing NTESMO's current functions across the next regulatory period from fiscal year (FY) 2028 to 2032 (1 July 2027 to 30 June 2032). The proposal is being developed against the backdrop of significant transformation and reform currently shaping the Northern Territory's electricity system, market and governance. It will account for the additional NTESMO functions related to planning and procurement that have been introduced, NTESMO's performance of financial market settlement, as well as the required separation of NTESMO from Power and Water. The proposal will also account for the wider changes in electricity market and governance arrangements that are to be introduced.

As a result of the short timeframe between the passing of the recent reform legislation and the scheduled publication date of this paper, the **activities and associated expenditure outlined in this consultation relate to NTESMO's current (business-as-usual) functions only.** We are in the process of estimating the costs associated with the reforms and will provide these as part of our initial Regulatory Proposal to the Commission, which is expected in February 2026. We will set out the costs to NTESMO associated with reform separately from our other activities. This will allow the Utilities Commission and stakeholders to provide feedback on our estimates of reform costs.

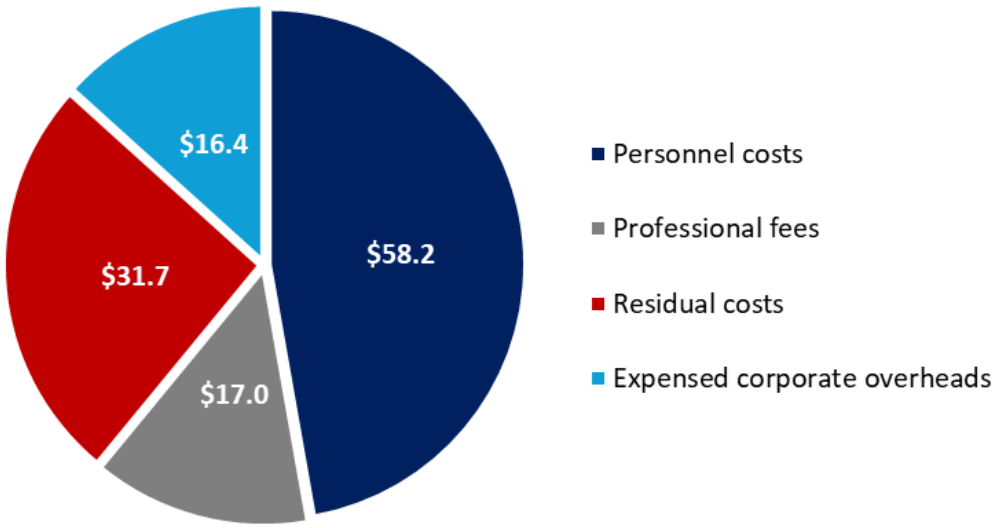
Revenue requirement

In this consultation paper, we provide our current forecasts of both operating expenditure (opex) and capital expenditure (capex) for the next regulatory period. These are provided to indicate the scale of expenditure expected relative to the current regulatory period. Our estimates will be refined further for the regulatory proposal. All numbers within this paper are presented in real 2024-25 dollars, unless otherwise stated.

NTESMO's forecast for opex is $123.3 million over the FY2028–32 regulatory period, or approximately $24.7 million annually, in relation to its business-as-usual activities. Personnel costs are the dominant cost category, accounting for over half of total forecast opex, with the remaining amount split between corporate overheads, residual costs and professional fees.

The forecast for the next regulatory period represents a step up from annual opex in the current period where NTESMO has been provided with an opex allowance of $19.7 million per annum on average. This step-up results from continued change in NTESMO's operating environment; the scale of the uptake of distributed energy resources and large-scale solar PV generation, and its integration into existing networks and systems.

Figure 2: Total forecast business-as-usual opex by cost category FY2028–32 ($m, real 2024-25)



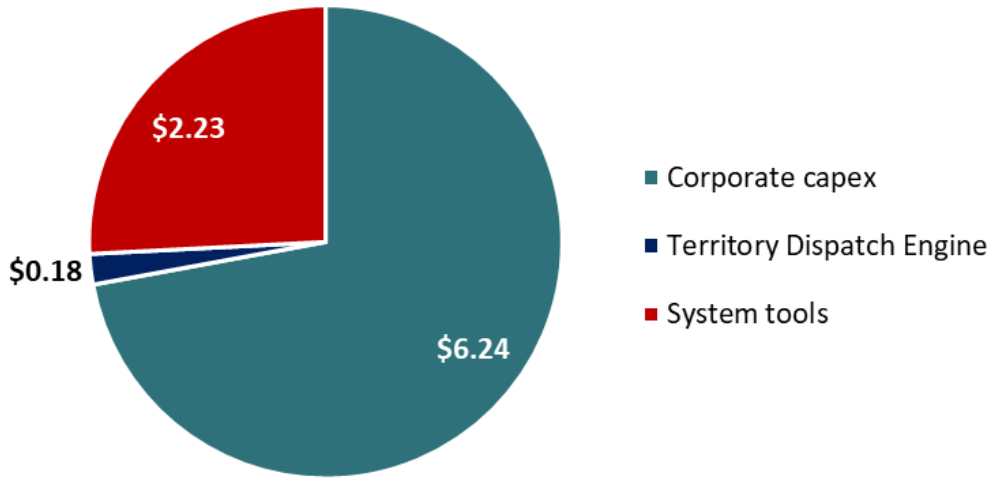
NTESMO's forecast for capex is $8.7 million over the next regulatory period in respect of business-as-usual functions to be added to and recovered through the Regulatory Asset Base. This is notably lower than approved capex for the current regulatory period ($52.2 million), which was driven largely by expenditure for the Territory Dispatch Engine, a substantial capital project. We are in the process of reviewing the capital expenditure profile for the Territory Dispatch Engine and expect that the overall capital cost will remain unchanged, however re-profiled timing will shift some of these costs into the FY2028–32 period.

For the next regulatory period the main driver of capex is investment in shared corporate assets allocated to NTESMO's functions from Power and Water. The primary reason for the notable corporate capex allocation is a large-scale program of works being undertaken that will bring all Power and Water operations into a single site in Darwin. This expenditure will be partly offset by reductions in future lease costs replaced by the single site investment.

Power and Water acknowledge that the corporate overhead allocations to both opex and capex require review in the context of the recently passed legislation ahead of submission of the initial Regulatory Proposal. This consultation paper was prepared on a business-as-usual basis and, as such, the impacts of the reforms on existing expenditure have not yet been fully examined. This is most notable for corporate overheads, which will cease to be allocated to NTESMO post-separation. This allocation however represents an evidence-based cost of NTESMO's future corporate functions post separation.

To achieve separation from Power and Water as envisaged in legislation, NTESMO may need to replace the provision of the services and shared assets currently provided by Power and Water and incurred as corporate overheads. These costs are not known at present.

Figure 3: Forecast business-as-usual capex by driver for FY2028–32 regulatory period ($m, real 2024-25)



Productivity factor

A productivity factor represents the notion that, in the absence of external change, a business should become more efficient in performing the same functions over time. We consider there to be limited scope for such ongoing productivity gains within NTESMO's opex at present given the context in which it is operating. For the forthcoming period we therefore propose that the productivity factor should remain at zero (0%) consistent with the practice for the Australian Energy Market Operator and reflecting NTESMO's changing operating environment and the need to react to recently legislated reforms. Those reforms require separation from Power and Water and the introduction of two new functions and will result in significant changes to NTESMO's structure and operational requirements.

We consider a non-zero productivity factor may be more appropriate in future regulatory periods, when the Northern Territory market and regulations, and NTESMO's operating environment are stable following the current period of reform.

Performance incentives

The Commission has requested that, within its Regulatory Proposal, NTESMO propose a set of Key Performance Indicators (KPIs). Our proposal is provided in the table below.

We assessed a wide range of KPIs and propose the 6 set out below as this combination best reflects the overall performance of NTESMO's current functions. We consider that having more could dilute the focus and clarity of NTESMO's overall performance. We confirm that we can report on the KPIs on either a monthly or quarterly basis, alongside providing an annual summary report to the Commission.

Table 1: Summary of KPI proposal

Function	KPI	Measurement
System Control	Forecast Accuracy	The mean absolute percentage error (MAPE) for the 24 hours ahead rolling forecast and 4 hours ahead rolling forecast for each 30 minute interval across the DKES and Alice Springs systems.
	Secure and Reliable Operations	Percentage of dispatch intervals where the system operates within secure and reliable limits under the System Control Technical Code (SCTC).
	System Black Events	Number of full system black events per year.
Market Operator	Settlement Timeliness	Percentage of preliminary, final, and revision settlement statements issued on time.
	Settlement Accuracy	Number of settlement corrections due to NTESMO process error.
System Control and Market Operator	System Availability	Percentage of time core operational and market systems are available during required operational hours.

Tariff structure

NTESMO currently recovers its costs using a relatively simple $ per kWh consumption metric, which is levied on retailers. The majority of NTESMO's costs, however, do not vary by the quantity of electricity delivered. As such, we are exploring options around changes to the tariff structure. This includes, as occurs for some other system and market operators, potentially recovering some or all NTESMO's costs using a fixed monthly charge applied to each connection point.

Territory Dispatch Engine Update

NTESMO is in the process of implementing a new scheduling and dispatch system in the form of the Territory Dispatch Engine (TDE). The expected go live date is September 2027.

We estimated that the capital costs of implementing the TDE project to be $35.7 million (2024-25 real) in the business case approved by the Commission ahead of the current regulatory period. We initially forecast that capital expenditure would primarily be incurred in the FY2025–27 regulatory period. We are currently assessing whether this profile will need to be amended with a more significant proportion being incurred in the FY2028–32 regulatory period. We will include an updated forecast as part of our regulatory proposal.

In approving the estimated capital expenditure in the FY2025–27 regulatory period the Commission understood this was the best estimate available at the time both in terms of costs and timing. The Commission has stated that it will undertake an ex-post review of actual capital expenditure to confirm that expenditure is prudent and efficient.

Consultation process

Power and Water is undertaking this stakeholder consultation to assist with the development of NTESMO's Regulatory Proposal for the next regulatory period commencing on 1 July 2027. This consultation paper seeks stakeholder views on the questions outlined in the table below.

Table 2: Summary of consultation questions

Section	Consultation Question
Expected Revenue Requirement	1. Do you agree with our proposed opex step changes and the associated value propositions? 2. Do you have any questions or comments regarding the approach taken to forecasting opex? 3. Do you support investment in the system tools project and its proposed value proposition? 4. Is there anything specific you would like to see detailed in our Regulatory Proposal related to forecast revenues, particularly in relation to corporate overheads?
Productivity Factor	5. Do you agree with our current proposal for the FY2028–32 productivity factor? 6. Are there other jurisdictions, or approaches, NTESMO should review to inform its approach to proposing a productivity factor?
Performance Incentives	7. Do you agree with the KPIs we propose to monitor, the indicative targets, and the number of KPIs proposed? 8. Are there any further KPIs you see value in being included in the performance incentive framework?
Accommodating Reform	9. Do you have any questions regarding the impacts on NTESMO arising from the TEM reforms? 10. Do you have any suggestions on how NTESMO can accommodate the reform efficiently? 11. Do you agree with the proposed approach to including reform costs in the Regulatory Proposal?
Tariff Structure	12. What are your preferences for the structure of the tariff? 13. Do you have any concerns about moving from a fully variable charge to recovering some or all NTESMO's costs using a fixed monthly charge applied to each connection point?
Territory Dispatch Engine	14. Do you have any questions on the implementation process and timeline? 15. Do you have any feedback or suggestions as to how we could communicate implementation progress?

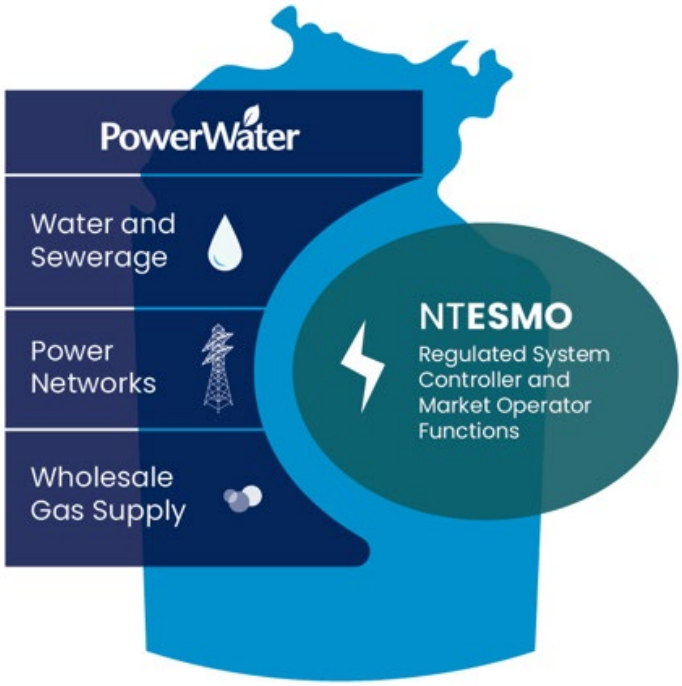
All stakeholders are invited to participate in upcoming face-to-face engagements and provide written submissions on the consultation paper to the market.operator@powerwater.com.au by 16 January 2026.

1. Introduction

1.1. NTESMO's role

Power and Water Corporation (Power and Water) is responsible for undertaking electricity system control and market operator functions in the Northern Territory's distinct electricity systems in accordance with Section 38 of the *Electricity Reform Act 2000* (NT) and the System Control Technical Code (SCTC).[1] These functions are currently performed under the System Control Licence granted to Power and Water. Under the National Electricity Rules (NER), Power and Water's System Control and Market Operator functions are referred to as the Northern Territory Electricity System and Market Operator (NTESMO)[2]. NTESMO is a ring-fenced business unit within Power and Water.

Figure 1.1: NTESMO function ring fenced within Power and Water Corporation



As System Controller, NTESMO plays a critical role in ensuring the reliability and security of the Northern Territory electricity systems in Darwin-Katherine, Alice Springs and Tennant Creek. Its primary responsibility is to ensure the efficient scheduling and dispatch of generating systems to provide sufficient energy supply to securely meet demand. As Market Operator, NTESMO is responsible for facilitating the efficient operation of the electricity market in the Darwin-Katherine Electricity System (DKES).

[1] The three regulated electricity systems that Power and Water is responsible for under its System Control Licence are: Darwin-Katherine Electricity System, Alice Springs Electricity System and Tennant Creek Electricity System.
[2] The National Electricity Rules (NER) refers to the Northern Territory Electricity System and Market Operator (NTESMO) as a collective term for the entity that either controls the operation of the electricity system or administers the market arrangements. The term 'NTESMO' is used in this consultation paper to refer to the system controller and market operator functions that Power and Water is currently licenced to perform under its System Control Licence.

NTESMO carries out its System Control and Market Operator functions through the provision of a series of regulated and unregulated services. This consultation paper relates to the regulated services only, which are currently:

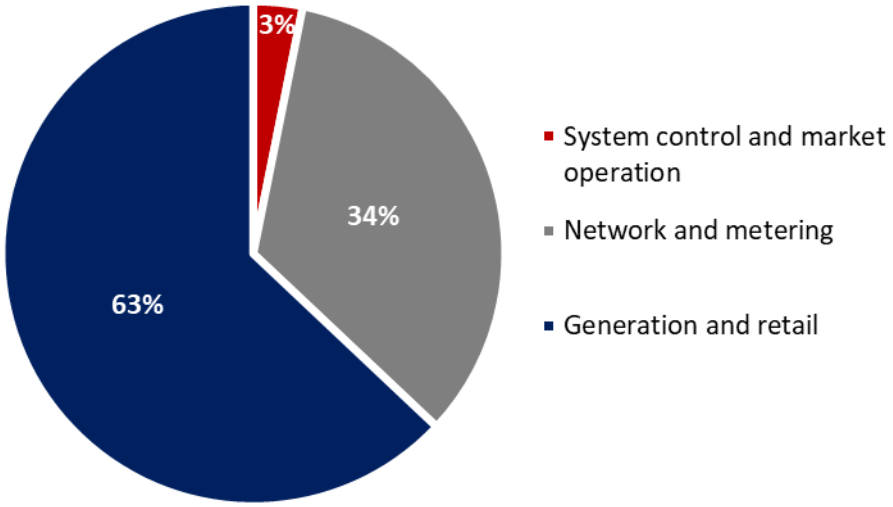
- **Real-time Operations (System Control)** – Monitors and controls the system in near real time including dispatch activities, controlling activities, testing activities and monitoring generation and system participants.
- **Operations Planning (System Control)** – Undertakes short term planning and reporting that assists in providing a secure electricity system, including generator connections, incident reporting, load forecasting and technical compliance, and directions.
- **Power System Evolution (System Control)** – Enhances renewable integration, develops system tools and the Territory Dispatch Engine to support growing renewables and new operational procedures.

  This function also provides forecasting services to allow System Control to make informed real-time operational decisions and manage planned outages to ensure electricity system security. Reliable forecasting enables more efficient scheduling and dispatch of large-scale generators and considers the significant impact of small-scale inverter- based technologies on the electricity system.
- **Market Operations (Market Operator) –** Registers market participants and undertakes analysis on customer energy consumption and generation output to enable retailers and generators to settle their bills. This function also supports market participants in the registration, compliance testing and commercial dispatch processes. This team provides daily generator merit orders to real-time operators based on the offers received from system participants (generators) and ensures dispatch compliance with the issued merit orders.

  Further, the team oversees the publication of market information in accordance with the approved Market Timetable Procedure and publishing daily market data on the web.
- **Rule Development, Technical and Policy Advice (Market Operator) –** Provides policy makers with technical advice on issues relevant to our functions.

NTESMO's regulated functions contribute a relatively small proportion (less than 5%) of electricity supply costs as illustrated by Figure 1.2. The Northern Territory electricity systems and market are undergoing rapid transformation and NTESMO's role is growing in prominence.

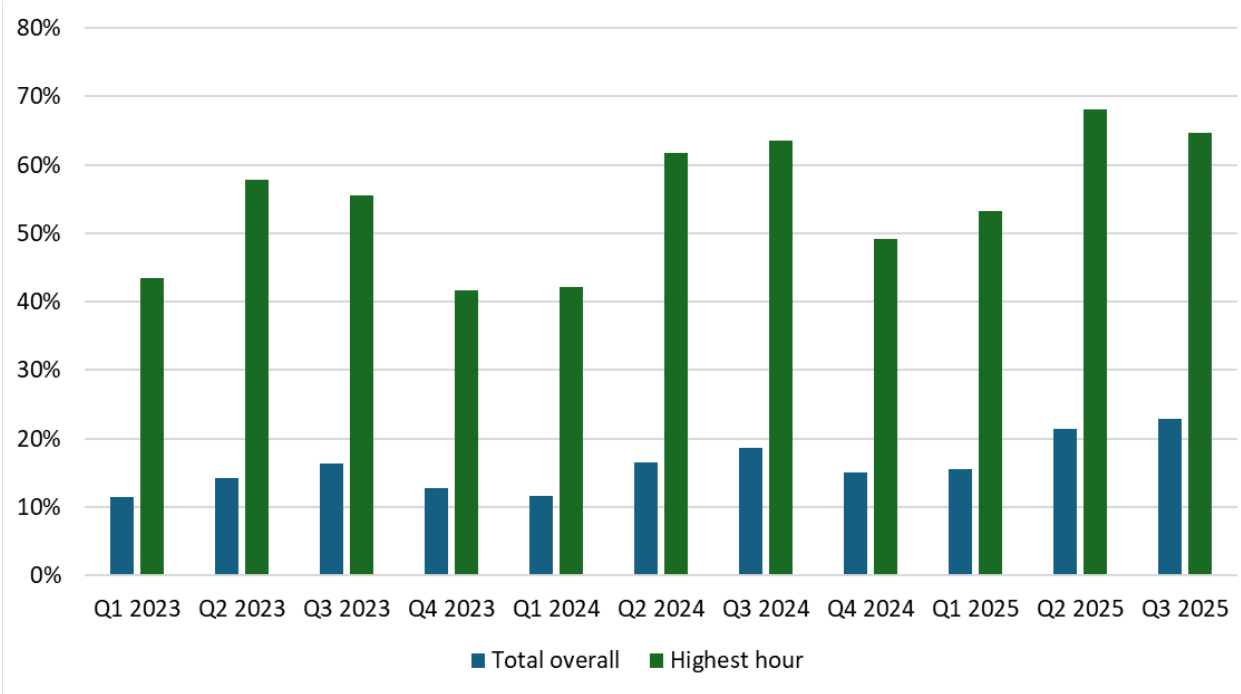
Figure 1.2: Electricity supply cost breakdown for a residential customer, 2025-26



Note: Illustrative breakdown of average cost to supply a residential electricity customer consuming 8,500kWh per year in Darwin-Katherine, Alice Springs and Tennant Creek by supply service component.

The uptake of renewable electricity generation and storage present a significant opportunity to reduce the wholesale cost of electricity generation. As illustrated in Figure 1.3, renewable sources comprise a material and growing proportion of total generation in the Northern Territory's electricity systems and most of the electricity generation during peak periods. However, the scale of the uptake of distributed energy resources and large-scale solar generation are presenting NTESMO with significant operational challenges in relation to managing the reliability and security of the electricity systems under its existing functions.

Figure 1.3: Estimated percentage of generation from renewables, total in quarter and highest hour in quarter (regulated systems)



Note: Renewables include distributed and utility-scale solar PV.

Northern Territory Reforms

The Northern Territory Government has made legislative reforms that will govern the Territory's energy transformation through two Acts:

- *Electricity Legislation Amendment (Market Reform) Act 2025*; and
- *Electricity System and Market Operator (NTESMO) Act 2025*.

The purpose of the Market Reform Act is to '*amend the Electricity Reform Act 2000 to establish new electricity market and governance arrangements for the Territory's major electricity systems*'.[3] Central to this new governance structure is the establishment of NTESMO as a statutory corporation, separating the System Control and Market Operator functions from Power and Water.

The NTESMO Act outlines the overarching framework that NTESMO will operate under as an independent entity. As part of this, NTESMO will be required to carry out central planning and procurement activities, 2 new functions in addition to those it already provides.

The impact of this legislation on NTESMO and its future revenue requirements is significant:

- **NTESMO will be required to transition into a separate, standalone corporation.** As a result of this NTESMO will be required to undertake a number of actions, such as establishing a Board of Directors, appointing a Chief Executive Officer, and directly employing staff. There will be both one-off (upfront) and ongoing costs associated with the establishment and operation of NTESMO as a separate corporation. NTESMO will be required to setup and undertake administrative activities previously provided by Power and Water and allocated to NTESMO as corporate overheads. There will also be a need to procure certain assets, such as IT systems, property, and fleet, that are currently shared across Power and Water's business functions and allocated to NTESMO as corporate capex.
- **NTESMO will play a central role in new electricity market and governance arrangements.** NTESMO will be required to continue to oversee and control the existing systems and wholesale electricity market functions (including performing financial market settlement), and also undertake whole-of-system planning, in relation to the Northern Territory's regulated electricity systems, and procure electricity infrastructure and services, in accordance with investment plans. These reforms aim to address challenges faced by the electricity sector in the Northern Territory and improve the reliability of the system. These changes have been designed, in part, to reduce future whole of system costs (through lower cost generation, network and retail costs), however will directly result in increased expenditure requirements for NTESMO.

For further details on the reform, see Section 5.

The activities and associated expenditure outlined in this consultation paper relate to NTESMO's business-as-usual activities only in the context of the changing operating environment outlined in this paper.

Since the recent passage of legislation within the two electricity reform bills, NTESMO has received confirmation from the Utilities Commission to include expenditure related to the additional activities NTESMO are now required to undertake, and its forthcoming separation from Power and Water, within the Regulatory Proposal for the next regulatory period.

[3] Serial 36 Electricity Legislation Amendment (Market Reform) Bill 2025, pg. 1.

This additional forecast expenditure, and any impacts upon business-as-usual requirements and the current application of the regulatory framework, are not included in this consultation paper. This is due to the short timeframe between the reform bills passing and the publication of this paper and the ongoing development of the detailed reform regulations and market rules. As such, **this consultation is being undertaken based on NTESMO's current structure and activities.** We recognise the significant reforms have been passed into legislation and these will need to be incorporated into our initial Regulatory Proposal.

1.2. Setting regulated charges

Costs incurred by Power and Water in performing NTESMO's regulated functions are recovered through charges approved by the Utilities Commission of the Northern Territory (the Commission).[4] The Commission has the legislative authority to set NTESMO's allowed revenues, and accordingly determine the annual charges that can be recovered by NTESMO from market participants in the Northern Territory for the performance of its functions.[5]

The Commission's regulatory determination sets NTESMO's allowed revenues for the System Control, and the Market Operator functions respectively, for each regulatory year, based on an assessment of its efficient costs. The Commission establishes an indicative charge (in dollars per kilowatt hour) by dividing approved revenue by forecast energy consumption for the applicable region to which the charge applies. Each year, NTESMO then puts forward a pricing proposal seeking the Commission's approval of regulated charges. The approved charges include adjustments for actual energy volumes, amounts for under or over recovery from previous years, and inflation.

The Commission published its FY2028–32 System Control and Market Operator Charges Review Framework and Process document on 8 September 2025. The document sets out the framework, process and timelines for the next review of system control and market operator charges.

The FY2028–32 Regulatory Proposal will set out the forecast expenditure Power and Water expects to incur in performing NTESMO's business-as-usual functions across the next regulatory period from fiscal year (FY) 2028 to 2032 (1 July 2027 to 30 June 2032). The proposal is being prepared in the context of the rapid transformation to the electricity system, market, and governance in the Northern Territory. It will account for the additional NTESMO functions related to planning and procurement that have been introduced, as well as the required separation from Power and Water. The proposal will also account for the wider changes in electricity market and governance arrangements that are to be introduced.

The Commission will assess whether our proposed forecast revenues reflect prudent and efficient costs, and whether our expenditure forecasts and service levels are consistent with statutory obligations and customer expectations. The Commission will then determine the tariff structure and revenue Power and Water will be entitled to receive for NTESMO's regulated activities from FY2028.

While the legislative provisions governing NTESMO's cost recovery do not stipulate a definitive regulatory process and decision-making timeline, the Commission has indicated that it expects the determination process to be completed within 12 months following release, by the Commission, of a valid Regulatory

[4] Under Section 39(1) of the *Electricity Reform Act 2000* (NT), a system controller is entitled to impose and recover charges relating to the operations of System Control.
[5] Section 39(2) of the *Electricity Reform Act 2000* (NT) states that the schedule of charges to be applied for the purpose of section 39(1) is to be approved by the Commission.

Proposal for public consultation. The Commission has requested that NTESMO's initial Regulatory Proposal is submitted in February 2026.

As part of the regulatory determination process, we are committed to engaging openly with stakeholders to ensure our regulatory submission is well informed, evidence based and aligned with customer and industry needs. As such, the purpose of this consultation paper is to seek stakeholder input on the following key elements, intended to be included in NTESMO's FY2028–32 initial Regulatory Proposal:

- NTESMO's expected revenue requirement (for business-as-usual activities.)
- How NTESMO's performance might be measured and incentivised (through Key Performance Indicators).
- How to accommodate recent market and governance legislative reforms.
- An update of the Territory Dispatch Engine project.

All numbers within this paper are presented in real 2024-25 dollars, unless otherwise stated.

1.3. Consultation process

To ensure that stakeholders have an opportunity to contribute to the development of NTESMO's FY2028–32 Regulatory Proposal, an indicative process and timeline for consultation is outlined in Table 1.1.

Table 1.1: Proposed consultation process for NTESMO FY2028–32 Regulatory Proposal development

Milestone	Date
Publication of consultation paper	5 December 2025
Stakeholder workshop	11 December 2025
Submissions due on consultation paper	16 January 2026
Incorporate feedback from consultation and submit Regulatory Proposal to the Commission	27 February 2026
Commission regulatory process and decisions	As determined by the Commission

Stakeholders are encouraged to provide their views on the questions provided. Comments on any other issues relating to the development of NTESMO's proposals are also welcome. Response should be by written submission to the market.operator@powerwater.com.au by 16 January 2026.

Please also identify any information in your submission that you consider to be confidential and provide a separate non-confidential copy that can be published for transparency.

A workshop will be held with stakeholders to discuss the issues raised in this consultation paper on 11 December 2025. If you would like to attend this workshop, please register your interest via email at market.operator@powerwater.com.au.

2. Expected revenue requirement

2.1. Overview

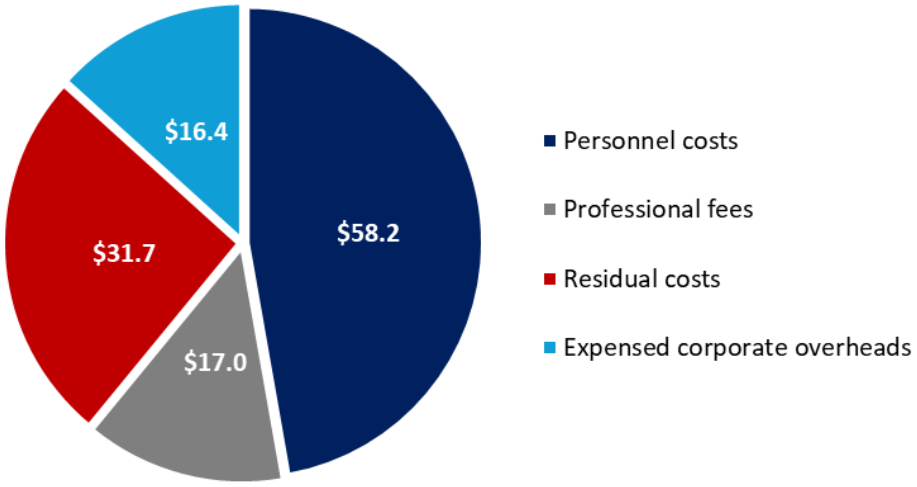
The regulatory framework recognises two types of expenditure. Operating expenditure (opex), which relates to expenditure on non-asset related activities and is recovered on an annual as-incurred basis and capital expenditure (capex), which relates to costs incurred on assets that have a useful life of over one year.

In this section we provide our current forecasts of both opex and capex for the next regulatory period. This is to provide stakeholders with an indication of the scale of forecast expenditure relative to the current regulatory period. We also provide details on the step changes we intend to include in our regulatory proposal and the approximate expenditure associated with these changes. Cost estimates will be finalised for the regulatory proposal.

NTESMO's current forecast for opex is $123.3 million over the FY2028–32 regulatory period, or approximately $24.7 million annually[6], in relation to business-as-usual activities.

As Figure 2.1 shows, personnel costs are the dominant opex category in the next regulatory period, in aggregate for the System Control and Market Operator functions, accounting for 47% of opex. The remaining forecast opex is split between NTESMO's allocation of Power and Water's corporate overheads, residual costs and professional fees.

Figure 2.1: Forecast business-as-usual opex by cost category for FY2028–32 regulatory period ($m, real 2024-25)

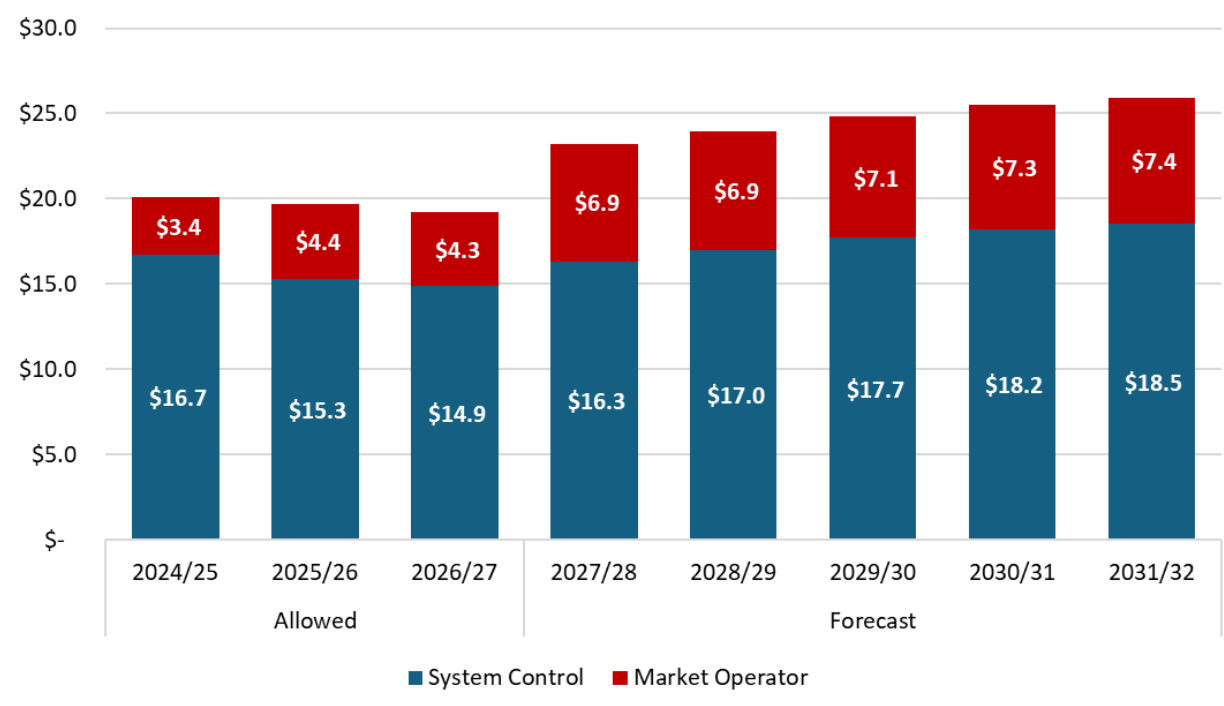


The current annual forecast for the next regulatory period represents a step up from the current regulatory period, where NTESMO has been provided with an opex allowance of $19.7 million per annum on average, as illustrated in Figure 2.2. The underlying cause of this increase is the significant changes to NTESMO's operating environment, as a result of the transition towards a higher share of renewable generation and increased data and processing requirements. The scale and speed of the uptake of distributed energy

[6] These figures do not include a productivity factor (see Section 3).

resources and large-scale solar PV generation and batteries, and their integration into the existing networks and systems has resulted in upward pressure on NTESMO's operational requirements and, in turn, costs.

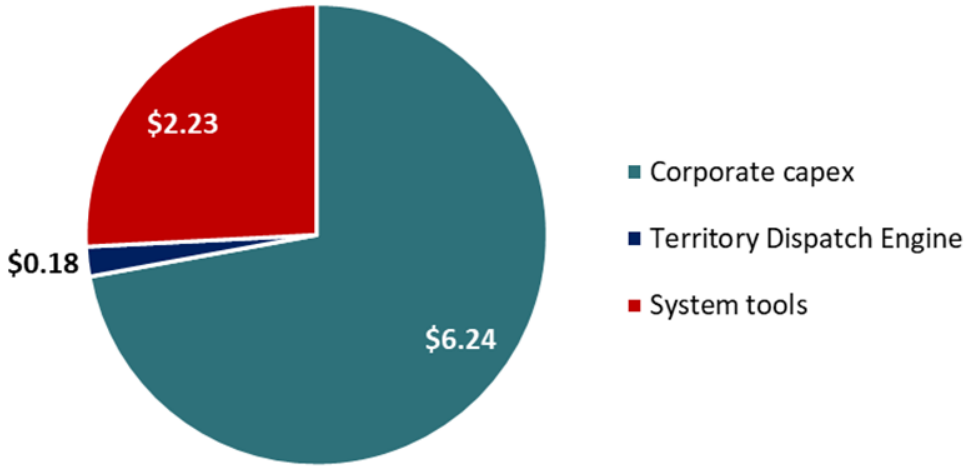
Figure 2.2: Allowed and forecast business-as-usual opex by function ($m, real 2024-25)



Capex is recovered over the life of the asset including depreciation (return of capital) and a return on capital. NTESMO's current capex forecast is $8.7 million over the next regulatory period, in respect of business-as-usual functions. As Figure 2.3 shows, the main driver of expenditure is shared corporate-related investments allocated to NTESMO's functions from Power and Water, accounting for 72% of the forecast.

The remainder of capex relates to the System Control function, with the final year of investment in the Territory Dispatch Engine (2%), approved from the current regulatory period (see Section 7), being incurred alongside the introduction of additional system tools (26%).

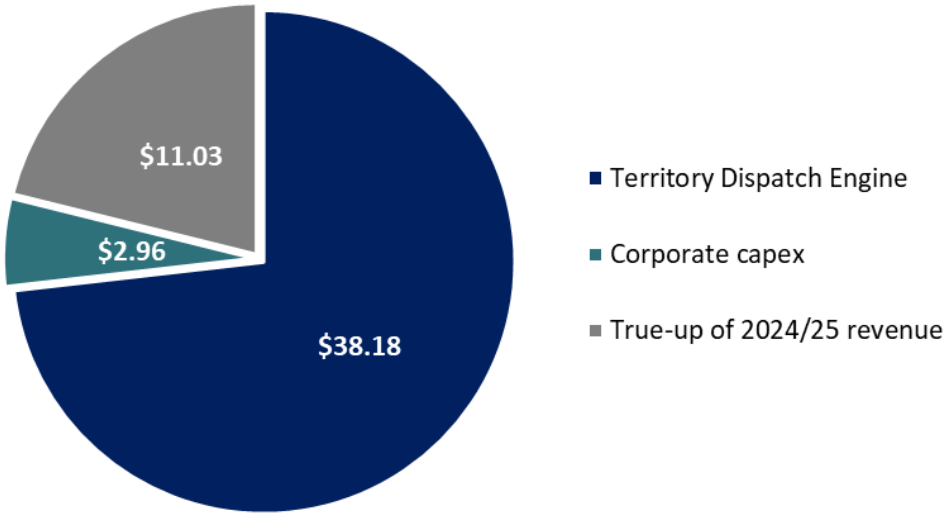
Figure 2.3: Forecast business-as-usual capex by driver for FY2028–32 regulatory period ($m, real 2024-25)



*Note: TDE capex s*hown as approved in the business case, re-profiling of capex between the FY2025–27 regulatory period and the FY 2028–32 regulatory period is expected.

The capex forecast for the next regulatory period is notably lower than that approved for the current regulatory period. For the FY2025–27 period, NTESMO has approval for $52.2 million in capital investments, to be added to and recovered through the Regulatory Asset Base (RAB), as shown in Figure 2.4. This was driven largely by expenditure for the Territory Dispatch Engine, a substantial capital project, along with the true-up associated with a shortfall in 2024-25 revenue being treated as capex for the purposes of cost recovery.

Figure 2.4: Approved capital investments for FY2025–27 regulatory period, by driver ($m, real 2024-25)



Depreciation and return on capital have not been calculated at this stage. A forecast of required annual revenues, and by extension bill impacts from our capex proposal, will be outlined in the initial Regulatory Proposal.

2.2. Operating expenditure

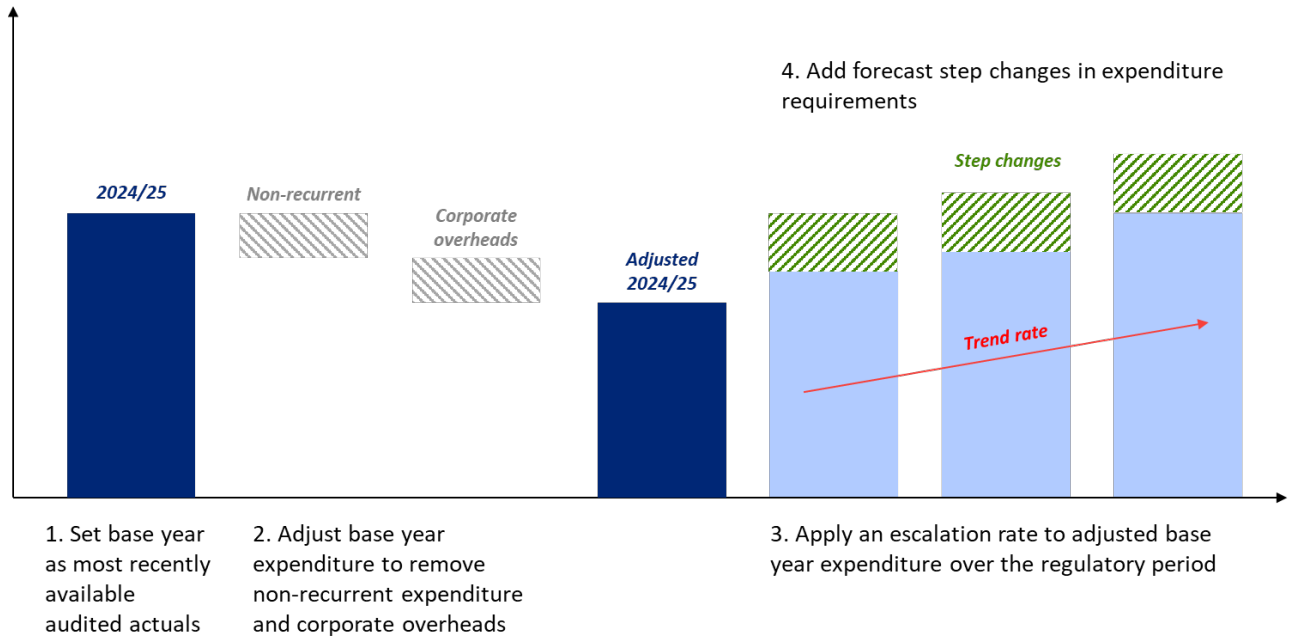
Forecast methodology

As per the Commission's framework, we have continued to forecast operating expenditure for the System Control and Market Operator functions across the four existing cost categories – personnel, professional fees, residual and corporate overheads.

For personnel, professional fees, and residual costs we have retained the base-step-trend approach, as per the Commission's direction, outlined in Figure 2.5. Within the initial Regulatory Proposal, we will include forecast costs related to NTESMO's new central planning and procurement activities across these cost categories. This inclusion will be applied as a step change, given these costs are not included within base year expenditure.

For corporate overheads, the base-step-trend approach is not applied. Rather forecasts of corporate overheads continue to be based on an estimate of Power and Water's total corporate overheads allocated to NTESMO. As per the approach for the current regulatory period, these costs are fully removed from base year expenditure and included within overall opex as a specific forecast.

Figure 2.5: Summary of base-step-trend approach



Base year expenditure

The base year for opex forecasting is to be set as the most recently available audited annual expenditure, which is the 2024-25 financial year.

The table below outlines total base year expenditure for the System Control and Market Operator functions against the Commission's approved revenue requirement. While corporate overheads are removed as a base year adjustment, as part of the base-step-trend approach, we have retained these within the base year in Table 2.1 for the purposes of comparison.

Table 2.1 Base Year Expenditure (inc. Corporate Overheads) vs. Approved Revenue Requirement ($m, real 2024-25)

	Base Year [A]	Approved Revenue [B]	Difference [A-B]
System Control	12.17	15.93	-3.46
Market Operator	7.28	4.15	3.13

When compared to the approved revenue requirement for opex in FY2025, NTESMO underspent by 3% across both functions in aggregate. The System Control function notionally underspent on its approved revenues by ~25%. This underspend, however, has been offset by a notional Market Operator overspend (~75%).

This notional overspend and underspend has largely been driven by a reassessment of the split of personnel costs between NTESMO's functions, to reflect business activities more accurately. We have taken the time spent by each individual across NTESMO's activities during the base year and used these proportions to allocate total annual salaries (including superannuation) across the functions. The total amount of salary allocated to each activity has then been used to revise the allocation of personnel costs in the base year. Whilst we consider this to result in a better reflection of actual time spent by personnel across NTESMO's System Control and Market Operator functions, it has resulted in a notable shift in personnel costs from the former to the latter.

Step changes

Professional fees

Professional fees relate to payments to external parties to procure specialist technical advice and services that are not provided by internal personnel. An overview of the current estimated annual value of each step change, to be added to adjusted base year expenditure, is provided in the table below.

Table 2.2: Professional Fees Step Changes ($m, real 2024-25)

Step change	2027/28	2028/29	2029/30	2030/31	2031/32
AEMO Market Settlement and Transfer Solution	0.06	0.06	0.07	0.07	0.07
Territory Dispatch Engine maintenance	-	-	0.55	0.55	0.55
Existing system tools maintenance	0.50	0.45	0.40	0.45	0.40
New system tools maintenance	0.75	0.45	0.25	0.30	0.25
Review of NTESMO codes, procedures and guidelines	0.30	0.30	0.30	0.30	0.30
Additional engineering resources for system modelling, planning and incident investigations	0.18	0.18	0.18	0.18	0.18
Total	**1.79**	**1.44**	**1.75**	**1.85**	**1.75**

NTESMO is currently forecasting six step changes, related to business-as-usual activities, to be applied to professional fees across the next regulatory period:

- **AEMO Market Settlement and Transfer Solution –** Within NTESMO's approved FY2025–27 Regulatory Proposal a step change was included in relation to Market Interaction Enablement ongoing costs. This involved NTESMO utilising the Australian Energy Market Operator's (AEMO) Market Settlement and Transfer Solution (MSATS) system and processes to facilitate B2B transactions between market participants in the Northern Territory electricity market, such as ordering a connection or disconnection, transferring metering data to retailers and transferring customers between retailers. The system went live on 1 July 2025. MSATS adoption is supported by a Communication Guideline published by NTESMO detailing the MSATS procedures for the Northern Territory.

  Looking forward, the Market Operator is anticipated to need to update the Communication Guidelines twice per year, in consultation with market participants, to avoid material divergence with the National Electricity Market (NEM) MSATS Procedures that might otherwise affect the operation of MSATS in the Northern Territory (for example, requiring a Territory-specific version of MSATS to be maintained). NTESMO will continue to work with AEMO to understand changes to the NEM MSATS Procedures as they arise, and whether changes are required to NTESMO's Communications Guideline. As such, we have included a step change to professional fees in relation to the administrative charges that will be incurred as a result of AEMO providing this ongoing support. There is also an associated step change applied to residual costs.

- **Territory Dispatch Engine Maintenance –** The Commission's approval of NTESMO's FY2025–27 Regulatory Proposal included capital expenditure related to the Territory Dispatch Engine (TDE) project. The TDE requires regular maintenance, such as updating software libraries and ensuring

on-going cyber security compliance, to maintain overall system security and reliability. These on-going maintenance costs were not included in the FY2025–27 Regulatory Proposal and have, therefore, been included as a step change in the next regulatory period. There is also an associated step change applied to residual costs.

- **Existing System Tools Maintenance -** The Commission's approval of NTESMO's FY2025–27 Regulatory Proposal also included capital expenditure related to the Transitional Tools Stage 2 project. These tools are not transitional in nature; rather, they enable and support the managed transition to a new energy landscape by providing enduring capabilities for forecasting, dispatch, and real-time system monitoring.

  The transitional tools are essential for NTESMO to keep the power system reliable and secure as more solar and battery resources are added and provide critical inputs into the TDE. These tools rely on accurate data and up-to-date settings to work properly. Without regular maintenance, such as updating parameters, databases, and documentation, refinements to algorithms and models, and optimisation; the tools could become less accurate, which increases the risk of adverse system security and reliability events. However, the associated costs were not included in the FY2025–27 Regulatory Proposal and have, therefore, been included as a step change in the next regulatory period.

  The following tools are either implemented or currently under development during the current regulatory period and will remain critical to NTESMO's ability to operate the evolving power system effectively and cost-efficiently.

  - **Capacity Forecast Dispatch System** provides system operators with real-time and near-term visibility of generation output across all facilities and issues dispatch set points to utility-scale photovoltaic (PV) generators while maintaining ramp rate requirements. It aggregates generator-provided forecasts at both regional and system levels to support real-time control. Future enhancements include functionality to monitor applicable system constraints, strengthening NTESMO's ability to maintain system security and reliability as the power system evolves.
  - **Contingency Frequency Control Ancillary Services Tool** enables rapid assessment and response to unexpected system events by continuously evaluating frequency control capabilities against contingency scenarios. It uses real-time data to identify shortfalls and alert operators, supporting timely intervention to maintain system stability.
  - **Proportional Energy Dispatch Tool** ensures equitable and rule-based allocation of generation output among participating facilities while maintaining critical system constraints such as transmission line limits and minimum stable generation levels. It incorporates automation to enhance dispatch efficiency, system security and reliability by reducing manual intervention and improving responsiveness. The tool strengthens NTESMO's capability to manage increasing levels of renewable generation and battery storage in a cost-effective manner and supports future system development by optimising dispatch outcomes in compliance with technical standards and operational requirements.
  - **Real-Time System Security Monitoring Tool** provides continuous monitoring of critical system security parameters, including voltage profiles, thermal limits, and dynamic stability indicators. It supports the formulation and validation of operational constraints and enables testing against historical events and future operational scenarios. The tool plays a key role in managing the transition to a high inverter-based system, where reduced fault

current requires careful coordination of protection systems and assessment of system behaviour during disturbances, including voltage excursions. By delivering automated alerts and scenario-based insights, it helps operators maintain compliance with security standards and proactively mitigate risks to system reliability.

    - **Forecasting Tool** enables real-time forecasting up to two days ahead with a five-minute resolution and operational planning forecasts up to 14 days ahead. It leverages actual system data and forecast inputs from multiple weather service providers and the Energy Management System (EMS), applying sophisticated machine learning models to improve accuracy. The tool currently provides behind-the-meter forecasts, net demand forecasts, and gross demand forecasts. Relevant forecasts are also published on the NTESMO platform to support market participants and system security objectives.

- **New System Tools Maintenance** – NTESMO proposes to develop several new system tools, detailed further in Section 2.3. This step change relates to the cost of ongoing maintenance and support requirements related to these tools.

  As with the existing system tools, maintenance is required to ensure the new system tools also continue to perform efficiently and remain aligned with system requirements, as they evolve. This will involve the same range of activities as above for NTESMO's existing system tools.

- **Review of NTESMO codes, procedures and guidelines –** Part of NTESMO's Market Operator function is to regularly review and update existing codes, procedures and guidelines. Historically, NTESMO's codes, procedures and guidelines have been developed on an as-needs basis and resourcing has not been allocated for these documents to be consistently reviewed or updated. This has adversely resulted in:

    - scheduled document reviews not able to be done fulsomely or with the level of industry engagement warranted
    - documents without prescribed review dates never being reviewed and becoming out of date in terms of content and cross-references
    - inconsistent document titles and templates developing over time
    - no clear structure to cataloguing of the documents into System Control and Market Operator functions.

  To address these issues and reflecting the increasing volume and complexity of code, procedure and guideline documentation owing to the significant shift in the topology of the electricity systems, NTESMO is seeking to implement a structured, ongoing review process. This will consist of a proactive process that will enable us to engage with participants more regularly regarding challenges faced in relation to existing codes, procedures, and guidelines. This step change provides for expenditure on industry experts to assist in the development of the changes, as well as legal advice where required.

- **Additional engineering resources for system modelling, planning and incident investigations** – NTESMO's Operations Planning team is responsible for power system reliability and security across the Northern Territory's regulated electricity systems. Additional recently commissioned renewables generation, unprecedented minimum demands, and increasing constraints on our ageing electricity infrastructure are posing higher operational risks. Addressing these requires increased ongoing SCTC compliance assessments, deeper data analysis and power system

modelling. New technology requires additional risk assessment and planning, updated operational procedures and more involved incident investigations.

This step change provides for an increase of $50,000 over System Control's historic professional fees budget reflecting the above increased need, in the context of an outlier low expenditure year in the base year ($130,000 below allowance in 2024-25) due to postponement of periodic voltage management studies and Essential System Services gap analysis to focus on immediate system support requirements. Without this proposed step change, System Control's professional fees budget would be reduced by approximately one-quarter from its historic average requirement.

Residual costs

Residual costs relate to ICT services and training. An overview of the current estimated annual value of each step change, to be added to adjusted base year expenditure, is provided in the table below.

Table 2.3: Residual Costs Step Changes ($m, real 2024-25)

Step change	2027/28	2028/29	2029/30	2030/31	2031/32
Real-time system support services	1.63	1.63	1.63	1.63	1.63
AEMO Market Settlement and Transfer Solution	0.24	0.25	0.25	0.26	0.27
Territory Dispatch Engine licensing and support	1.95	2.78	2.88	3.02	3.23
Total	**3.82**	**4.66**	**4.76**	**4.91**	**5.13**

NTESMO is currently forecasting three step changes, related to business-as-usual activities, to be applied to residual costs across the next regulatory period:

- **Real-time Systems Support Services –** Operational Technology (OT) is the hardware and software systems that monitor and control physical processes and equipment. For NTESMO, OT systems such as Supervisory Control and Data Acquisition and Energy Management, are critical to ensure the safe, reliable, and efficient operation of the power system.

  As for IT systems, users of OT systems require support such as technical advice and troubleshooting. To deliver on its obligations, NTESMO requires a mix of 'standard' business hours OT support services for important but non-critical systems and 'priority' round the clock OT support services for critical real time systems.

  At present, NTESMO is recovering costs related to standard OT support services only. For the next regulatory period, NTESMO requires additional funding for priority OT support services for its real-time systems, which is currently being provided to only a limited extent by Power and Water's internal OT team.

  Under provision of priority OT support services represents a risk of more frequent and extended outages of the real time systems.

- **AEMO Market Settlement and Transfer Solution –** As per NTESMO's approved FY2025–27 Regulatory Proposal, a step change was included in relation to Market Interaction Enablement ongoing costs. The Market Interactions Enablement project was for the adoption of AEMO's MSATS system and processes. This is a service provision arrangement with AEMO, and this step change represented their annual charge specific to the Market Operator previously approved by the Commission, in its final decision for the current regulatory period, at an amount of $125,000 per annum.

  However, this step change was to be applied from 2025-26 onwards as the system did not go live until 1 July 2025. As such, it is not included in the 2024-25 audited actuals (base year) and its addition as a step change is, therefore, required for the next regulatory period. Since the previous regulatory proposal, which was prepared before the system became operational, related costs have increased. As a result, the annual amount included within residual costs related to the annual fees and licence fees will be higher than the previously approved step change. There is also an associated step change applied to professional fees.

- **Territory Dispatch Engine Licensing and Support –** As the TDE is planned to commence operations in the next regulatory period, ongoing residual costs associated with the TDE were not included in the FY2025–27 Regulatory Proposal (but were included in the business case submitted for the Commission's approval). Funding for TDE ongoing residual costs will commence in the next regulatory period and will be included in the FY2028–32 Regulatory Proposal.

  The TDE ongoing residual expenditure relates to:

  - Software and integration support to keep the system running smoothly and connected to other essential tools; and updates, fixes and adjustments are made.
  - Software licensing costs to maintain access to the specialised programs that power the TDE, such as forecasting and dispatch software.
  - Internal support helpdesk to provide timely assistance to operators and planners when issues arise.
  - Hardware maintenance and licensing to keep the physical equipment that hosts the TDE in good working order.

  A breakdown of the specific licensing and support cost components within the overall step change is provided in Table 2.4.

Table 2.4: Territory Dispatch Engine Licensing and Support ($m, real 2024-25)

Step change	2027/28	2028/29	2029/30	2030/31	2031/32
Software and Integration Support	1.09	1.17	1.28	1.44	1.66
Dispatch Modelling License and Support	0.62	0.60	0.59	0.57	0.56
Dispatch Modelling additional core license	0.10	0.10	0.09	0.09	0.09
Internal Support Helpdesk	0.14	0.15	0.17	0.19	0.22
Hardware maintenance and licensing	-	0.77	0.75	0.73	0.71
Total	**1.95**	**2.78**	**2.88**	**3.02**	**3.23**

Personnel costs

Personnel expenditure is the largest cost category, representing more than half of our forecast opex. This includes Power and Water employees, and undergraduates and graduates sourced through contract arrangements with Charles Darwin University. It does not include employees in our corporate functions, which are included in the corporate overhead category.

NTESMO is not currently forecasting any step changes in personnel costs related to NTESMO's existing functions. There will likely be an inclusion of personnel cost step changes in the initial Regulatory Proposal, as we incorporate forecast expenditure related to the new central planning and procurement activities NTESMO will be required to undertake in the future.

Trend adjustments

Trend adjustments are factors that are applied to account for expected input cost increases at a rate different to inflation. A trend rate is applied to personnel costs only. Calculation of the rate will continue to be undertaken using the approach to labour cost escalation that was applied in the Regulatory Proposal for FY2025–27. For the purposes of this consultation paper, Wage Price Index inputs have been estimated using a Department of Treasury and Finance value for the June 2025 quarter of 3.30% as a placeholder across the five-year period.

2.3. Capital expenditure

This sub-section provides stakeholders with an overview of the two capital projects we are currently proposing to deliver in the FY2028–32 regulatory period and the associated costs. Both projects relate to Power System Evolution, within the System Control function. The table below sets out forecast capex by regulatory year.

Table 2.5: Forecast capex by regulatory year ($m, real 2024-25)

Capital project	2027/28	2028/29	2029/30	2030/31	2031/32
Territory Dispatch Engine	0.18	-	-	-	-
System Tools	2.05	0.18	-	-	-
Total	**2.23**	**0.18**	**-**	**-**	**-**

Note: TDE capex shown as approved in the business case, re-profiling of capex between the FY2025–27 regulatory period and the FY2028–32 regulatory period is expected.

Territory Dispatch Engine

The Commission approved our forecast expenditure for the Territory Dispatch Engine (TDE) in its Final Decision for the current regulatory period. The Commission reviewed the Business Case for the project and was satisfied that the TDE was justified, relevant, and needed for NTESMO to continue to undertake its System Control functions. As per the Business Case, there is forecast expenditure for the TDE in the first year of the next regulatory period (FY2027-28). We anticipate that there will be some re-profiling of the capex associated with this project.

Further information on the progress of the TDE project is discussed in Section 7.

System tools

The Northern Territory power system is undergoing a significant transformation driven by a changing generation mix, including increasing penetration of utility-scale solar PV generation, battery energy storage systems and distributed inverter-based resources. This transition is reducing the availability of essential system services—such as inertia and fault current—that were previously inherent by-products of synchronous generation. As these natural stabilising characteristics decline, new operational requirements have emerged to maintain system security, reliability and compliance with technical standards.

During the FY2028–32 regulatory period, we are looking to undertake a targeted expansion of further system tools, including the investment in the following:

- **Solar Forecasting Uncertainty Tool –** This system tool would enable an aggregated third-party firming service to address solar capacity shortfalls during cloud incursions that are not forecast, called the Solar Forecast Uncertainty Reserve Margin (SFURM).

  At present, strict forecasting accuracy requirements are imposed under the Network Technical Code for all generators. However, solar generators have been unable to meet the Automatic Access Standard requirements for capacity forecasting without also using expensive co-located batteries or temporary derogations, via an individual third-party firming service.

  SFURM is a proposed more efficient alternative to the forecast accuracy requirements that will take advantage of regional diversity in solar output to allow a lower aggregate level of reserves to be maintained while still ensuring the solar capacity shortfalls are appropriately addressed and system security is not compromised. A method is being trialled in the current regulatory period, and we plan on developing the tool in the next regulatory period to enable its business-as-usual implementation.

- **Generation Reserve Monitoring Module –** Reserve monitoring is a critical capability that tracks the reserve capacity of online generating units, to maintain operational system security and meet NTESMOs obligations under the Secure System Guidelines.

  Reserve monitoring provides real-time visibility into operating reserves (spinning reserve), non-spinning, and frequency regulation (up/down) across the network. It is a critical capability that supports NTESMO to respond to unexpected events such as generator outages, sudden load changes and cloud cover affecting solar generation.

  The objective of this tool is to replace the existing collection of calculations and tools and provide a capability that better aligns with regulatory changes, while reducing risks. The current reserve monitoring methodology is prone to errors, leading to increased delivered energy costs and costly emergency actions, such as dispatching reserves at high cost or implementing load shedding.

  Improved reserve monitoring through enablement of the Generation Reserve Monitoring module on the EMS will ensure that adequate reserves are maintained to support system stability during unexpected events, reducing the likelihood of frequency excursions or load shedding; and optimise resource utilisation by identifying shortfalls early, reducing reliance on costly emergency dispatch.

- **Digital Lifecycle Management Tool** – Digital systems have a defined lifecycle, from planning and commissioning through to monitoring, maintenance, and retirement. Digital lifecycle management is the practical processes, and structured approaches to help operators and technical teams effectively manage their systems.

  Within this framework, we are seeking to develop an application which allows NTESMO to plan for and operate its growing number of systems, including overseeing changes and managing engagement with vendors. The tool will include a web-based system for operators and planners to register issues, bugs and other logs related to NTESMO's systems for action by NTESMO's Power System Evolution team and external vendors. The Tool will assist to ensure NTESMO's applications are fit-for-purpose and the requirement for additional capex into systems is minimised.

- **Battery Information Capacity Tool** – The tool will provide visual information on aggregated utility-scale battery capacity and display an energy forecast (in MWh) derived from the existing dispatch data (MW) and integrates this information into NTESMO's generator summary page to support generator dispatch and operational decision-making.

  The Battery Information Capacity Tool will embed the functionality and capabilities of multiple energy storage resources within the Automatic Generation Control system. It will leverage renewable energy source models to provide key information, including state of charge, energy capacity of the batteries, and the percentage of available energy in the storage system. The benefits of the module are improved resource utilisation through battery optimisation and reduced solar curtailment.

- **Renewable Energy Model –** The Renewable Energy Model will introduce a robust framework that enables NTESMO operators to group renewable energy sources and distribute generation setpoints equitably among resources. This functionality is critical for optimising renewable generation while maintaining system reliability and operational efficiency. The tool will support dynamic, real-time dispatch of solar, battery, and hybrid resources and will integrate with the Supervisory Control and Data Acquisition and Automatic Generation Control systems to ensure proportional adjustments across all resources, respecting network constraints and reserve requirements. The benefits of the model are improved resource utilisation through reduced solar curtailment.

There is also an associated requirement for opex to maintain these new tools on an ongoing basis. This has been included as a step change within professional fees, as detailed above.

2.4. Corporate overheads

NTESMO currently operates within the Core Operations business unit at Power and Water. Corporate overheads are shared costs within Power and Water that are not wholly and exclusively associated with a single business unit. NTESMO incurs two types of shared costs:

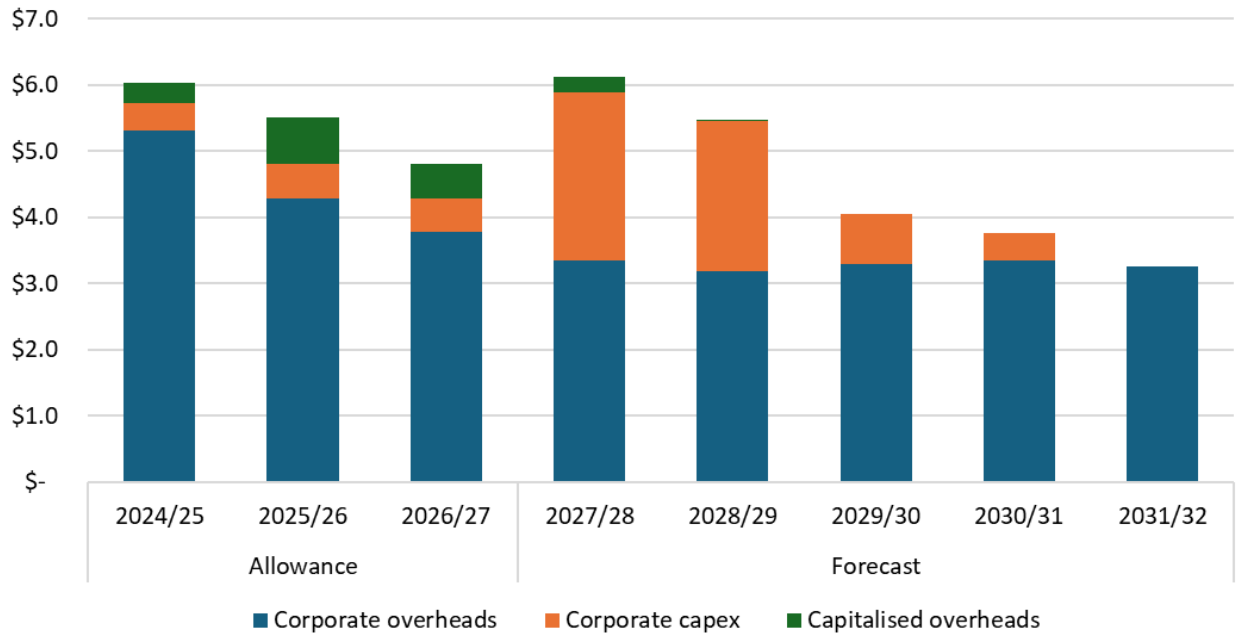
- **Corporate overheads –** These are shared costs that relate to administrative support functions, such as financial services, billing, and human resource management, that are provided by Power and Water to all operational business units. Costs are allocated and then either expensed through opex or capitalised, using Australian Accounting Standards (consistent with the approach adopted for the AER in relation to Power and Water's regulated electricity network).
- **Corporate capex –** NTESMO also incurs capex on corporate, non-network assets that are shared across Power and Water's business functions, including ICT systems, corporate property and fleet.

As per the current regulatory period, overheads have continued to be allocated to each business unit within Power and Water in accordance with the AER approved Cost Allocation Methodology (CAM), which is based on using an appropriate causal allocator. The resulting cost allocation to the Core Operation business unit is then further allocated to NTESMO's functions using the same Core Operations CAM as used in the FY2025–27 Regulatory Proposal.

Figure 2.6 illustrates the forecast allocation for the next regulatory period, based on Power and Water's central forecasts, against NTESMO's approved allowances for the current period. NTESMO is currently expected to be allocated $22.7 million over the FY2028–32 regulatory period, or approximately $4.5 million annually. This represents a decrease from the current period, where NTESMO have an approved allocation of $5.4 million per annum on average.

As shown in the figure below, NTESMO is forecast to be allocated notable corporate capex in the first two years of the next period to be recovered via addition to the RAB. This is primarily due to a large-scale programme of works being undertaken that is designed to bring all Power and Water operations into a single site in Darwin.

Figure 2.6: Allowed and forecast corporate overheads ($m, real 2024-25)



Power and Water acknowledges that the corporate overhead allocations to both opex and capex require review in the context of the recently legislated electricity reforms, ahead of submission of the initial Regulatory Proposal. This allocation however represents an evidence-based cost of NTESMO's future corporate functions post-separation. This consultation paper was prepared on a business-as-usual basis and, as such, the impacts of the reforms on existing expenditure have not yet been fully examined.

Going forward, however, NTESMO may need to replace the provision of the services and shared assets currently provided by Power and Water and incurred as corporate overheads.

2.5. Revenue smoothing

The Commission has provided the option for NTESMO to apply smoothing if the profile of revenue requirements over the FY2028–32 regulatory period is unduly lumpy.

We have not yet determined whether we shall propose the application of revenue smoothing, noting this was not applied in the current regulatory period. We will outline our preferred position in our Regulatory Proposal submission.

Section 2 – Questions for stakeholders

1. Do you agree with our proposed opex step changes and the associated value propositions?
2. Do you have any questions or comments regarding the approach taken to forecasting opex?
3. Do you support investment in the System Tools project and its proposed value proposition?
4. Is there anything specific you would like to see detailed in our Regulatory Proposal related to forecast revenues, particularly in relation to Corporate Overheads?

3. Productivity factor

The Commission requires NTESMO to propose an explicit productivity factor to be applied to operating expenditure. The Commission's regulatory framework for opex includes an ex-ante allowance and NTESMO bears any difference against outturn costs. A productivity factor is to be applied to the opex allowance as a further incentive for efficiency. The productivity factor is often represented in regulatory determinations through a reduction to the inflation indexation that applies to annual operating expenditure allowances (i.e., CPI – X). For instance:

Annual Allowed Opex Adjustment = Inflation (CPI) – Productivity Factor (X)

Use of a productivity factor is a relatively recent feature of the regulatory framework applied to NTESMO, introduced in the Commission's September 2024 Decision Paper. It was set as zero for the FY2025–27 regulatory period. We are still considering the scope for an efficiency factor and have outlined our current proposal in this section.

3.1. What is meant by productivity?

In the context of economic regulation, productivity refers to the efficiency with which an organisation converts inputs (i.e., labour, technology, and systems) into outputs (i.e., services it delivers). Over time, a productive organisation is expected to improve how efficiently it delivers the same services. In other words, achieve more output for each unit of input, or to deliver the same output at lower cost. This is a feature of many regulatory frameworks especially where the regulated entity is a monopoly.

A productivity factor incorporated into a regulatory determination provides a mechanism for the regulator to encourage continuous improvement. It recognises that, in the absence of external change, an efficient business should become incrementally better at performing the same functions over time.

However, productivity does not imply that costs should never increase. Where there are significant reforms or structural changes, such as new regulatory obligations, technological transitions, or expanded functions, these typically constitute step changes in costs. In such cases, higher expenditure can still be consistent with efficiency if a regulated organisation is required to deliver new or enhanced outputs. The productivity factor is, therefore, not intended to offset justified increases in costs arising from new responsibilities or evolving needs of the Northern Territory electricity system.

There is no single, uniform approach to setting a productivity rate. Different regulators and jurisdictions apply various methodologies that reflect their specific market circumstances, data availability, and regulatory objectives. The rate should ultimately represent a balanced judgment between providing incentives for efficiency and ensuring that service quality and reliability are not compromised.

3.2. Approaches taken in other jurisdictions

In considering a proposed rate for the productivity factor, we have examined the approach taken to other market and system operators, of a broadly comparable scale, as well as the approaches taken to other regulated entities in the Australian electricity sector. A summary is outlined in Table 3.1.

Where a productivity factor is currently applied, the rate ranges from 0.3% – 0.6% per annum. In the case of AEMO, where no productivity factor is applied, the view was that AEMO is responsible for delivering

system-wide outcomes, which are more important than achieving efficiencies.[7] For further details on each comparator, see Annex A.

Table 3.1: Summary of productivity factor approaches in other jurisdictions

Comparator	Jurisdiction	Function	Productivity Factor	Current Rate	Opex, annual ($AUD, mil)
SEMO	Ireland and Northern Ireland	Market Operator	Yes	0.3%	40.2
SONI	Northern Ireland	System Operator	Yes	0.6%	31.8
EirGrid	Ireland	System Operator	Yes	0.4%	450.8
AEMO	Australia	Market Operator	No	N/A	N/A
Transpower	New Zealand	System Operator	Yes	0.5%	24.7
DNSPs	Australia	Network Operator	Yes	0.5%	Varies

3.3. NTESMO proposal

In determining an appropriate productivity factor for the FY2028–32 regulatory control period, NTESMO has assessed the scope for achieving ongoing efficiency gains within the operational context faced, while maintaining the reliability and integrity of system operations.

The scale of the Northern Territory electricity market and NTESMO

NTESMO operates within a small jurisdictional market and at a smaller scale in comparison to system and market operators elsewhere. This is most easily demonstrated through the materially higher opex allowances the comparator entities have in comparison to NTESMO (see Table 3.1). The electricity systems NTESMO operates are also distinct and dispersed. This limits the scope for achieving economies of scale in operations and, by extension, some of the cost efficiencies available to larger market operators.

In addition, as an asset-light organisation, NTESMO relies primarily on information technology and skilled labour to deliver its statutory functions. This structure provides limited opportunity for input substitution, or for capturing productivity gains through traditional capital-labour trade-offs. Consequently, the scope for ongoing productivity growth is more moderate than for more asset-intensive entities, such as DNSPs.

[7] ERA (2024), *Australian Energy Market Operator's AR6 second in-period allowable revenue and forecast capital expenditure proposal*, Final determination, 28 June, p. 32.

Changing operating environment

NTESMO's operating environment is currently undergoing significant change, namely a transition towards a higher share of renewable generation and storage. These factors are structural in nature, increasing the need for new systems, enhanced data management, and greater analytical capability to maintain compliance and system security. This evolution in NTESMO's operating environment places pressures on NTESMO's operational requirements and, in turn, impacts upon costs.

Northern Territory reforms

The recently passed legislative reforms places NTESMO at the centre of a new governance structure in the Northern Territory electricity sector. As a result of this legislation, NTESMO is required to establish itself as a statutory corporation, separate from Power and Water, and undertake new market arrangements and processes. In particular, the existing SCTC and NER, which NTESMO currently operates in accordance with, will be either replaced or amended as a result of new TEM rules. Most notably, NTESMO will be required to undertake whole-of-system planning, in relation to the Northern Territory's regulated electricity systems, and procure electricity infrastructure and services, in accordance with investment plans.

The transition into a separate, standalone corporation and undertaking of central planning and procurement, will result in significant changes to both NTESMO's structure and operational approach, as well as expenditure requirements. These changes will be felt most notably over the next regulatory period, as the reforms begin to come into effect.

Proposal

We propose a productivity factor of zero (0%) for NTESMO for the FY2028–32 regulatory period. The changing operating environment and recent legislatively reforms are resulting in a significant shift in NTESMO's structure and operational requirements. As noted above, a productivity factor represents the notion that, in the absence of external change, a business should become more efficient in performing the same functions over time. We consider there to be limited scope for ongoing productivity gains within NTESMO's opex at present, as a result of the notable external changes currently faced.

We consider a non-zero productivity factor may be more appropriate in the subsequent regulatory period (i.e., FY2033-37), when the Northern Territory market and regulations and NTESMO's operating environment are not in a state of such transformation and reform. During the subsequent regulatory period the benefits of the TDE, which should become operational in FY2028–32, may also be realised.

Section 3 – Questions for stakeholders

5. Do you agree with our current proposal for the FY2028–32 productivity factor?
6. Are there any other jurisdictions, or approaches, NTESMO should review to inform our approach to proposing a productivity factor?

4. Performance incentives

In line with its previous decision to implement performance incentives for monitoring NTESMO, the Commission has requested that, within its Regulatory Proposal, NTESMO propose a set of Key Performance Indicators (KPIs) and advise on:

1. how data for the KPIs would be collected and verified
2. how performance would be monitored
3. proposed reporting timeframes.

In this section, we propose a set of potential indicators for discussion, along with high-level details regarding how measurement will be approached and potential reporting timeframes.

Going forward, NTESMO will have to undertake additional functions, namely central planning and procurement. At this stage, however, the proposal for performance indicators relates to existing functions only, due to the need to first integrate these new measures into NTESMO's business-as-usual operations.

4.1. Key Performance Indicators

We consider that KPIs should provide a concise yet comprehensive picture of performance across NTESMO's Market Operator and System Control functions. They should also measure things within NTESMO's control. We propose a balanced suite of indicators that span NTESMO's key activities and outputs, with a particular focus on the quality and consistency of aspects of service delivery NTESMO controls.

NTESMO is responsible for undertaking electricity system control and market operations. The core purpose of the Market Operator function is to administer the Northern Territory Electricity Market in an efficient and transparent manner. In parallel, the System Control function is focused on the secure, reliable, and efficient operation of the regulated electricity systems in the Northern Territory. The KPIs proposed provide the Commission and other stakeholders with a clear and measurable overview of NTESMO's performance in delivering these services on a day-to-day basis. Specifically, the KPIs indicate whether NTESMO is effectively fulfilling its core purpose and objectives, while also supporting transparency and accountability in how performance is assessed and reported.

We have carefully considered what 'good' performance looks like across each of NTESMO's core functions and our proposals are set out in Table 4.1 below. This has guided the selection of indicators that provide comprehensive coverage of NTESMO's responsibilities, reflect the intended outcomes of both the Market Operator and System Control functions and focus on aspects of performance that matter most to stakeholders. By defining what good performance looks like, we aim to ensure that the KPIs are meaningful, balanced and capable of demonstrating whether NTESMO is achieving its purpose in an effective and transparent manner.

Table 4.1: Summary of 'good' performance for each NTESMO function

System Control	Market Operator
• Appropriate prioritisation of security and application of economic dispatch in accordance with the System Control Technical Code • Trading intervals maintained within technical operating standards • All major incident reports completed within required timeframes • No avoidable system black events • Effective operation of the under-frequency load shedding (UFLS) schemes to protect against both credible and non-credible contingencies	• Settlement statements issued on time • Pricing consistent with published offers and procedures

In selecting the proposed suite of KPIs, we have assessed each option against the following criteria:

- **Relevant –** to the purpose of the performance incentives and the overall objectives of NTESMO.
- **Transparent –** has a clear and unambiguous definition that allows for data to be collected in a consistent manner, and for the indicator to be easily understood.
- **Measurable –** is quantifiable and can be accurately measured.
- **Reliable –** present a stable and consistent source of data over time.
- **Verifiable –** has a clear methodology that underpins the collection of data that can be validated.

The KPI proposal for the next regulatory period is outlined in the table below. While we considered a wide range, we decided to propose the 6 KPIs as we considered this combination to best reflect the overall performance aims of NTESMO's functions. We also considered that having a greater number of KPIs could dilute focus and clarity regarding NTESMO's overall performance.

NTESMO can report on the KPIs on either a monthly or quarterly basis, alongside providing an annual summary report to the Commission.

Section 4 – Questions for stakeholders

7. Do you agree with the KPIs we have proposed to monitor, the indicative targets, and the number of KPIs proposed?
8. Are there any further KPIs you see value in being included in the performance incentive framework?

Table 4.2: Proposed KPIs

Function	KPI	Measurement	Indicative Target	Rationale
System Control	Forecast accuracy	The mean absolute percentage error (MAPE) for the 24 hours ahead rolling forecast and 4 hour ahead rolling forecast for each 30 minute interval across the DKES and Alice Springs system. To address planning and real-time usage of forecasts, the performance of the 24-hour-ahead and 4-hour-ahead forecasts will be monitored monthly. Due to Tennant Creek being such a small and concentrated system, it is affected much more by unpredictable weather events (due to weather data delays) and as we propose it is not assessed under this KPI.	24-hour-ahead forecast: ≤ 10% variance 4-hour-ahead forecast: ≤ 5% variance	This KPI tracks the accuracy of NTESMO's demand forecasts supplied to system controller and operations planning team for real time and day-to-day business activities. Reliable forecasting enables more efficient scheduling and dispatch, outage management planning and most importantly to provide sufficient notice (days ahead) to prepare for system security risks arising during the minimum demand period. Providing accurate forecasts is a key objective of the Power System Evolution role within System Control that allows for better informed real-time operational decisions and management of planned outages. This helps ensure system security is appropriately balanced with cost-effective operations.
	Secure, reliable and economically compliant operations	Percentage of dispatch intervals where the system operates within secure and reliable limits under the System Control Technical Code (SCTC).	99.5%	This KPI monitors whether NTESMO is maintaining electricity system security, while optimising operations through new tools and automation. This is a common KPI used widely

				by System Controllers (Operators) in other jurisdictions.
	System black events	Number of full system black events per year.	Zero	This KPI seeks to demonstrate ongoing system security performance under SCTC obligations and operational resilience. Minimising the occurrence of system black events is another key indicator of 'good' performance for System Control.
Market Operator	Settlement timeliness	Percentage of preliminary, final, and revision settlement statements issued on time.	100%	These KPIs measure the performance of Market Operations and reliability of data. Both represent key areas of 'good' performance for the Market Operator. Strong performance in these areas can ensure participants have confidence in NTESMO's financial and market outcomes.
	Settlement accuracy	Number of settlement corrections due to NTESMO process error.	≤ 2 per annum	
System Control and Market Operator	System availability	Percentage of time core operational and market systems are available during required operational hours.	99.99%	Confirms reliability of NTESMO's core systems, which underpin operational efficiency and continuous service delivery.

5. Accommodating reform

Reform within the Northern Territory is ongoing and will impact NTESMO significantly in the next regulatory period. In 2022, the Northern Territory Government has now legislated two Acts (30 October 2025):

- *Electricity Legislation Amendment (Market Reform) Act 2025*.
- *Electricity System and Market Operator (NTESMO) Act 2025*.

While the legislation has now passed and received assent, it has not yet officially commenced.

5.1. Context

The overall aim of the reform is to ensure that the Territory's major electricity systems continue to operate in an efficient and secure manner. The legislation states that NTESMO will be established as a standalone entity with its own board of directors appointed by the Minister. Separation is currently proposed for mid-2027.

The new market design introduces a public procurement model. This will centralise the planning and procurement of wholesale electricity services within the DKES and the Alice Springs and Tennant Creek electricity systems. Generation investment and connection will be coordinated through a centralised process. For the DKES the public procurement model sets out the following arrangements:

- NTESMO will be tasked with developing a periodic Regulated Electricity System and Investment Plan (RESIP). This will identify the electricity supply industry investments required in each Regulated Electricity System. NTESMO's performance of this function will be overseen by a Planning and Investment Review Panel (PAIR Panel).
- NTESMO will be responsible for the processes to procure electricity services in the DKES as outlined in the RESIP. A procurement panel will be established to evaluate tenders and award contracts based on value for money. This process will be open to new and existing providers.
- NTESMO will operate the electricity system to securely supply electricity at lowest cost.
- The overall cost will be recovered from retailers with existing contracts between generators and retailers transitioned to the new public procurement model. NTESMO will be responsible for settlement of payments under the reformed arrangements.

There are a different set of arrangements proposed for the Alice Springs and Tennant Creek electricity system. For example, Territory Generation will act as sole supplier. However NTESMO will still be responsible for developing a periodic RESIP.

There will also be the establishment of Territory Electricity Market (TEM) Rules, which will outline the framework for system control, market operation, procurement, planning, and associated administrative processes. The TEM Rules will replace the existing SCTC and require amendment to the NER, both of which NTESMO currently operates in accordance with.

5.2. Impact on NTESMO

The legislative reform envisages substantial changes and assigns significant responsibility to NTESMO to carry out new functions. The key changes include:

- The establishment of NTESMO as independent from Power and Water including the appointment of a board of directors and establishment of corporate functions.
- Responsibility for preparing the RESIP.
- Responsibility for overseeing the central procurement process.
- Some responsibility for network connection, including managing the queuing process.
- Provide advice to support the rule drafting process led by the Department of Mining and Energy.
- Responsibility for financial payments and settlement.

As a result of the legislation, there is also a need to amend current licensing arrangements and establish a Market Operator Licence. The Utilities Commission of the Northern Territory will need to issue licences to NTESMO for both its System Control and Market Operator functions, replacing the System Control licence currently held by Power and Water.

NTESMO is likely to incur initial set-up costs associated with the separation from Power and Water including setting up the required governance structures. There will also be ongoing costs associated with the new functions that need to be performed. The reforms are aimed at reducing whole-of-system costs. While NTESMO's costs will increase, this is required in order for costs in other areas, such as generation, networks and retail to be reduced.

As part of our regulatory submission to the Commission we will set out the costs to NTESMO associated with the reform separately from our other activities. This will allow the Utilities Commission and stakeholders to provide feedback on our estimates of reform costs directly.

We are currently in the process of assessing the costs associated with the reforms. To the extent there is sufficient clarity on new obligations to forecast efficient costs, the NTESMO will include the ongoing costs in its initial regulatory proposal. Where efficient costs cannot be reasonably forecast until further detail is provided through regulations or rules, NTESMO will include these costs in its revised regulatory proposal. Where rules and regulations have not been made in time to inform NTESMO's revised regulatory proposal, a cost pass through will be considered.

We will also need to consider whether any parts of the regulatory framework need updating once NTESMO is separated. For example, the way in which the cost of capital is estimated. This is currently set as the rate applied by the AER to Power and Water's regulated networks.

Section 5 – Questions for stakeholders

9. Do you have any questions regarding the impacts on NTESMO arising from the TEM reforms?
10. Do you have any suggestions on how NTESMO can accommodate the reform efficiently?
11. Do you agree with the proposed approach to including reform costs in the Regulatory Proposal?

6. Tariff structure

NTESMO currently recovers its costs using a relatively simple $ per kWh consumption metric, which is levied on retailers. The current approved charges for FY2026 are shown Table 6.1. The System Control charge is levied for energy used from the three regulated electricity systems (DKES, Tennant Creek and Alice Springs), whereas the Market Operator charge is only levied for energy consumed on the DKES.

Table 6.1: Approved 2025/26 NTESMO charges (nominal, excludes GST)

NTESMO function	Charge for 2025/26 ($/kWh)
System Control	0.011230
Market Operator	0.003769

We are exploring options around changes to the tariff structure. This includes, as occurs for some other system and market operators, potentially recovering some or all NTESMO's costs using a fixed monthly charge applied to each connection point.

The majority of NTESMO's costs do not vary by the quantity of electricity delivered. As such, a partially fixed charge may better align cost recovery with NTESMO's cost structure. Furthermore, the current tariff is only recovered from the demand side. There has been significant growth in rooftop solar and, under the current tariff structure, the overall annual charge for these customers is reduced relative to those customers without solar. This is despite increasing penetration of solar contributing to increased complexity of electricity system operations and by extension costs.

Other system operators recover their costs using a mix of tariff structures sometimes aimed at both generators and customers. The table below summarises tariff structures currently applied elsewhere.

Table 6.2: Summary of tariff structure for system/market operator functions in other jurisdictions

Comparator	Tariff
SEMO	Mix of variable (Euro/MWh) and fixed (Euro/MW and Euro/Unit) charges levied on both generators and retailers.[8]
SONI	Variable charge (pounds/MWh).[9]
EirGrid	Overall transmission use of system charge with a mix of charge types.[10]
AEMO	Costs recovered from both generators and customers using a mix of charge types including fixed, energy and capacity charges.[11]
Transpower	Costs recovered from both generators and retailers using a $/MWh charge.[12]

[8] SEMO (2024), MO Tariffs and Charges and Imperfections Charge.
[9] System Support Service (SSS) charge, SONI (2024), TUoS Statement of Charges.
[10] EirGrid (2024), EirGrid Statement of Charges.
[11] AEMO (2024), AEMO Budget and Fees.
[12] Electricity Authority (2025), Annual Levy Rates.

Section 6 – Questions for stakeholders

12. What are your preferences for the structure of the tariff?
13. Do you have any concerns about moving from a fully variable charge to recovering some or all of NTESMO's costs using a fixed monthly charge applied to each connection point?

7. Territory Dispatch Engine review

The Commission determined that TDE Capital expenditure would be included in the FY2025–27 regulatory period. It also indicated a need to undertake an ex-post review to ensure the actual expenditure is prudent and efficient. Our current forecast of capital expenditure into the next regulatory period is provided in Section 2.3.

NTESMO would like to use this consultation process to further engage with key stakeholders on the development of the TDE.

7.1. Context

NTESMO is in the process of implementing a new scheduling and dispatch system in the form of the Territory Dispatch Engine (TDE). The operation of the DKES is rapidly becoming more complex and dynamic as large volumes of asynchronous, inverter-based, renewable generation displaces traditional synchronous gas-fired generation. This change means that the inherent essential system services provided by synchronous generation is being replaced while there is a growing need to manage energy flows in and out of battery energy storage systems. For example, scheduling of reserves to manage electricity system security will need to change from fixed spinning reserve quantities to a probabilistic basis. This is not possible within the existing processes and tools. The TDE will deliver an algorithmic unit commitment process to effectively assess the range of scenarios and support dispatch decision making processes.

In contrast, an automated scheduling and dispatch engine uses complex mathematical optimisation processes to identify the least-cost way to match supply and demand while maintaining a secure and reliable electricity system to facilitate the long-term interests of electricity consumers.

The fundamental benefits of the TDE project for the Northern Territory include:

- More efficient dispatch outcomes which will reduce wholesale electricity costs. This will reduce the purchase of gas for generation and result in a reduction in greenhouse gas emissions. We estimate that these benefits outweigh the cost of implementation with the project having a positive NPV of $24.5 million over 10 years.
- The delivery of an enhanced capability for system controllers to manage electricity system security. This improves NTESMO's capability to support an orderly transition to a renewable energy/low emissions future allowing the efficient dispatch of new technologies such as BESS and synchronous condensers.
- Allowing for a higher penetration of renewable energy sources in the dispatch solution due to more effective management of system constraints.

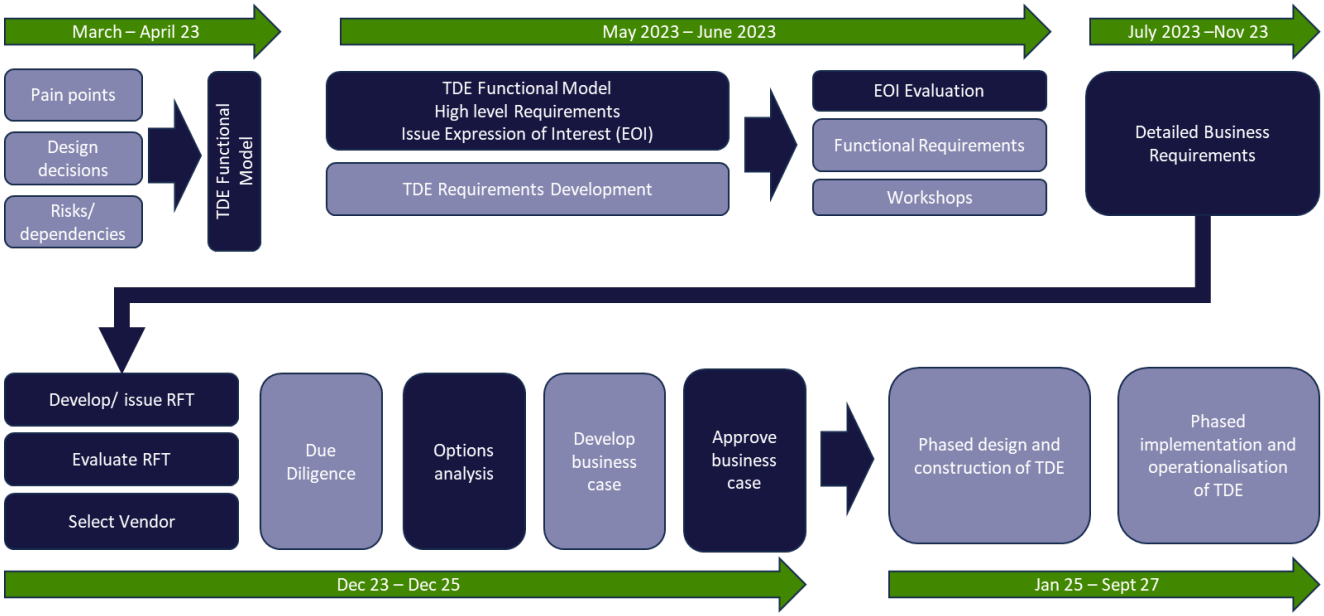
7.2. Project status

We estimated that the capital costs of implementing the TDE project to be $35.7 million (2024-25 real inclusive of corporate overhead cost, exclusive of contingency) at the business case stage, approved by the Commission. We also profiled the capital costs across two regulatory periods following our best estimates of when we would incur this expenditure. The Commission recognised that this was the best estimate available at the time and that it was possible that capital costs and profile might change. This was the reason the Commission included an ex-post review stage.

We are currently in the process of updating our cost estimates for the TDE project and expect that capital costs will be reprofiled with a higher amount than initially forecast being incurred in the next regulatory period. We will provide an update alongside our regulatory submission.

The TDE project involves the delivery of several functional packages by various vendors. The RfT process for the selection of these vendors and due diligence has been completed. We are now in the final stages of contract negotiations with these vendors and are moving towards the design and construction stage.

Figure 7.1: High-level TDE Planning, design and implementation timeline



The expected go live date is September 2027 with the current high-level timetable as follows:

- Hardware procurement and implementation (December 2025 to July 2026).
- System development (April 2026 to September 2027).
- Certification testing (August 2026 to May 2027).
- Testing user and system integration (January 2026 to May 2027).
- Training and operational/market readiness (June 2026 to August 2027).
- Go live (September 2027).
- Post-implementation support (September 2027 to December 2027).

As the project progresses, we intend to engage further with stakeholders.

7.3. Ex-post review

The Commission set allowed revenue in the current regulatory period based on the estimated capex costs associated with the TDE project. The Commission has noted that these ex-ante estimates will be replaced with actual expenditure if this is later approved by the Commission. The Commission intends to undertake an ex-post review of capex incurred to ensure prudency and efficiency.

The timeline for the TDE development process does not align perfectly with the current regulatory period dates. The currently forecast go live date is in the next regulatory period. An evaluation of the benefits achieved will need to occur after this point. We will work with the Commission to establish the procedure and timing of the ex-post review, and this may not perfectly align with the regulatory submission process for the next regulatory period.

To support this process, we will provide a compliance summary to the Commission for this project. This will include a comparison between actual and ex-ante forecast expenditure and reasons for any substantial variance. The compliance summary will also discuss any significant differences between the actual and forecast timeframes to date.

Section 7 – Questions for stakeholders

14. Do you have any questions on the implementation process and timeline?
15. Do you have any feedback or suggestions as to how we could communicate implementation progress?

Annex A: Productivity factor examples

Single Electricity Market Operator (SEMO)

SEMO is the market operator for the all-island wholesale market across Ireland and Northern Ireland. Its total opex allowance for the current regulatory period (2024-29) is €113.2m, or approximately €22.6m each year.

SEMO's operating expenditure has an efficiency factor of 0.3% applied on real prices for the 2024-29 regulatory period.[13] This is a continuation of the efficiency factor rate that has been applied to SEMO's opex allowances since the introduction of an efficiency factor for the 2013-16 regulatory period. In determining this rate, it was recognised that SEMO is similar to a 'business service provider'.[14]

System Operator for Northern Ireland (SONI)

SONI is the transmission system operator (TSO) in Northern Ireland. The total opex allowance for 2020-25 was £78.0m, or approximately £15.6m each year.[15]

In its 2015-2020 price control, a productivity factor of 0.3% was applied to the opex allowance, consistent with the rate applied within the SEMO price control.[16]

In the most recent 2020-2025 price control, a productivity factor of 0.6% applied.[17] This was decided upon through consideration of independent productivity forecasts, EU KLEMS Total Factor Productivity, and regulatory precedent. SONI considered a productivity factor of 0.3% was more appropriate for an asset-light entity that had limited opportunities for productivity gains.

EirGrid

EirGrid is the TSO in Ireland. In the most recent 2021-2025 price control (PR5, 2021-25), EirGrid's total opex allowance totalled €1,266.4m, or approximately €253.3m each year. This is of a notably larger scale than that of NTESMO.

For PR5 a productivity factor of 0.4% has been applied to EirGrid's TSO allowance. This was set below an achievable base assumption of 1.0%, in recognition that the TSO business may have less scope for capital substitution (the use of capital/technology to carry out functions previously undertaken by labour).[18]

In the Draft Determination for the PR6 regulatory period (2026-30), the regulator has a proposed position for the productivity factor of 0.5%[19]

[13] SEM Committee (2025), *SEMO Price Control 2024-29 Final Determination*, 1 July, p. 7.
[14] SEM Committee (2013), *SEMO 2013-2016 Price Control Decision Paper,* 6 August, p. 10.
[15] Utility Regulator (2020), *SONI price control 2020-2025 Final Determination*, Annex 4, 21 December, p. 39.
[16] Utility Regulator (2016), *Final Determination to the Price Control 2015-2020 for the Electricity System Operator for Northern Ireland (SONI)*, 22 February, p. 42.
[17] Utility Regulator (2020), *SONI price control 2020-2025 Final Determination*, Annex 4, 21 December, p. 25-34.
[18] Commission for Regulation of Utilities (2020), *Price Review Five (PR5) TSO and TAO Transmission Revenue for 2021 – 2025*, 18 December, p. 71.
[19] CRU (2025), *Price Review 6 (PR6) Transmission Revenue for 2026-2030,* 3 July, p. 64.

Australian Electricity Market Operator (AEMO)

AEMO is the market and system operator of the National Electricity Market (NEM) and Wholesale Electricity Market (WEM). In the NEM, AEMO recovers its internal costs from market participants via participant fees. There is no embedded ongoing opex productivity factor in the NEM fee framework.[20]

In the WEM, AEMO is funded through allowable revenue determinations set by the regulator (ERA) with in-period adjustments where required. Like in the NEM, no productivity factor applies to AEMO's regulated activities in the WEM. The ERA has explicitly acknowledged the difficulty of assessing an efficient opex spend for AEMO while it is executing reforms to support decarbonisation. Rather, AEMO must prioritise delivery of reform activities to external deadlines and is incentivised to prioritise the timely delivery and full scope of reform work, rather than focus on limiting cost pressures.[21]

Transpower

Transpower is the system operator (SO) in New Zealand, operating the wholesale market and managing system security. It is paid a contracted fee for its SO role by the regulator.[22] In the 2023-24 financial year, Transpower's SO opex totalled NZ$27.98 million.[23]

Under the SO Service Provider Agreement (SOSPA), opex is indexed each year by CPI minus an adjustment factor (i.e., ΔCPI – X). The adjustment factor is currently set at 0.5%.[24]

Distribution Network Service Providers (DNSPs)

The AER uses an ongoing opex productivity factor of 0.5% for Australian DNSPs.[25]

[20] National Electricity Rules, Rule 2.11.
[21] ERA (2024), *Australian Energy Market Operator's AR6 second in-period allowable revenue and forecast capital expenditure proposal*, Final determination, 28 June, p. 32.
[22] Transpower (2025), *Transpower integrated report FY2025*, p. 133.
[23] Electricity Authority (2025), *Review of system operator performance 2023/24*, 18 February, p. 22.
[24] Electricity Authority (2025), *System Operator Service Provider Agreement,* 1 July, p. 2.
[25] AER (2019), *Forecasting productivity growth for electricity distributors – Final decision paper*, March.

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