

Consultation Paper

NTESMO Revenue Proposal 2024-2027

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Executive Summary

The Northern Territory Electricity System and Market Operator (NTESMO) is responsible for operating the Northern Territory's electricity market and power systems. The operation of the electricity market and Northern Territory power systems is governed by a range of regulation and legislation, including a national set of energy laws and rules, Northern Territory legislation, as well as guidelines, standards and procedures.

The Northern Territory power system and market is undergoing rapid transformation. The speed and scale of the uptake of distributed energy resources and large-scale solar PV generation are presenting significant challenges to managing the reliability, stability and security of the power system.

Power and Water, through the NTESMO function, is seeking to consult with stakeholders to assist with the development of required proposals for the next regulatory period commencing from 1 July 2024.

Two proposals will be submitted to the Northern Territory Utilities Commission (the **Commission**):

1. 2024-25 Pricing Proposal – seeking to administratively roll over of tariffs and charges for 2024-25 (**Pricing Proposal**).
2. 2024-27 Revenue Proposal – seeks to apply a 'building blocks' approach to the revenue requirement from financial year 2024-25, which will set tariffs and charges from financial year 2025-26 (**Revenue Proposal**).

The Pricing Proposal will be submitted to the Commission by September 2023, with the Revenue Proposal submitted in December 2023.

This consultation paper seeks to:

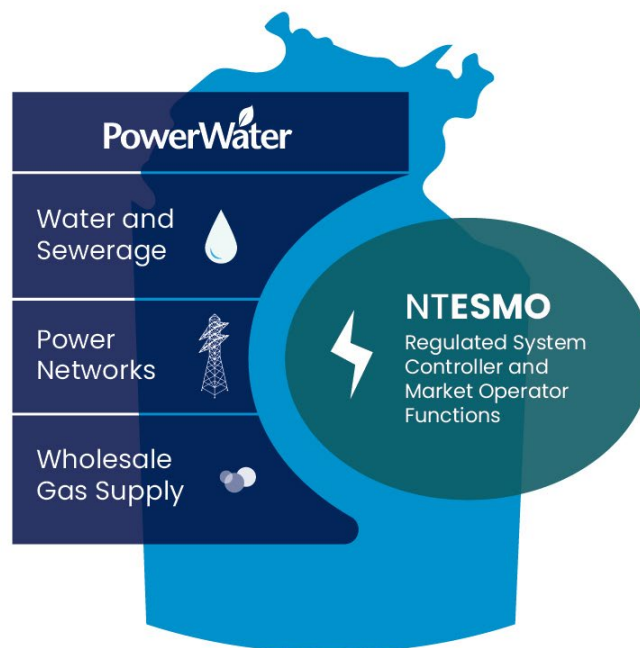
1. Outline and gain stakeholder support for setting of charges for 2024-25 in the Pricing Proposal.
2. Outline key issues experienced by NTESMO in undertaking the system control and market operator functions, identify available options to addressing these issues, and seek stakeholder feedback to assist in the development of the Revenue Proposal, which will set tariffs and charges from financial year 2025-26.
3. Seek stakeholder feedback on the benefits of the next determination period being shorter than 5 years.

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 21 June 2023.

Introduction

Power and Water Corporation (Power and Water) is responsible for undertaking power 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.¹ These functions are performed under the System Control Licence granted to Power and Water and undertaken by a ring-fenced business unit. Under National Electricity Law, the system control and market operator functions are referred to as the Northern Territory Electricity System and Market Operator (NTESMO).² Central to the System Controller’s functions are ensuring the reliability, stability and security of the power systems, with reliability focusing on uninterrupted power supply; stability to ensure balanced and steady operation; and security safeguarding the power system from physical and cyber threats. Central to the Market Operator’s functions is facilitating the efficient operation of the electricity market.

Image 1: NTESMO function ring fenced within Power and Water Corporation



Costs incurred by Power and Water in performing NTESMO functions are recovered through charges approved by the Utilities Commission of the Northern Territory (the Commission).³ The Commission has the legislative authority to set NTESMO’s allowed revenues and accordingly determine the annual charges that

¹ The three regulated electricity systems that Power and Water is responsible for under its System Control Licence are: Darwin-Katherine electricity grid, Alice Springs electricity grid and Tennant Creek electricity grid.

² The National Electricity Rules (NT) 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 power 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 licenced to perform under its System Control Licence.

³ 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.

can be recovered by NTESMO from market participants in the Northern Territory (NT) for the performance of its functions.⁴

On 30 April 2019, the Commission issued its final decision for the 2018 System Control Charges Review, setting NTESMO's allowed revenue for the current regulatory determination period (2019-20 to 2023-24).⁵ This decision saw an increase in system control and market operator charges, which was constant⁵ for 19 years and resulted in a significant cost recovery shortfall for Power and Water undertaking these functions. The Commission approved annual pricing changes to NTESMO charges consistent with its 5-year regulatory determination.

The current approved charges for NTESMO functions for 2022-23 are shown in Table 1. The charges are a relatively simple \$ per kWh consumption metric and are only levied on retailers. The System Control charge is levied for energy used from the three regulated electricity systems (Darwin-Katherine, Tennant Creek and Alice Springs), whereas the Market Operator charge is only levied for energy consumed on the Darwin-Katherine electricity system. This metric is measured at the retailers' customer's meter.

Table 1: Approved 2022-23 NTESMO charges (nominal, excludes GST)

Charge component	Charge for 2022-23
System Control	\$ 0.005407 per kWh
Market Operator (Component only paid by customers supplied in the Darwin-Katherine regulated system)	\$ 0.000574 per kWh

The Commission will need to review and approve NTESMO's allowed revenue and tariff structure from 2024-25 onwards. While the legislative provisions governing NTESMO's cost recovery does not stipulate a definitive regulatory process and decision-making timeline, the Commission has indicated its preference for undertaking a robust industry consultation process and the allowance of a minimum of 12 months for the determination process.

Power and Water has experienced some delays in commencing this process, meaning it is unlikely the determination process will be completed with sufficient time for new charges to commence from 1 July 2024. Consequently, the Commission has indicated a preference for Power and Water to undertake a two phase determination process:

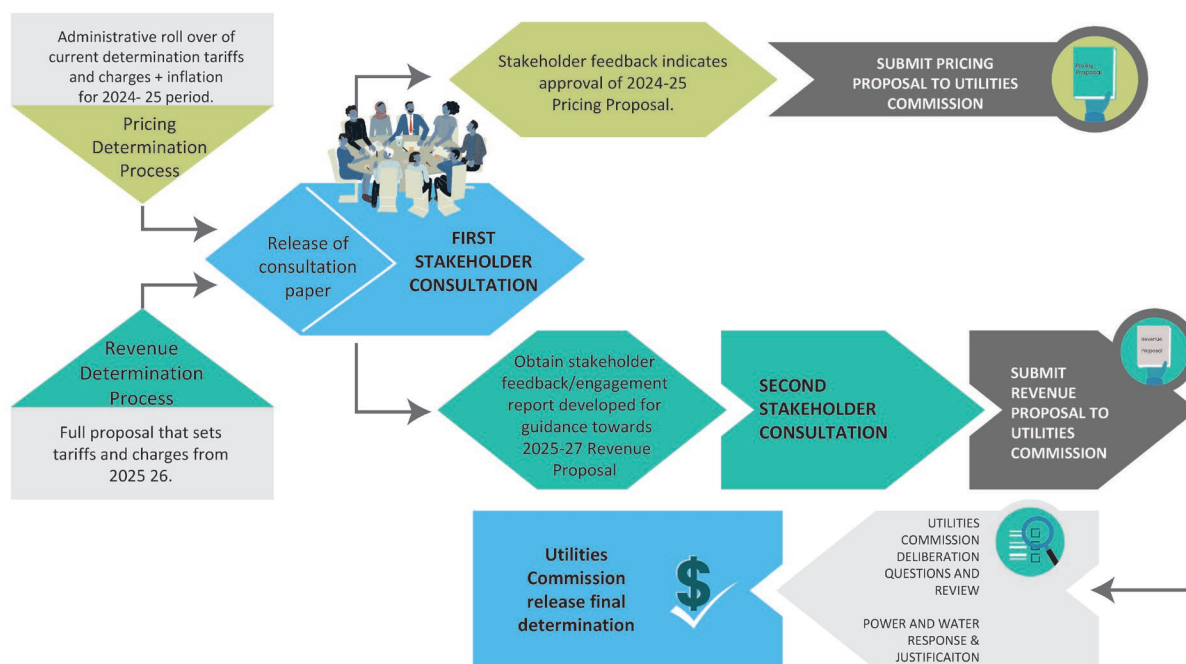
1. Pricing Proposal – seeking to administratively roll over of tariffs and charges for 2024-25.
2. Revenue Proposal – seeking to apply a building blocks approach to the revenue requirement for the period 2025 -27, which will set tariffs and charges from financial year 2025-26.

With the two-phase process, Power and Water expects to lodge a Pricing Proposal by September 2023 and Revenue Proposal in December 2023.

⁴ 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.

⁵ In nominal terms

Image 2: Submission workflow for the two pathways to allow robust consultation.



2024-25 Pricing Proposal

The Pricing Proposal intends to be administrative in nature and allow the 2023-24 tariffs to be rolled-over and escalated by the consumer price index (CPI). The proposal will not provide cost forecasts or revenue requirements, rather an escalation of the 2023-24 tariffs by the 8 capital cities’ average CPI.

2025-27 Revenue Proposal

The Revenue Proposal will set out the forecast expenditure Power and Water expects to incur in performing the NTESMO functions from 2024-25 and extending to the end of the next regulatory period.⁶ The Commission will then assess whether the proposed forecasts are prudent and efficient, and determine the tariff structure and revenue Power and Water will be entitled to receive for NTESMO’s regulated activities from 2025-26.

Since the commencement of the current regulatory period in 2019-20, the Northern Territory's electricity sector has seen an increased need for NTESMO to undertake more complex activities associated with managing power systems shifting towards higher levels of intermittent renewable generation, both in respect to grid connected and behind the meter. This trend has seen increased complexities in undertaking System Control functions, including necessitating the introduction of new operational tools, advanced analytical capabilities, and the need to consider centralised system planning and optimised security-

⁶ While Power and Water believes there is benefit for the next regulatory period to be shorter than the ordinary 5 years, we would seek to revert to a 5 year regulatory period when we have greater certainty.

constrained economic dispatch of generators to ensure effective and predictable outcomes for maintaining system security.

Additionally, there has been a growing number of generators entering the Northern Territory's power systems, increasing the need for NTESMO to undertake greater levels of compliance and reporting activities, outage planning and real time operations. Considerable effort is also required in performing regulated (NTESMO) assessment functions for the connections of new renewable generators entering the Northern Territory's energy sector.

Added to this uncertain landscape is the ongoing reform developments in transitioning the Interim Northern Territory Electricity Market (I-NTEM) to a fully functioning wholesale electricity market. While the reforms are yet to be settled and implemented by the Northern Territory Government, it has and will continue to require NTESMO to evolve its capabilities and systems to ensure it can perform the functions needed for the new market arrangements in the timeframes expected. This has been challenging given that the systems, processes and capability that underpinned the temporary arrangements for I-NTEM, and subsequently defined NTESMO's costs in 2019, are no longer sustainable or suited to the operational environment of the power system today.

To ensure that electricity customers in the Northern Territory continue to benefit from a reliable and secure power system, we have considered and planned for increases in both personnel and capital investments, necessary for NTESMO to effectively operate the power systems in accordance with the prevailing regulatory obligations.

Power and Water intends to undertake its own consultation with industry stakeholders prior to the Pricing and Revenue Proposals being submitted to the Commission.

Consultation process

To ensure that stakeholders have an opportunity to contribute to the development of NTESMO's proposals, Power and Water has outlined an indicative process and timeline for its consultation process in Table 2.

Table 2: Proposed Power and Water consultation process for NTESMO revenue proposal development

Milestone	Date
Publication of consultation paper	22 May 2023
Stakeholder forum on consultation paper	30 May 2023
Submission due on consultation paper	21 June 2023
Incorporate feedback from 1st round of consultation and submit Pricing Proposal to Commission	July – September 2023
2 nd stakeholder forum	August/September 2023
Incorporate feedback from stakeholders and finalisation of Revenue Proposal	September -December 2023
Submission of Revenue Proposal to Commission	December 2023
Commission regulatory process and decisions	As determined by the Commission

Invitation to make a submission

A number of preliminary issues have been identified that will be integral to NTESMO's Pricing Proposal and Revenue Proposal. This consultation paper seeks feedback from stakeholders on these issues to inform and enhance the content of our Revenue Proposal. Stakeholders are encouraged to provide their views on the questions provided and comments on any other issues relating to the development of NTESMO's proposals are welcome.

Written submission on the issues raised in this consultation paper are invited by 21 June 2023. Submissions can be emailed to market.operator@powerwater.com.au

Please 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 Tuesday 30 May 2023. If you would like to attend this workshop, please register your interest via email at market.operator@powerwater.com.au

We also intend to hold another workshop in late August or early September 2023 to present preliminary expenditure forecasts and expected revenue requirements for NTESMO.

Issues for comment

This section discusses the following issues that will affect how NTESMO's revenue requirement and charges will be developed:

- How to manage reform uncertainty
- The two phase determination process and length of the Revenue Determination
- Tariff options, including tariff structure, allocation of revenue recovery to different system participants and potential new tariffs.

Managing reform implementation uncertainty

NTEM priority reform program

Plans to reform the I-NTEM into a more effective wholesale market have been under consideration for several years now. The Northern Territory Government's latest NTEM reform program is seeking to significantly change the wholesale market arrangements to support their renewable energy objectives as well as promoting competition.⁷

In 2019, the previous NTEM reform proposal had commenced but was not finalised for implementation. Given the uncertainty of implementation and recognising the potential for such a reform to impact on NTESMO's regulatory obligations and costs, the Commission decided to treat any NTEM reform cost impost via a cost pass-through mechanism. In its Final Decision, the Commission stated that '...there may be a need to implement a pass through of costs (or savings) to provide for any increase or decrease to the system control charge if System Control's obligations under the [System Control Technical Code] in the future change as part of the transition from the [I-NTEM] to a 'full' NTEM.'⁸

The Northern Territory Government's NTEM priority reform program policy development is still in progress and it remains unclear what NTESMO's new obligations will be, and when they will be implemented. However, the extent of new functions and activities planned for NTESMO under the NTEM priority reform program means there are important decisions NTESMO needs to make with respect to how to plan and forecast costs for implementing systems, processes and personnel to support the Northern Territory Government's final NTEM design. In addition, the recovery of these costs will need to be explicitly treated in the next regulatory period.

Current uncertain status of when and to what extent the NTEM priority reform program will impact on NTESMO's regulatory obligations, signifies there are compelling reasons for NTESMO to proceed with a number of specific investments that provide much needed uplift in operational capability.

New operational tools and systems

There has been considerable change to the power system topology and operation due to the rapid uptake of renewable energy over the past few years. NTESMO has had to preserve system security amidst delayed reforms and the significant transition that is occurring toward a renewable energy future. Maintaining

⁷ NTEM Priority Reform Program was launched by the Northern Territory Government in June 2020. See <https://industry.nt.gov.au/reforms/northern-territory-electricity-market-priority-reform-program>

⁸ Utilities Commission, 2019 System Control Charges Review, Final Decision, 30 April 2019, p. 8.

system security has become increasingly complex and challenging to manage with inadequate legacy systems and without significant investment in sophisticated power system analytical tools.

The systems and processes that currently exist within NTESMO are largely rudimentary legacy systems that have not been replaced to manage the power system to deal with renewables generation proliferation. At the commencement of the I-NTEM in May 2015, many of these legacy systems were retained for use while temporary market arrangements were trialled with two generators. Additional tools and processes were developed that relied on simple manual processes and spreadsheets. At that time, it was expected that these would be reviewed once long term market design was finalised by the Northern Territory Government, which was anticipated to occur within 6 - 12 months.

However, the market rules have stayed relative static for more than 8 years as reforms to implement NTEM remain uncertain. With the increasing behind-the-meter rooftop PV and new large scale solar farms already connecting, new tools are required to provide situational awareness of sudden changes in system demand and supply capacity.

We believe it is no longer feasible to wait for NTEM reforms to be finalised prior to investing in new systems and processes. These systems are highly specialised and can take 30 to 55 months to implement, depending on their complexity and available resources.

Power and Water has developed and continues to develop a suite of transitional tools to assist with real time operational challenges in the I-NTEM on a minimum viable product basis. Power and Water is currently developing the final business case for the development of the Phase 1 Territory Dispatch Engine. This business case will entail investigating three solution pathways:

1. Enhance the sophistication and degree of integration of the existing suite of transitional tools;
2. Explore the potential to expand the functional capability of the existing Energy Management System that is currently being upgraded to a more contemporary version by procuring additional modules from the vendor; and/or
3. Procure commercial off-the-shelf functional modules and customise and integrate the required modules to achieve the required functional capability.

The purpose of the implementation of a dispatch engine is to enable renewables while maintaining I-NTEM compliance. The objective is to improve unit commitment decision functionality, including:

- batteries and non-energy facilities in the dispatch solution
- minimise the curtailment of renewable facilities
- reduce inefficient facility cycling by enhancing the capability to manage power system security and reliability.

The design of the Phase 1 dispatch engine solution will be augmented to deliver the Phase 2 solution to incorporate modifications to enable NTEM reforms once the Northern Territory Government makes the required policy decisions and finalises the regulatory design and rules.

Due to the long implementation timeframes, the benefits of the dispatch engine may not be realised in the next regulatory period. Without a dispatch engine, NTESMO will be unable to effectively dispatch and manage the new technologies that are expected to connect to the system (batteries, synchronous condensers etc.) and the increasing connection of variable generation, both behind the meter and large scale. The current systems and processes have a finite capability and changes will be required.

Power and Water is working on replacing the current settlement system used to undertake 'virtual' settlements under the I-NTEM arrangements. The current settlement system is a Microsoft Excel spreadsheet, which has reached end of life and has become highly unstable. This settlement system was put in place as an interim solution to calculate energy settlements for 1,000 interval NMI/customers, and is now used to support processing more than 25,000 interval NMI/customers. The settlement spreadsheet will be replaced with a robust system capable of performing the settlements functions required to support the I-NTEM, as well as provide scalability to add features that can support future settlement arrangements envisaged in the NTEM priority reform design arrangements.

Providing scope for scalability in these tools and systems to meet future NTEM needs is not without its costs. However, we believe further delaying investment in these tools will put system security and reliability at unacceptable risk. Decisions are therefore needed on what costs should be incurred now in terms of functionalities and those that can be added in the future when NTEM reforms are more certain. There is also the risk that if these transitional tools and systems are not scalable or adaptable to work under the new NTEM arrangements, they will need to be replaced when the NTEM reforms are finalised. This would risk additional costs that could have been avoided.

Analysis of system security and reliability

Given the change of generational mix due to increased connection of grid connected and behind the meter solar discussed above, System Control is required to undertake increased analysis of system security and reliability. This increased investment is required to ensure that the power system operates within required operating parameters in respect to frequency and voltage to avoid excessive under-frequency load shedding and cascading failure. This investment in required detailed analysis of the increasing dynamic power system is to balance the adherence to the required standards, and also to ensure the application of those standards do not unduly impinge the participation of new technologies in the power system such as batteries, non-energy facility and renewable energy sources.

A core function of the System Controller is maintaining the power system's stability by ensuring it operates within required frequency and voltage operating parameters. This system stability is essential to avoid excessive under frequency load shedding and cascading failure, and is becoming increasingly complex given change of generational mix discussed above. The System Controller must undertake greater analysis of the increasing dynamic power system to enable more informed decisions about how it is effectively managed. There is a correlating investment required in both people and systems to ensure this analysis is effective in supporting the power system's stability and reliability.

Question for stakeholders

- **Do you support investment in new tools and systems now ahead of the NTEM priority reform implementation?**
- **Do you support additional expenditure to ensure systems and tools being implemented by NTESMO now are scalable to meet market requirements under the NTEM priority reforms or other future NTEM reforms?**

Potential cost recovery mechanisms

Some of the costs that will be incurred to support replacing legacy systems are tied to NTESMO's existing regulatory obligations or functions. Examples include implementing a dispatch engine to make operational

decisions of which and when generators are dispatched in the I-NTEM, and replacing the existing dated settlement system.

However, there will be other types of expenditures that may not meet this criteria. These include expenditure related to NTEM reform functionalities that currently are not obligations that NTESMO is responsible to meet. These type of costs that are inherently uncertain in a revenue determination process and can most appropriately be managed through either a contingent project mechanism, or a cost pass-through mechanism. Unlike the National Electricity Rules, there is no set framework that specifies what mechanism the Commission should apply, nor how they should apply it. Power and Water is seeking to propose a pathway forward in our submission.

Contingent project mechanism

A contingent project mechanism can be used where relatively large discrete projects have already been identified as part of a regulatory determination process but the timing of the project is uncertain. Under such a mechanism, as well as identifying the contingent project, one or more trigger events are identified that must be activated before the project can commence. The regulated entity must seek the regulator's approval that a trigger has been activated before it commences the project, to ensure revenue recovery will be possible. In practice, it is possible that the contingent project may not proceed because the trigger events are not activated within the regulatory period. In this way, customers are not required to pay for a project that does not proceed.

An example of the contingent project mechanism is what currently applies in the National Electricity Rules (NER). Contingent projects are not included in the ex-ante regulatory or revenue allowance. However, the definition of the contingent projects and their accompanying trigger events need to form part of the regulatory determination. Trigger events usually include the successful completion of a cost efficiency test.

For the forthcoming regulatory period, we intend to identify one or more contingent projects and their associated trigger events in our Revenue Proposal. The Commission will assess the contingent project(s) as part of its revenue determination. If a contingent project is approved by the Commission, and its trigger event is activated, NTESMO will make a Contingent Project Application (CPA) to the Commission that substantiates the occurrence of the trigger and presents the capital and operating costs of the contingent project. The Commission will assess the CPA and if it is satisfied the forecast expenditure is efficient, will amend NTESMO's revenue determination for the remainder of the regulatory period. If the Commission is not satisfied, it can reduce the forecast in the CPA.

Cost pass-through mechanism

Similarly, a cost pass-through mechanism can occur within a regulatory period when a pre-defined exogenous event occurs which increases costs above a specified threshold level. In these circumstances, the regulator can approve an amount to be recovered on application by the regulated entity.

The NER also provides circumstances in which a cost pass-through can be used to allow a network service provider to recover its efficient costs incurred because of events that could not reasonably be forecast as part of the regulatory proposal, but would have a significant financial effect on the ability to invest in and operate the network if they were to occur.

Cost pass-throughs typically provide for a pre-defined range of situations where costs can be recovered. It is triggered only on the occurrence of the specified event and where the prudence and efficiency of the incurred costs must be substantiated to the regulator.

For the forthcoming regulatory period, NTESMO will propose several cost pass-through events using the defined NER pass-through events and those events incorporated in recent network regulatory proposals as a guide, possibly including:

- regulatory change event
- tax change event
- retailer insolvency event
- insurance coverage event
- insurer credit risk event
- terrorism event, including cyber attack
- natural disaster event
- other NTESMO specific events to manage uncertainty such as NTEM reform.

Power and Water is likely to propose the cost pass-through threshold be set at 1 per cent of NTESMO's expected total system control and market operations cost base, which is the cost pass-through threshold applied by the Australian Energy Regulator under the NER.

Managing expenditure in an uncertain environment

Managing planned expenditure and cost recovery through these types of mechanisms is necessary because of the need for NTESMO to invest in more sophisticated systems and tools to manage the evolving power system.

Where possible and not detrimental to system security and reliability, we will defer expenditure and seek recovery through contingent project and/or cost pass through mechanisms, with appropriate triggers and thresholds to be proposed to the Commission and incorporated in the revenue determination. We consider this approach will balance the needs of NTESMO in terms of prudent and efficient cost recovery while not exposing customers to unreasonable price increases.

Question for stakeholders

- **Do you support the use of a contingent project mechanism as outlined to manage some of the cost uncertainties for NTESMO?**
- **Do you support the use of a cost pass-through mechanism as outlined to manage some of the cost uncertainties for NTESMO?**
- **Is there any other mechanism that NTESMO should consider in managing cost uncertainties?**

Revenue determination period

2024-25 Pricing Determination Process

As outlined above, Power and Water has experienced some delays in commencing this process and to ensure sufficient time to complete stakeholder engagement, and prepare a considered revenue proposal, an alternative approach will be required. The Commission has indicated a preference for Power and Water to undertake a two phase determination process:

1. Pricing Proposal – seeking to administratively roll over of tariffs and charges for 2024-25.
2. Revenue Proposal –seeking to apply a ‘building blocks’ approach to the revenue requirement for the period 2025-27, which will set tariffs and charges from financial year 2025-26.

To minimise complexity for the Pricing Proposal, we intend to use the 2023-24 approved tariffs and escalate them by the 8 capital cities average forecast CPI. We do not intend to include expenditure forecasts nor propose structural changes to charges.

It is intended that the Pricing Proposal will be submitted to the Commission by September 2023, to allow the Commission to consider this proposal and the mechanisms for implementing it.

Any shortfall/over-recovery for 2024-25 (i.e. difference between revenue and the building blocks revenue requirement) will be calculated and addressed in the Revenue Proposal. It is proposed that any shortfall/over-recovery will be incorporated into the tariffs and charges from 2025-26.

Question for stakeholders

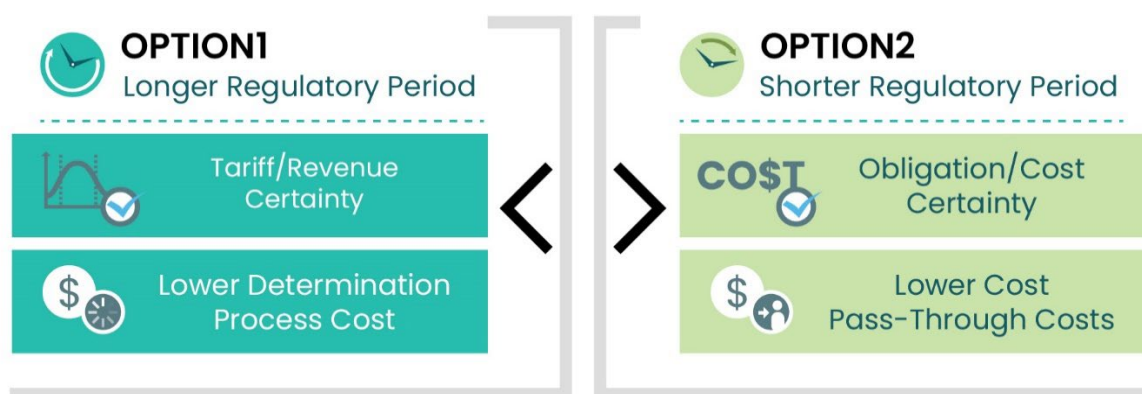
- **Do you agree with the proposed approach to the Pricing Proposal?**
- **Do you have an alternative approach that NTESMO should consider?**

Length of regulatory period

The duration of the regulatory period for which revenue is determined will be one of the crucial aspects of NTESMO's Revenue Proposal. The previous determination by the Commission was for a 5-year period, which offered a reasonable compromise between competing considerations. There is no regulatory instrument that defines the length of NTESMO's regulatory period and as such NTESMO will need to propose a period that balances the competing priorities.

A longer regulatory period provides certainty of charges for retailers/customers and revenue for NTESMO. However, with the forecast level of change in the coming 5 years it is likely that NTESMO would need to make multiple cost pass-through applications or defer expenditure. Cost pass-through applications are resource intensive for the Commission and Power and Water, and erode the certainty achieved through a longer period.

Figure 1: Competing considerations for choice of different regulatory periods



Power and Water considers that a shorter regulatory period would be more appropriate for the next Revenue Proposal due to uncertainties associated with NTEM reforms and the significant technological change currently occurring in the electricity sector. We intend to propose a 3-year regulatory period for the Revenue Proposal, which would forecast revenue requirements from 2024-25 to 2026-27 and prices from 2025-26 to 2026-27.

Question for stakeholders

- Do you agree with a 3-year revenue determination period for NTESMO's Revenue Proposal?
- Are there other factors that should be considered when determining the revenue determination period?

Tariffs

Market operator charge

In the previous determination, the Commission approved the separation of the System Control charge into 2 components to reflect the different functions that NTESMO undertakes, namely, system control functions that are relevant across the three regulated systems and the market operator functions that only relate to the Darwin-Katherine electricity system. The Commission noted the benefits of this separation as including:

- Transparency – further development of the NTEM is envisaged. If there is a separate identified charge for the market operator functions of System Control, there is greater transparency as to the cost impacts of any market developments.
- The system control functions are more mature than the market operator functions with a clearer future scope, and thus whose charge could be determined over a longer period of time (subject to some form of price control mechanism) compared to a market operator charge.
- The system control functions are undertaken on behalf of all customers, while the market operator functions are only undertaken by System Control for Darwin-Katherine customers. Under an efficient cost recovery regime that minimises cross subsidies, the costs associated with the market operator functions should only be recovered from customers in the Darwin-Katherine area.
- Customers in Alice Springs and Tennant Creek are already paying Territory Generation for market operator functions and therefore should not be paying for market operator functions in the Darwin-Katherine area.⁹

Power and Water intends to retain the separation of charges for the next regulatory period to distinguish the market operator service provided to customers in the Darwin-Katherine area. However, we are considering relabelling the ‘market operator’ charge category as ‘NTEM’ charge component.

Currently, market operator fees implies that it only includes the settlement function, but there are many other activities that relate to the development and operation of the wholesale market in the NTEM that should only be recovered from customers on the Darwin-Katherine grid.

NTEM fees better characterises NTESMO’s role in undertaking the market operator function as well as other wholesale market activities in the Darwin-Katherine system, as required under the System Control Technical Code. This change would not impact the recovery of costs associated with the market operator function from customers in the Darwin-Katherine area.

There are broader electricity sector reform and operational costs that are or will be incurred across the three regulated systems and these costs can continue to be recovered through the system control charge component that applies for cost recovery across all three systems.

Question for stakeholders

- **Do you agree with maintaining separation of the market operator function charge that only applies to the Darwin-Katherine area?**
- **Do you support changing the ‘market operator charge’ label to the ‘NTEM charge’ to better reflect the broader activities related to market operation?**

⁹ Utilities Commission, 2019 System Control Charges Review, Final Decision, 30 April 2019, p. 10.

Cost recovery responsibilities

It is a commonly accepted principle that the individuals or entities responsible for incurring a cost should be responsible for paying, especially if they are the primary beneficiaries of a particular service or function (the so-called 'cause pays' or 'beneficiary pays' principles). To ensure that NTESMO's charges are proportionate to the costs involved, they should be set accordingly. However, there may be situations where identifying the parties responsible for the cost is challenging due to transaction costs or technical limitations, or when costs are shared across multiple services or functions. In such cases, alternative principles for allocating costs may need to be employed.

The current approach to recovering NTESMO's allowed revenue involves levying 100 per cent of the charges onto retailers in each regulated system. Given the limited number of market participants that have historically been operating in each system, for example the larger Darwin-Katherine electricity system through the I-NTEM, it made practical sense to limit the cost recovery to those parties that are best able to pass the cost onto end-use customers without any significant transaction costs. As retailers have direct relationships with end-use customers, allocating cost recovery to them is simpler than for generators who do not have a direct customer relationship.

It is considered there is no pressing need to changing this approach. As such, we support retaining the allocation of fee-paying responsibility on the retailers. However, we note that developments in other jurisdictions have seen the expansion of who costs are recovered from. For instance, in the National Electricity Market, the Australian Energy Market Operator (AEMO) has introduced allocation of some core costs onto new types of market participants, such as aggregators and demand response service providers. At the same time, generators also pay for a portion of the AEMO's fees.¹⁰

We welcome further views on whether the cost recovery allocation should be amended to include a broader group of market participants.

Question for stakeholders

- **Do you support retaining the current approach of allocating 100 per cent of NTESMO's cost for recovery from retailers?**
- **Should some portion of the costs be recovered directly from generators? If so, how should costs be attributed and what is the appropriate metric to recover allocated costs?**

Tariff structure

NTESMO's cost recovery is currently based on a simplistic variable energy charge (based on consumption recorded at the end use customer's meter). While this methodology provides a straightforward approach to cost recovery, it has limitations in penalising larger customers as their retailer is recovering the cost based on their customers' energy volume. As such, there is only a weak correlation with the causer pays principle. There are other more sophisticated charging metrics that would better align the recovery of NTESMO's costs with the causer pays principle.

The existing approach also has important implications for NTESMO's cost recovery given the increasing penetration of behind the meter solar. While the current approach of a variable \$ per kWh fee may encourage consumers to reduce electricity use, a retailer with a customer that has rooftop solar is charged

¹⁰ See AEMO, Electricity Fee Structures, Final Report and Determination, March 2021.

on a 'net' basis – that is, exports from their connection (National Meter Identifier – NMI) is deducted from metered consumption, reducing the fees paid which effectively means that a customer without rooftop solar is paying more than a customer with rooftop solar, even though the service each receives from NTESMO is the same. This may result in a retailer with a low proportion of customers with rooftop solar being treated differently to a market customer with a higher proportion of customers with rooftop solar, which creates equity issues among market participants. This issue was flagged by the Commission in the previous determination for examination at the next review.¹¹

The current \$ per kWh approach can lead to inefficient pricing signals to customers. This is because NTESMO's costs are fixed but the customer's charge varies with its electricity consumption. Due to the relatively small proportion that the NTESMO charge represents in a customer's bill, it is unlikely to change end-use customer's behaviour. Though unlikely, there is a risk that some customers with more elastic demand may be encouraged to reduce consumption, invest in substitutes, or choose to avoid the NTESMO charge. This would be an economically inefficient outcome, given NTESMO's costs will not be reduced by such behaviour. An example is behind the meter solar customers who are encouraged, more than they would be otherwise, to invest in solar to avoid variable per kWh costs.

An approach to address this risk would be to charge on a fixed charge per NMI basis, which may be a more stable denominator than kWh and is also how AEMO charges for some of its cost recovery in the NEM.

Question for stakeholders

- **Do you support the introduction of a fixed NMI based NTESMO charge?**
- **If you support the introduction of a NMI based charged, what proportion of NTESMOs revenue should be recovered on this basis? For example would 50 per cent from variable \$ per kWh charge and 50 per cent from fixed \$ per NMI charge be acceptable?**
- **Should we consider any other pricing structure changes?**

Fee for managing generator and essential system service provider connections

There is a growing number of generators and essential system service providers seeking to connect or modify their connection services to the power system. Power and Water plays two important roles in this process, that of the network operator and that of the system controller. Currently, Power and Water only recovers those costs associated with network operator obligation, without any recovery for system control related functions. This is inconsistent with the causer pays and beneficiary pays principle and requires a review of the current cost recovery allocation.

There are two options to address this:

1. Incorporate an estimate of future connection costs and recover it through 'general' NTESMO charges.
2. Introduce a NTESMO connection fee for service arrangement, similar to that applied by Power and Water as the network operator. It is proposed that this would be a combination of:
 - a. quoted services, applying an hourly rate approved by the Commission; and
 - b. fee based services, approved by the Commission.

¹¹ Utilities Commission, 2019 System Control Charges Review, Final Decision, 30 April 2019, pp. 10-11.

We are currently proposing that option two provides more efficient and equitable customer outcomes because:

- forecasting the number of connection applications 3 to 7 years in advance is somewhat difficult and driven by independent third-party decision making, which will likely lead to forecast error
- it provides an incentive to connection applicants to ensure application documentation is complete and of a high quality, reducing NTESMO's resource requirements
- it provides the appropriate causer pays signals to connection applicants who will subsequently have economic transparency of the full end to end cost of their connection when making their investment decision
- the broader NTESMO customer base is not required to pay for connection applications made by other entities.

Question for stakeholders

- **Should NTESMO fee for service charges be introduced for connection applications?**
- **Should NTESMO consider other charging arrangements for connection applications?**

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