

Territory Electricity Market

Overview Paper

New arrangements for the Northern Territory's electricity supply to facilitate an orderly and efficient transition to renewable energy

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1. Purpose

The purpose of this paper is to inform stakeholders of the Northern Territory Government's decision to implement fundamental changes to the electricity market arrangements in the Northern Territory. The Territory Electricity Market (TEM) includes major changes to existing wholesale market supply arrangements in each of the three regulated power systems and this paper provides an overview for stakeholders on:

- the main components of the TEM and the rationale;
- indicative implementation schedule; and
- the approach to ongoing stakeholder engagement during the implementation phase.

2. Background

The Northern Territory Government commenced major reforms in the Northern Territory's electricity sector in 2014 when contestable retail and generation businesses of Power and Water Corporation (PWC) were separated to create two new government owned corporations – Jacana Energy with retail functions and Territory Generation (TGen) with exclusive generation function. PWC retained responsibility for system control and electricity networks.

Since then, various reform proposals have been considered to establish suitable wholesale electricity supply arrangements in the context of the Northern Territory's small and isolated power systems, particularly in Darwin Katherine Electricity System (DKES) through the establishment of the interim Northern Territory Electricity Market (I-NTEM). However, it has become apparent that an orderly and efficient transition to greater levels of renewable energy poses important challenges that need to be addressed as part of a workable market design to ensure affordable, secure and reliable energy to electricity customers.

Modern power systems need to operate within a market-based framework that provides for:

- planning to reliably meet the forecast long-term needs of the electricity system, including renewable energy targets;
- least cost procurement of the generation required;
- dispatch of generation to securely meet real-time demand of the electricity system
- settlement of revenues; and
- clear roles and responsibilities for market participants and power system operation that are governed by transparent system and market rules.

No perfect model exists and there are many approaches to the design of these functions. The challenge for the Northern Territory Government has been to develop a framework that is fit for purpose for the relatively small size of the Territory's power systems.

In 2022 the Northern Territory Government via the Department of Industry, Tourism and Trade (DITT) undertook a comprehensive review of the electricity market policy direction. The assessment was not limited to DKES, but also sought to determine the best arrangements for regulated power systems in Alice Springs and Tennant Creek as well. This review was undertaken in the context of the Government's electricity reform objective as shown in Figure 1.

Figure 1: NT Government electricity reform objectives

The primary objective for the electricity sector is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- *price, quality, safety and reliability and security of supply of electricity;*
- *the reliability, safety and security of the Northern Territory's local electricity systems; and*
- *the achievement of targets set by the Northern Territory Government, in particular, the target of 50% renewable energy by 2030.*

Common challenges were identified across all three regulated power systems. These challenges include creating a market design that would support efficient renewable energy investments, address disparate governance roles within each regulated power system, address problems in timely connection of new generation to the network, the need for more transparency in generation dispatch and power system operation, and inadequate transparency of system costs. These issues highlighted the need for a revised market supply arrangement for the three regulated power systems in the Northern Territory. This becomes especially critical in meeting the Northern Territory's 50% Renewable Energy Target (RET) by 2030.

The Northern Territory Government has decided to adopt market arrangements that incentivise investment in renewable generation technologies to meet the RET while ensuring electricity supply remains reliable and energy cost remains affordable for Northern Territory households and businesses. The TEM seeks to meet the evolving energy needs of Northern Territory through a fit-for-purpose market design that recognises the characteristics of each regulated power system.

In developing the TEM, the Northern Territory Government has been advised by the Electricity Market Reform Implementation Taskforce (EMRIT)¹ which has now been tasked with administering the implementation of the adopted market design (see section 8). In forming these recommendations, EMRIT considered expert advice, and feedback from consultations with various industry participants and stakeholders on the proposed supply arrangements for each of the three regulated power systems.

3. TEM summary

Central to the new market design for DKES is what is termed as a "public procurement model". This market design will centralise the planning and procurement of wholesale electricity services within the DKES, coordinating generation investment and connection through the centralised process.

This centralised approach reduces the investment risks that are becoming critical stumbling blocks in energy markets transitioning to higher levels of renewable energy supply. This new approach seeks to address many of the fundamental challenges that liberalised wholesale energy markets are facing in terms of attracting generation investment, accommodating new technologies and providing adequate levels of essential system services to maintain a secure and reliable power system.

The public procurement model provides the most pragmatic way for meeting the Northern Territory Government's vision for improved renewable energy integration that ensures a secure, reliable and

¹ The Northern Territory Government established the EMRIT in January 2023 to provide advice on the implementation of electricity sector reforms. EMRIT is chaired by the CEO of DITT, and membership includes the Under Treasurer and an independent electricity sector expert. EMRIT is now tasked with carrying out the implementation of the TEM reform, supported by DITT.

affordable energy future. It not only facilitates an orderly transition to renewable energy but also promotes investment certainty in meeting the 50% RET by 2030.

The Northern Territory Government has also decided to adopt a sole supplier arrangement for the Alice Springs and Tennant Creek power systems. Under this arrangement, TGen will be established as the sole supplier and mandated to efficiently integrate greater levels of renewable energy in these power systems under appropriate regulatory oversight.

4. Market arrangements for the DKES

The key purpose of the public procurement model is about harmonising the diverse aspects of DKES, from the strategic planning of generation and network infrastructure investments to the operational dynamics of maintaining a secure and reliable electricity system.

This approach will bridge the gap between current energy capacity needs and integrating higher levels of renewable energy to maintain grid security and reliability. It involves a series of coordinated steps and mechanisms aimed at streamlining investments, optimising generation resources, and ensuring that all market participants in the electricity sector contribute to and benefit from a more sustainable and reliable energy supply.

This section provides an overview of the key elements of how the public procurement model for the DKES will work. Additional details on specific arrangements for each process will be developed further by EMRIT with appropriate stakeholder consultation during the implementation phase.

Under the public procurement model design:

- The Northern Territory Electricity System and Market Operator (NTESMO) will be tasked to periodically develop a Regulated Electricity System Investment Plan (RESIP) that will determine the investments required to meet the needs of the power system and the Government's renewable energy policy. The RESIP will be approved and mandated by the Minister for Renewables and Energy.
- NTESMO will undertake a central procurement process to procure the electricity services as outlined in the RESIP and in alignment with the Market Rules. A procurement panel comprising of Northern Territory Government, NTESMO, PWC and an independent expert will evaluate tenders and award contracts based on value for money and Territory. This process will be open to both new proponents and existing providers looking to expand capacity.
- Contracts awarded to generators will consist of availability payments with obligations for those generators to make their capacity available for dispatch in real-time. Failure to present capacity for dispatch in real-time will result in financial penalties.
- NTESMO will operate the power system to securely supply electricity at lowest cost. Generators dispatched for energy or power system security and reliability will receive payments to cover their variable costs of generation. Thus, generators will be kept whole for their fixed and variable costs.
- The overall cost will be recovered from retailers on a fair and equitable basis, considering their contribution to system peak and total energy consumption.
- Existing contracts between generators and retailers will be transitioned into this public procurement model, ensuring a 'no-worse-off' outcome for contract parties.
- TGen will support an orderly and secure transition to 50% renewables through an assigned minimum market share that aligns with the lifecycle of its existing asset portfolio and provides revenue certainty. This optimises the use of existing assets whilst allowing for the progressive replacement of retiring gas generators and enabling TGen to continue to invest in new capacity where competitive to do so.

5. Market arrangements for Alice Springs and Tennant Creek

The Northern Territory Government has decided that TGen, as the current primary electricity generator in Alice Springs and Tennant Creek power systems, will be designated the sole supplier for all generation supply requirements. The purpose of this approach is to create a more streamlined and unified generation market supply arrangements for in these power systems. This sole supplier arrangement will optimise the development and delivery of energy supply assets, while promoting strategic investments and innovation.

Under the sole supplier arrangements for Alice Springs and Tennant Creek power systems:

- NTESMO will develop the RESIP periodically, which will determine the investments required to meet the needs of the power systems and the Government's renewable energy policy. The RESIP will be approved and mandated by the Minister for Renewables and Energy.
- TGen, as the sole supplier, will develop and own, or contract with the private sector to deliver the assets required to satisfy the RESIP through a competitive procurement process, aimed at maximising value for money and Territory.
- TGen, under the regulatory oversight of the Utilities Commission, will be required to develop and publish a standard wholesale product offering including the terms and a forward view of pricing. A standard product offering, if unsuitable for a retailer's needs, will not preclude them from negotiating an alternative arrangement with TGen.
- NTESMO will utilise TGen's generators to securely supply electricity at lowest cost² and provide information to participants to facilitate the settlement of contracts. Any private sector generators involved will be compensated in line with their Power Purchase Agreements with TGen.
- It is intended that any existing legacy contracts between TGen and private sector generators will not be impacted by the new sole supplier arrangement and will continue pursuant to current contractual obligations between the parties

² Consistent with current arrangements in these power systems, NTESMO may also delegate this responsibility to TGen if suitable and cost effective

6. Supporting roles and governance arrangements

Implementation of the public procurement model in DKES and sole supplier arrangements in Alice Springs and Tennant Creek power systems will require supporting governance arrangements to establish and clarify the roles and responsibilities of different entities. This includes:

- Separating NTESMO from PWC to minimise any perceived conflict of interest between the power system operator and network service provider functions, with an independent entity to undertake central planning and procurement.
- Establishing a new set of Northern Territory Electricity System and Market Rules (Market Rules) that will apply to all three regulated power systems and outline the functions of different entities as well as consolidating the operations of the system and market into a single set of rules. This approach is similar to other jurisdictions where a set of rules exist as a legal instrument in their own right to govern the functions and operations of entities participating in the electricity market to promote transparency.
- Economic regulation of PWC's electricity network will continue to be governed by the National Electricity Rules applicable in the Northern Territory under the regulatory oversight of the Australian Energy Regulator.
- DITT, the primary advising agency to the Minister for Renewables and Energy, will be formally tasked with coordinating policy and market development through administering the Market Rules.
- In addition to its existing role of system control and market operator, NTESMO will play a central role in operationalising the public procurement model. This includes preparing the RESIP, conducting the central procurement process, and conducting dispatch and undertaking settlement function. NTESMO will be governed by the Market Rules and will continue to recover its costs of operation through the system control and market operator charges regulated by the Utilities Commission.

7. Implementation

Roles and responsibilities

The Northern Territory Government has tasked EMRIT with overseeing the implementation of the TEM. EMRIT is chaired by the Chief Executive Officer of the DITT, and membership comprises the Under Treasurer and an independent electricity sector expert.

EMRIT will be supported by a dedicated team of experts within DITT to develop detailed implementation plans and undertake industry consultation. EMRIT will be advised by this dedicated project team on recommendations for implementation including the development of the inaugural RESIP, formulating the necessary legislation to give effect to the features of TEM, and establishing the initial set of Market Rules.

EMRIT will directly report to the Minister for Renewables and Energy who maintains decision-making oversight and strategic direction for the reform. The Minister remains accountable for overall policy direction throughout the implementation process, including the responsibility for introducing the TEM legislation and enacting the initial Market Rules.

NTESMO is also integral to TEM implementation and execution. NTESMO will be tasked with developing and implementing the necessary tools, systems, and procedures to actualise the new market arrangements in each power system. A significant aspect of this role includes NTESMO's establishment as an independent entity separate from PWC, enabling it to effectively conduct procurement activities for DKES

upon the finalisation of the initial RESIP. NTESMO will also maintain its current role as the system and market operator during the transition process.

Stakeholder Engagement

As implementation of the TEM commences, it is critical that industry remains engaged and has the opportunity to provide valuable input into the execution of the design. Stakeholder consultation will occur through the establishment of an industry reference group comprised of all relevant stakeholders across the sector. The industry reference group will provide important feedback to EMRIT on the development of detailed rules and procedures to give effect to the new market framework. Specific stakeholders will also be targeted for individual consultation on issues that directly impact them.

Stakeholders wishing to receive updates on the implementation of the TEM are encouraged to register their details at TerritoryElectricityMarket@nt.gov.au.

Timeframes

Implementation of the TEM will be undertaken by EMRIT through two work streams:

1. Governance arrangements to clarify and enshrine through legislation the roles and responsibilities of different entities
2. Market development and implementation to give effect to the public procurement model and associated features in the regulated power systems.

Contingent upon the passage of the necessary legislation through Parliament in 2024, the projected timeline indicates that the new market arrangements for DKES could be fully operational to go live by 1 July 2026. Due to the comparatively straightforward nature of the sole supplier arrangements for Alice Springs and Tennant Creek power systems, the new market arrangements is expected to be functional by 1 July 2025.

An indicative timeline for the main activities within each work stream is shown in Figure 1.

Figure 2: Key activities for TEM implementation

	2024				2025				2026			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
WORKSTREAM 1: GOVERNANCE ARRANGEMENTS												
1.A Legislative Changes												
1.A.1 Legislation passage												
1.B Institutional Arrangements												
1.B.1 Separation of NTESMO from PWC												
1.B.2 RESIP and Investment Plan mandate approval												
WORKSTREAM 2: MARKET MODEL DEVELOPMENT AND IMPLEMENTATION												
2.A Detailed Design Development												
2.A.1 Detailed design requirements												
2.A.2 Procurement, Dispatch and Settlement processes												
2.A.3 Development and drafting of NT-ESMR												
2.B Development and Evolution of Dispatch Tools and Systems												
2.B.1 Design phase												
2.B.2 Procedures, guidelines and technology delivery												
2.B.3 Testing												
2.C New Market Go Live												
2.C.1 Alice Springs and Tennant Creek electricity systems												
2.C.2 Darwin-Katherine electricity system												

LEGEND
 ☆ Target date for a deliverable