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Design Development Team
Northern Territory Electricity Market Priority Reform Program
Department of Industry, Tourism and Trade

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Submitted via e-mail: electricityreform@nt.gov.au

Re: Draft position paper - Review of essential system services

Power and Water Corporation (Power and Water) appreciates the opportunity to make a submission on the *Review of essential system services* draft position paper released as part of the Northern Territory Electricity Market (NTEM) Priority Reform Program.

Power and Water performs two important roles in respect of the three regulated power systems in the Northern Territory, one as the Network Operator and the other as the Power System Controller (System Controller). This submission is provided from both perspectives, noting that the roles are separately licenced functions.

Power and Water agrees that the types of essential system services (ESS) that are currently managed through the System Secure Guidelines are not suitable to meet the future operational requirements of maintaining a secure power system. The rapidly increasing penetration in intermittent generation both from small scale and as well as large-scale renewable generation sources, presents a challenge for maintaining adequate ESS levels both technically as well as economically. This raises the need to re-define ESS and establish an effective procurement framework so that the necessary levels of each service can be dispatched to maintain system security at least cost.

Power and Water is committed to work closely with the Design Development Team to ensure that the Northern Territory Government's preferred policy solutions are workable from the system and network operations perspectives, and the policy objectives are achieved at least costs for consumers.

In principle, Power and Water supports the proposed approach to incentivising the provision of ESS through an efficient and effective ESS procurement framework as outlined in the draft position paper. However, the development of more comprehensive ESS arrangements is a complex process and requires careful consideration, especially given other related market arrangements that are concurrently being developed as part of the NTEM Priority Reform Program.

Overall, Power and Water considers that more analysis should be provided on the costs and benefits of the proposal framework comparing to the status quo. This includes separate analysis for all three Northern Territory's regulated systems. For example, it should be further explored whether the benefits from the proposed reforms would outweigh the costs in Tennant Creek system, and whether the reform's implementation timing should be the same for all systems. This separate analysis is especially important given that the Darwin-Katherine interconnected system ESS arrangements would need to be aligned, as a

priority, with the dispatch, settlement and capacity mechanism reforms, whereas these other reforms are not proposed for Alice Springs and Tennant Creek systems.

While the draft position paper provides high level clarity about the proposed new ESS framework, there are a number of areas where further development and detail will be needed as the policy design details are finalised. In particular, the framework for procurement of ESS services from Territory Generation (T-Gen) as well as interactions between long-term contracts and annual planning need to be further clarified to avoid material risks for service providers, market participants as well as the System Controller and Network Operator. Further development of these aspects will help to support market entry and development of a competitive ESS market.

The attached submission provides more detail on specific issues that Power and Water considers the proposed ESS framework will need to address as it is developed in more detail.

If you have any questions about this submission, please contact Zaeen Khan on 0422 727 925 or email zaeen.khan@powerwater.com.au.

Yours sincerely



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Power and Water submission in response to the draft position paper on review of essential system services (ESS)

1. Response to Chapter 2 – Service Definitions

1.1. Proposed ESS Types and Definitions

Power and Water supports the set of ESS proposed by the Design Development Team in the draft position paper.¹ We also support the proposed definitions for these services.

Power and Water agrees that it has the relevant expertise and familiarity with the requirements of the Northern Territory (NT) regulated systems to develop and publish detailed specifications and performance parameters for relevant ESS.² We also support codifying the types of ESS for use in the NT regulated systems.

As discussed in the stakeholder workshop on 25 February 2021 and noting the urgency of delivering a fit for purpose ESS framework, Power and Water supports the approach to setting the requirements for Regulating Frequency Control ESS on the basis of the existing capacity forecasting obligations in the generator performance standards (GPS). The benefit of this approach is a simplified causer pays mechanism as the inclusion of generators in causer pays for regulating services is overly complex and the importance of placing the obligation on the causing party (via the GPS presently) will be crucial to ensuring that costs do not grow uncontrollably over time. After implementation of the priority reform program, if deemed necessary, the capacity forecasting aspects of the GPS could be further investigated in conjunction with refinement of the regulation services.

1.2. Harmonisation of ESS definitions

Power and Water notes that, at the moment, ESS are defined in both the System Control Technical Code and the Network Technical Code, however, the definitions are not always aligned. More detailed specifications are also set out in the Secure System Guidelines. Power and Water is of the view that service definitions need to be consolidated and aligned.

The draft position paper also proposes for the Utilities Commission to approve the detailed ESS specifications.³ We understand this implies removing the definitions from the Secure System Guidelines and codifying them in the System Control Technical Code.

1.3. Introduction of a new service definition

In Power and Water's view, it is important to clarify what the process would be for the introduction of a new service (that is not defined in the System Control Technical Code) into an annual Essential System Services Plan (the Plan) and to procure this service.

The draft policy position is to allow Power and Water to procure additional services as needed.⁴ Power and Water welcomes this. However, we note that when a new service is identified to meet a suspected shortfall, we would have limited information about new service requirements. To define a new service and

¹ The Department of Industry, Tourism and Trade, *NTEM Priority Reform Program: Review of essential system services*, Draft Position Paper, January 2021, p. 28.

² Ibid, p. 27.

³ Ibid, p. 29.

⁴ Ibid.

associated requirements may require a substantial period of time, and, during this time, the system needs to be maintained in a secure operating state.

It may be challenging to secure the Utilities Commission's approval before introducing a new additional service into the Plan and procuring it. An interim process should be established that allows system security to be prioritised and the power system managed as needed in the absence of a clearly defined service standard and definition. There is benefit in having flexibility to refine the definitions over a sufficient period of time and test the requirements before they are codified.⁵ Once a new requirement is sufficiently understood and defined, Power and Water could then apply to the Utilities Commission during the next ESS planning phase for approval of the procurement and subsequent codification of the service definition.

2. Response to Chapter 3 - Service requirements

The draft position paper proposes for the System Controller to prepare, on an annual basis for the coming financial year, an Essential System Services Plan setting out updated ESS standards, forecast ESS requirements, how the System Controller will procure the required ESS, and a budget for the procurement.⁶

Power and Water supports having sufficient transparency and oversight arrangements to encourage participants' confidence in the efficiency of ESS procurement under the new arrangements. However, the arrangements would benefit from further consideration of the following issues in relation to the System Standards and the content of the annual ESS plan.

2.1. System Standards

System standards will play an important role in converting ESS definitions into annual requirements. To support the long-term application of the ESS framework, a defined and codified process to review and amend the standards should be established.

Power and Water considers that the final position paper should also consider:

- Harmonisation and consolidation of system standards into a single code
- Monitoring and compliance.

Harmonisation and consolidation of system standards

The measures outlined in the draft position paper would usefully be complemented by the consolidation and updating of the system standards. Currently, system standards are covered in different legislative instruments which may present confusion to stakeholders. Consolidation would remove inconsistencies between the system standards and service standards and could reduce the amount of analysis to be undertaken as part of the proposed annual ESS planning process.

As an example, there could be a potential governance issue with parts of the frequency operating standard being located in the Secure System Guidelines (which can be amended without requiring the approval of the Utilities Commission) and the service standards being approved by the Utilities Commission as part of the Essential System Services Plan.

Reviewing the system standards would promote consistency and clarity for stakeholders as well as eliminate repetition across different legislative instruments, and the Design Development Team may

⁵ . For example, while some services are well defined and understood, like frequency control services, others, like system strength, need thorough analysis to be well understood, defined and then codified.

⁶ Ibid, p. 34.

therefore wish to consider whether there would be benefits in such a review being undertaken in parallel with the implementation of the NTEM Priority Reform Program.

Monitoring and compliance

It is important to establish a workable compliance framework to ensure compliance with the standards. Real-time monitoring tools, such as digital disturbance recorders and improved telemetry and control via SCADA, are likely to be required but this may have cost implications for generators.

2.2. ESS Plan

In relation to the proposed annual ESS Plan (Plan), this submission raises the following three issues:

- The requirement to review ESS service standards on an annual basis
- Interactions between an annual Plan and long-term bilateral contracts
Publication of the proposed budget and long-term marginal cost estimates.

Review of ESS service standards

It is likely to be a disproportionate use of resources to review the ESS service standards every year.⁷ This is because:

- Given that many contracts are likely to be in excess of a year in duration, and once the definitions and service standards are set, an annual process may be unnecessary.
- Actual technical envelopes need to be clearly defined as part of the reform implementation process and the service standards should be fit for purpose from commencement. In that case, there would be no benefit reviewing the service standards annually.
- If the annual Plan varies service standards, this will make it more complicated to ensure that aspects of the existing technical codes remain fit for purpose.
- Having the service standards subject to review and approval on an annual basis creates uncertainty in the market and may adversely impact cost of procurement.

Power and Water recommends reviewing the ESS service standards and requirements when the need is identified to do so.

Any review of the ESS service standards will effectively be a trade-off between costs and the customer experience (security/reliability). Therefore, there needs to be a comprehensive process and stakeholder consultation given the outcomes will likely be contentious regardless of the effort undertaken. An annual process will require significant additional effort from the Utilities Commission to approve the process or planning outcome and may detract from the other analysis needed for the annual Plan.

In summary, Power and Water recommends that future reviews of ESS service standards are executed through a separate process outside of the annual Plan when the need for review has been identified. Practically, it may be appropriate that the Plan is used to trigger a review of the ESS service standards as required, however to ensure that the Plan can be delivered in a timely manner the review will need to be a separate process, and therefore only impact the subsequent annual Plan.

⁷ Ibid, p. 34.

Interactions between an annual Plan and long-term bilateral contracts

The final position paper should provide more information on interactions between an annual Plan and long-term bilateral contracts (5-10 years). We note that, if most services are procured through long term bilateral contracts, then the amount of new services to be procured each year may be negligible. The requirement makes a complex and resource intensive annual process seem disproportionate. Therefore, the content of the Plan should be flexible to accompany procurement via long term contracts.

Given the needs of investors for information over the long-term, there may be a need for the annual Plan to have a planning horizon that is longer than a single year. Hence, Power and Water suggests that the following information be provided:

- An annual backward-looking ESS report that would include information on the costs and quantities of ESS procured, and whether the quantities were sufficient to meet the system needs during the previous year
- An annual long-term plan for the next 4-5 years that would describe forecast requirements to meet the system needs and include the schedule for the service procurement rounds.

Publication of a budget and long-term marginal cost

Power and Water has concerns with the proposed requirement for the System Controller to publish a forecast budget for ESS costs and long-run marginal costs (LRMC) in the annual Plan as this can influence the costs of procurement and lead to perverse outcomes. Under this requirement, service providers could be incentivised to bid prices based on the budget rather than their costs.

Instead, the budget and LRMC forecasts should be provided to the Utilities Commission on a confidential basis, while participants should be guided by historical costs of ESS procurement. Further, we question a need to develop a budget and estimate LRMC on an annual basis, given the long-term bilateral contracts likely to be in place.

3. Response to Chapter 4 - Service provision framework

The draft position paper proposes that the most appropriate balance between costs and benefits would be achieved by the System Controller procuring ESS through bilateral contracts that are entered into following a competitive tender or reverse auction process.⁸

The draft position paper proposes a competitive provision framework for ESS that would empower and oblige the System Controller to enter into an essential system services contract, where:⁹

- it does not consider it can meet the essential system services requirements from T-Gen's existing facilities; or
- it considers an essential system services contract provides a less expensive alternative to essential system services provided by T-Gen's existing facilities.

In principle, Power and Water supports these aspects to the ESS framework. However, to form a complete view on the proposal more information is needed in relation to the procurement terms for ESS, the frequency of procurement rounds, interactions between procurement processes and the annual Plan as well as the risk mitigation measures available to Power and Water. These issues are discussed below.

⁸ Ibid, p. 43.

⁹ Ibid, p.50.

A common question on these issues is the approach to a provider of ESS which is capable of serving different ESS simultaneously and how to compensate such providers. The final position paper should inform how the efficiencies gained by a provider of a portfolio of ESS would be realised in the framework in terms of the pricing for individual services.

3.1. Contracting

Entering into contracts for the provision of ESS presents risks for Power and Water. While we agree with the view expressed in draft position paper that Power and Water is the most appropriate body to enter into such contracts, more information will be required on how contracting risks could be mitigated. Specifically:

- Adverse interactions between contract terms, the frequency of procurement and the proposed annual Plan could create a material risk of the policy intent not being met. This is especially the case if the offered contract prices turn out to be higher than future estimates of LRMC.

Given the significant change in the generation mix underway and technology advancement, declining costs are expected for the provision of most ESS; however, it may not always be possible to accurately forecast future prices when agreeing the contract terms.

Power and Water will require further guidance as to how it is expected to make decisions between procuring through long-term contracts which are anticipated to exceed LRMC before expiry, and short-term contracts that may have a higher unit cost, but would allow recontracting sooner at a lower LRMC.

- Power and Water would like to understand what structures of contracting are envisaged under the draft policy position (fixed payments, enablement payments, payments based on unit variable costs). It is anticipated that the contracting arrangements would provide a mechanism to recover from a non-performing ESS provider, but the form of contracting will place risk with the System Controller, that may otherwise be managed through a regulatory mechanism. Complementary to that is the prudential arrangements for the associated settlements to ensure that the System Controller has the funds to pay for the procured ESS. In addition to this detail, the final position paper could provide clarification on whether contracting with T-Gen would be required or the administered pricing arrangements would be given effect directly via the Rules.

The pace of change in the generation mix in the NT is even more significant than in other Australian jurisdictions due to the large volumes of intermittent generation entering the systems compared to the low average operational demands. The rapid shift to intermittent generation may initially undermine Power and Water's capability to conduct accurate long-term ESS planning, which is a fundamental input for the procurement of long-term ESS contracts. While planning capability will improve over time¹⁰ there could be initial forecasting issues which will impact procurement decisions.

3.2. Contingency frequency control enablement

The efficiency of contingency frequency control services could be enhanced if the enablement of raise and lower services was capable of being adjusted on a dynamic basis. Frequency control raise and lower services will need to cater for the largest credible contingency event and, since dispatch and load conditions vary over time, the most onerous credible contingency events managed will also vary over time.

¹⁰ Especially once the new system requirements are better understood, system models accurately reflect the changes and the standards are established.

Power and Water suggests that the Design Development Team give further consideration to the implications of this issue.

3.3. Co-optimisation of energy and ESS

The efficiency of contingency frequency control enablement could be further enhanced through the co-optimisation of frequency control services and energy market dispatch. There could be instances when it might be more cost-effective to constrain the output of a large generating unit or a number of units than to enable the full amount of contingency frequency control raise services.

While Power and Water broadly agrees with the analysis in the draft position paper relating to the co-optimisation of energy and ESS, we consider that limited co-optimisation would still be possible using variable and enablement costs in long-term contracts to co-optimize the deployment of services. The information on ESS prices and capacity will be available for incorporating into the dispatch process. There is a need to allow the dispatch process to be able to make appropriate optimisation decisions that weigh up the benefit of adjusting energy market dispatch to optimise the total cost of energy and ESS provision.

Power and Water encourages the Design Development Team to further evaluate the benefits of achieving a level of dispatch optimisation across the ESS and energy markets.

3.4. Procurement process by the Network Operator

The draft position paper provided limited information in relation to the procurement process that would be undertaken by the Network Operator for voltage management and system strength services.¹¹ More detail on the processes for provision of such services, including the interactions with the processes/requirements established for these services under the GPS is required in finalising the policy design. It is important there is due consideration of portfolio ESS providers in this process whereby investment efficiency is secured through mutual coordination of the ESS procurement between the Network Operator and System Controller under different regulatory instruments.

Power and Water is of the view that the provision of these services is somewhat different from other services. Issues that are caused by generators connecting should be managed as part of the connection process. Issues caused by generators retiring or by the increase in behind-the-meter generation are likely to have to be addressed by the Network Operator. This could be either through the Network Operator investing in assets (e.g. synchronous condensers) or by procuring services. Procurement for these services therefore needs to be integrated into the Network Operator planning and investment process and that the reforms are aligned with the AER's revenue and pricing arrangements. The Network Operator must have the opportunity to recover its efficient costs of ESS procurement.

Corresponding changes to the current NT National Electricity Rules (NER) would likely be required to enable the Network Operator to pass through to consumers the costs associated with providing voltage management, network support and system strength services. This is because the Australian Energy Regulator (AER) regulates the Network Operator in the NT as a Distribution Network Service Provider (DNSP).

¹¹ Ibid, p. 29.

In the National Electricity Market (NEM), Transmission Network Service Providers (TNSPs) are allowed to pass through the costs of network support payments to customers.¹² A network support payment includes any payment made by a TNSP to a generator (or other service provider) for a service that is an alternative to network augmentation, including a system strength service payment.¹³

However, there is no dedicated pass through mechanism for network support payments for DNSPs. The NER does make provision for cost pass throughs for DNSPs but, for payments to network support providers, these would need to be foreseen and specified in the distribution determination at the start of the regulatory period.¹⁴ In addition, the NER requires that a cost pass through event must 'materially' impact a DNSP's maximum allowed revenue for that regulatory year. Materially is defined as more than one per cent of the DNSP's maximum allowed revenue for that regulatory year.¹⁵ No such materiality threshold applies for TNSP network support payments.

Power and Water considers that, similarly to the TNSPs in the NEM, the Network Operator should be allowed to pass through to customers the costs associated with ESS service procurement, with no materiality threshold. This is achieved by modifying the application of the relevant NER provisions in the Northern Territory through local regulations.¹⁶

3.5. Interactions with energy market pricing

Power and Water considers that the interactions between constraints associated with ESS and the out of balance energy market price need to be explored in further detail as they are interdependent. Specifically, the approach considered in the dispatch and settlement design is to set the out of balance energy price on the marginal unconstrained generating unit.

With regional pricing for energy, contingency frequency control raise requirements would likely constrain all generators operating in the southern region (Katherine) as a result of the 132kV line contingency management, which could trigger a separate regional market price. This implies that all generators in the southern region may be constrained to fit within the ESS available (rather than to provide ESS) and as all generators would be constrained, they would therefore be unable to set the market price for the region to recover costs for the production of out of balance energy.

By relating to contingency frequency raise to spinning reserve, for the purpose of demonstrating an example, this issue can be more readily understood. In this example if the load in the southern region is 25 MW and the northern region carries 30 MW of spinning reserve, the total dispatch of generation in the southern region would be limited to 55 MW to ensure that only 30 MW is transmitted to the northern region (Darwin) through the 132kV line. This 55 MW dispatch limit would constrain all of the southern region generators to fit within the 'spinning reserve/contingency raise' capability and therefore the price within the southern region would be set at the floor price of zero (as there is no marginal unconstrained generator). In this circumstance the generators in the southern region are not constrained on to supply ESS, and therefore would be unable to recover any of their costs of production from ESS procurement.

¹² Clause 6A.7.2 of the NER.

¹³ Chapter 10 of the NER.

¹⁴ Clause 6.6.1 of the NER.

¹⁵ Chapter 10 of the NER.

¹⁶ From 1 July 2016, the NER, as amended from time to time, apply in the NT, subject to derogations set out in regulations made under NT legislation adopting the NEL. Under those regulations, only certain parts of the NER have been adopted in the NT.

This is potentially problematic as the costs associated with the provision of out of balance energy, as described in the example above, would go unpaid due to constraints applied under an ESS mechanism. To ensure participants are made whole, it may be necessary to consider an alternative to what is presently envisaged. It would be helpful to model a few of the more likely dispatch scenarios to determine the consequent energy and ESS pricing outcomes and to then consider the best approach to coordinating energy and ESS payments.

3.6. Interactions with the capacity mechanism

Power and Water is of the view that interactions between ESS reforms and the proposed capacity mechanism need to be further considered, specifically, whether there would be a risk of the double-recovery generators' fixed costs through the ESS provision or capacity mechanism. It is recommended that the Design Development Team provide clear direction on how providers would be compensated when providing both ESS and capacity services.

4. Response to Chapter 5 - Administered pricing arrangements and market power mitigation

The effectiveness of the ESS framework will depend on how well it facilitates the transition to a competitive market for ESS. Hence the arrangements for the pricing and procurement of services from T-Gen will be an important factor in how service providers evaluate entry and offering ESS. On these arrangements, our submission raises the following two points for further consideration:

4.1. Administered pricing

Power and Water is of the view that it should not have any role in the determination and approval of T-Gen's costs for the provision of each ESS. Responsibility for this would more appropriately be assigned to the Utilities Commission. The proposed process should be amended to include interaction between T-Gen and the Utilities Commission in relation to cost approval. This is because the System Controller does not have any visibility over the T-Gen's costs and would not be in a position to verify them.

Overall, the System Controller involvement in this process is an unnecessary step that would not promote process efficiency and may assign accountability on the cost efficiency of the framework to the wrong party.

4.2. Interaction between administered price, LRMC and quantity of ESS

Power and Water understands that the draft policy position assumes that T-Gen costs do not depend on quantities of services provided. We consider this would not be the case. Power and Water is of the view that it would be challenging for T-Gen to determine prices without quantity inputs. It is unclear how the System Controller could assess whether a competitive provider would be a less expensive alternative to T-Gen, when T-Gen's costs will vary with its volumes. One way of resolving this might be for T-Gen to provide administered cost curves to the System Controller, in which case it may be better able to optimise the ESS procurement.

It is also unclear how the System Controller would be able to propose an initial budget for ESS procurement, given that neither the prices to be charged by competitive providers or T-Gen, nor the volume split between them will be known. It should also be clarified how the System Controller would determine what technology type should be used as the basis for the LRMC estimation.

It should be further clarified what would happen if insufficient volume of ESS was offered by competitive providers at or below the price cap (LRMC) and additional volumes were not available from T-Gen. This may result in a shortfall of procured ESS. It should be considered what the mechanism would be to address the potential shortfall under such circumstances.

In summary, determining the quantities and costs for ESS procurement is envisaged to be a multistage process that needs careful detailed consideration to ensure that there is fair opportunity for all providers. The final position paper could provide more detail on this multistage process and how outcomes could vary depending on the cost competitiveness of procurement from T-Gen.

5. Response to Chapter 6 – Cost allocation and settlement

According to the draft position paper, the policy position is that costs for ESS should be allocated according to the principle of causer pays.¹⁷ While this will be administratively more costly than the current approach, Power and Water agrees that it is likely to be more efficient, as the costs of providing ESS will be paid by the parties causing the need for those services, thereby incentivising those parties to limit their demand to efficient levels. However, a causer pay basis may not be practical or sensible to achieve in all situations and an alternative approach will be needed in those circumstances.

To help ensure that the policy intent is achieved, the following issues should be resolved for the final policy design:

- ESS requirements are likely to vary over time. Given this and to maintain cost neutrality, the System Controller would need to be able to recover costs of the ESS procurement irrespective of the amount of ESS dispatched in a given period (as may occur where forecast ESS requirements are inaccurate).
- Causer pay arrangements may not be appropriate in the following situations:
 - i. The justification for a complex causer pays arrangement for regulation frequency control is unclear given the new GPS, which require that all new licenced generators are predictable and controllable. This would seem to reduce the benefits of a price signal seeking to incentivise this behaviour.
 - ii. The ability to target the costs of RoCoF frequency control services on causers may be limited given the difficulty in attributing causation to individual parties and that shortages may be caused by parties exiting the market.
 - iii. System Strength is unlikely to be able to be recovered on a causer pays basis as the need is most likely to be triggered by a generator retiring. While there will be a mechanism for allocating costs to new entrant generators in the form of the GPS provisions in the Network Technical Code, the draft position paper does not consider the provision of the system strength service in the context of synchronous generators exiting the market. This issue needs to be considered and resolved through the policy design of the ESS mechanism.
- The rationale for charging the costs of system restart services to both customers and generators is unclear. The causer pays mechanism is aimed at attributing costs to a causer for the purpose of providing an incentive to reduce their impact to the cause of the ESS. This is not the case with the restart services.

¹⁷ Ibid, p. 58.

- Consideration on whether the proposed arrangements for energy settlement provide for the necessary data for ESS, for example there will be a need for SCADA data for regulation and contingency frequency control. If ESS data is not available for settlement purposes, there may be additional costs associated with configuring the necessary data streams to enable accurate apportioning of costs to causers.
- It is not clear how the settlement of charges for essential system services would work in Alice Springs and Tennant Creek as out of balance energy settlement is only proposed to apply to the Darwin-Katherine System.
- Developing scenario analysis exploring how settlement would be resolved if a participant did not meet their contract obligations to provide ESS, and under the scenario that this is identified after settlement.
- Further detail is needed to understand whether ESS would be considered part of the net settlement with out of balance energy or it would be handled separately.

Overall, cost allocation methods must be designed to be as simple as possible, transparent and predictable in the long term for participants. Having an appropriate codified process that defines cost allocation and recovery in sufficient detail will reduce the risk of disputes due to different interpretations.

6. Response to Chapter 7 – Implementation

Power and Water considers that, prior to policy finalisation, there may be a benefit in drafting preliminary design and high-level processes to ensure that the final policy positions are fit-for-purpose.

6.1. Costs and benefits

More analysis should be provided on the costs and benefits of the ESS proposals compared to the status quo, specifically separate analysis for all three Northern Territory's regulated power systems. For example, it should be further explored whether the benefits from the proposed reforms would outweigh the costs in the Tennant Creek system, and whether the implementation timing of the reforms should be the same for all systems. This separate analysis is especially important given that the DKIS system ESS arrangements would need to be aligned with the dispatch/settlement and capacity mechanism reforms, whereas these other reforms are not proposed for Alice Springs and Tennant Creek systems.

6.2. Timeframes for the ESS processes

Power and Water would appreciate the Design Development Team providing more information on the anticipated timeframes for updating the annual ESS Plan. Power and Water has concerns that these processes may take anywhere up to, or potentially even longer than, a year and would require substantial additional resources. This is especially the case given that the processes need to be performed for the three regulated power systems. Further, we would appreciate clarification on what would happen if inputs from T-Gen or the Utilities Commission's decision are delayed, and how any resulting ESS shortfalls should be handled by the System Controller.

Through our initial analysis we have identified the following key process steps as outlined in Table 1 and 2 below. We also provide our estimation of the required time to complete these steps.

Table 1: Estimated Annual ESS Plan process steps and potential timeframes

Key process steps	Potential timeframe
1. The System Controller calculates the estimates of LRMC that would be used to cap market offers from competitive providers	8 weeks
2. The System Controller uses pricing information, combined with the costs of any ongoing contracts, to calculate the costs associated with meeting the previous year service standards and to determine whether any modifications to these standards could be net beneficial	8 weeks
3. The System Controller prepares the draft of the Essential System Services Plan and provides to T-Gen	Can be done in parallel with the above
4. T-Gen produces updated auditable actual estimated costs for each of the ESS required, including unit variable, enablement and fixed costs and provides to the System Controller (following any role for UC in assessing and approving T-Gen cost forecasts)	4-8 weeks (subject to T-Gen's timely inputs and any role for UC in approving T-Gen costs)
5. The System Controller finalises the Essential System Services Plan and provides to the Utilities Commission for approval	1 week ¹⁸
6. The Utilities Commission considers the Plan and either approves or re-determines the Plan	12 weeks (will depend on whether there is a need to re-determine)
7. The System Controller publishes the approved Essential System Services Plan	<1week

Table 2: Estimated Service procurement process steps and potential timeframes

Key process steps	Potential timeframe
1. The System Controller develops procurement documentation whilst the Essential System Service Plan is with the Utilities Commission for Approval.	No additional time required – parallel to ESS annual planning process
2. The System Controller publishes procurement documentation alongside the approved Essential System Services Plan	No additional time required – parallel to ESS annual planning process
3. Participants prepare offers for submission to the System Controller	6 weeks
4. The System Controller assesses offers	10-12 weeks
5. The System Controller finalises contracts with competitive providers	4 weeks
6. The System Controller enters into arrangements with T-Gen for residual requirements	Depends on whether the System Controller contracts or just notifies T-Gen of requirements

¹⁸ This assumes that a budget has already been developed for the draft of the Plan sent to T-Gen. If T-Gen provides cost curves, this step may take longer as it would be where the budget is finalised.

Our estimate shows that the total process for planning and procurement would take in excess of a calendar year. Power and Water has some concerns whether a year is a reasonable time to complete these tasks for the three power systems.

6.3. Compliance framework

The draft position paper did not contain any description of the compliance framework for the ESS framework. Power and Water considers that the proposed ESS mechanism needs to be subject to the regulatory oversight, with compliance requirements and associated penalties/incentives being established by the Utilities Commission. Specifically, compliance processes should be established for:

- Accreditation of ESS capabilities and performance review process
- Reconciliation in settlement
- Dispute resolution in an event of a non-compliance.

6.4. Implementation timeframes

Given the work that still needs to be performed to ensure that the ESS reforms are implemented effectively, Power and Water has some concerns whether the ESS reforms could be implemented by the end of 2021. In our view, there are three key elements that may impact the commencement of the proposed changes:

1. Substantial further policy design and analysis are needed to inform a final policy position and to finalise a fit-for-purpose ESS mechanism
2. After certainty in the policy design is achieved, there will be substantial process and system development prior to implementation requiring commensurate time and resources
3. As currently proposed, determination and procurement of the ESS required may take over a year to procure or at least 37 weeks if it was solely procured from T-Gen through an administered pricing regime.