Prudency, Operability, and Consumer-Risk Visibility in Basslink's System Security Network Support Contract Review

Submission to the Australian Energy Regulator (AER)

Consultation

Basslink System Security Contract Review Application (May 2026)

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Submission Context

This submission comments on APA Group's application for approval of a System Security Network Support Service (SSNS) contract associated with the Basslink Frequency Control System Protection Scheme (FCSPS). It is prepared in the context of CSPER's work on inverter-dominated electricity systems, regulatory observability, adaptive governance, operability uncertainty, and consumer-risk visibility. The submission does not oppose Basslink operational continuity, system-security services, or the present role of the FCSPS in supporting Tasmanian frequency security and Basslink transfer capability. Its focus is how long-duration arrangements should be assessed as inverter behaviour, system-strength conditions, battery deployment, operating standards, and security requirements evolve. The central argument is that regulatory robustness depends not only on whether a service is prudent and efficient at approval, but also on whether its assumptions, operating conditions, performance outcomes, and consumer-risk implications remain observable and reviewable over the contract lifecycle.

Executive Summary

i. Context

Basslink is a strategically significant Tasmania-Victoria interconnector supporting energy transfer, market integration, supply flexibility, and system security. Its transfer capability relies on the Frequency Control System Protection Scheme (FCSPS), which provides fast-acting load-tripping and generator-tripping services during credible contingency events. APA's application therefore concerns a material system-security arrangement rather than a routine network-service cost item.

The application is being assessed during a period of major NEM transition characterised by increasing inverter-based resources, changing system-strength requirements, growing battery deployment, declining synchronous inertia, and evolving contingency-management frameworks. Similar challenges are being examined internationally by NERC, ENTSO-E, IEA, NREL, IEEE PES, OECD and others. Accordingly, the review raises a broader question: how can long-duration system-security arrangements remain prudent, efficient, and observable as operating conditions evolve?

ii. Position of this submission

This submission supports operational continuity and prudent system-security procurement. However, it argues that regulatory robustness increasingly depends on lifecycle transparency because the assumptions underpinning contingency performance, system strength, emergency response, and consumer exposure may change over the contract term. In increasingly inverter-dominated systems, prudency and efficiency become more condition-dependent. Approval should therefore preserve visibility of operational assumptions, realised performance, technical change, and consumer exposure throughout the contract lifecycle.

iii. Core observations

A. Prudency is condition-dependent

The proposed SSNS arrangement may be prudent under current conditions, but prudency should not be regarded as static. Future operational value may be influenced by inverter-based resource growth, battery deployment, grid-forming capability, evolving frequency-control and system-strength frameworks, changing interconnector utilisation, and revised protection requirements. Long-duration arrangements therefore require transparency and reviewability.

B. Sole-provider procurement increases the importance of transparency

The SSNS arrangement operates within a constrained-provider environment linked to the Tasmanian system and the FCSPS. Limited comparators do not imply inefficiency, but they increase the importance of cost transparency, methodology disclosure, operational reporting, and lifecycle review. Where competitive procurement evidence is limited, observability becomes an important mechanism for maintaining confidence in prudency and efficiency.

C. Availability-based payment structures require operational observability

Availability is necessary but does not by itself demonstrate realised operational value or future effectiveness under changing conditions. Availability-based arrangements should therefore be supported by:

- operational-performance reporting;
- event-response and disturbance monitoring;
- transparency of key technical assumptions; and
- lifecycle visibility of realised contingency-management outcomes.

D. Consumer-risk visibility should be maintained across the contract lifecycle

Consumer exposure may evolve through contract amendments, changing operating requirements, evolving technical standards, and new technology integration. Regulatory robustness should therefore preserve:

- visibility of material changes;
- structured lifecycle reporting;
- reviewability of operational and contractual developments; and
- transparency regarding changes in assumptions or service scope.

E. Adaptive governance is increasingly important

The NEM transition requires adaptive governance rather than static oversight. Long-duration SSNS arrangements should be supported by:

- lifecycle reporting;
- reviewability of material changes;
- operational visibility during disturbance events; and
- governance frameworks capable of adapting to evolving inverter-dominated operating conditions.

This approach is consistent with emerging Australian and international practice in system-security planning, inverter-based-resource governance, infrastructure lifecycle management, reliability monitoring, and adaptive electricity-system regulation.

Accordingly, the AER should continue supporting prudent and efficient system-security arrangements while strengthening lifecycle observability, operational transparency, and adaptive oversight mechanisms for long-term SSNS contracts.

Table 1. Summary of Main Issues

Area	Key Issue	Regulatory Concern	Suggested Response
Prudency	Operating conditions may evolve over the contract horizon	Current assumptions may not remain fully representative under future NEM conditions	Introduce periodic operability review mechanisms
Procurement	Sole-provider procurement structure	Limited benchmarking visibility and reduced competitive comparability	Strengthen transparency and lifecycle reporting
Availability-based payments	Availability does not necessarily equal realised operability	Operational readiness may diverge from realised contingency performance under evolving conditions	Improve operational-performance observability
Consumer exposure	Lifecycle uncertainty	Long-term exposure may evolve through amendments, technical change, and operational evolution	Maintain structured lifecycle reporting and reviewability
Technology assumptions	Future inverter, ESS, and grid-forming capability evolution	Technical assumptions increasingly influence regulatory and operational outcomes	Improve transparency of underlying technical assumptions
System operability	Dynamic inverter-dominated operating conditions	Future contingency behaviour may differ from historical synchronous-system assumptions	Maintain ongoing event-response and disturbance visibility
Governance	Long-duration SSNS arrangements under changing NEM conditions	Static oversight frameworks may become insufficient under evolving operational environments	Support adaptive governance and periodic reassessment pathways
Performance transparency	Availability metrics alone may not capture realised operational value	Limited visibility of actual operational outcomes	Strengthen utilisation and contingency-performance reporting
Regulatory robustness	Future conditions may evolve materially during the contract lifecycle	Reduced interpretability of prudency and efficiency over time	Preserve lifecycle observability and operational transparency

1. Introduction

1.1 Purpose of the submission

This submission responds to APA Group's application to the AER for an ex-ante determination that the proposed SSNS payment methodology for the Basslink FCSPS contract is likely to be prudent and efficient under the National Electricity Rules (NER) [1]. It does not reassess Basslink's operational significance or the immediate need for system-security services. It provides targeted technical and regulatory comments on prudency, efficiency, transparency, operability, and lifecycle observability in long-duration arrangements.

This matters because contemporary power-system behaviour increasingly depends on inverter-based resources, dynamic operating conditions, distributed energy resources, and evolving system-strength requirements. AEMO's system-strength and system-security work shows that secure NEM operation increasingly depends on fault-level capability, inverter interaction, essential system services, and operability constraints [3, 4].

International work from the IEA, NERC and ENTSO-E similarly identifies growing challenges around inverter response, disturbance behaviour, modelling assumptions, observability, and stability management in power-electronics-dominated systems [5-7].

The assessment should therefore consider not only whether the service is prudent under current assumptions, but also whether technical assumptions, operating conditions, availability mechanisms, and consumer-risk implications remain transparent and reviewable over the contract lifecycle.

This approach aligns with Australian planning and regulatory developments, including AER system-strength guidance, AEMO's ISP and Engineering Framework, and broader reforms recognising that system security is increasingly dynamic and condition-dependent [8-10].

1.2 Scope

This submission does not oppose Basslink's role in the NEM or dispute the importance of Tasmanian system security and Tasmania-Victoria interconnection capability. It recognises that the FCSPS supports secure Basslink operation under current contingency-management requirements.

The submission also recognises the SSNS framework under the NER and does not challenge system-security procurement or the need for reliable contingency-management capability. The scope is governance robustness, evolving system conditions, and future observability. It considers assumption transparency, service availability and realised performance, constrained procurement, lifecycle consumer-risk visibility, and adaptive review mechanisms where future conditions differ from those assumed at approval.

Prudency and efficiency assessment is therefore increasingly condition-dependent. Current arrangements may be prudent, but their assumptions still need reporting, reviewability, and lifecycle observability. For this reason, the Basslink SSNS review should be treated not only as a contract-pricing matter, but also as a case for governing long-duration arrangements under dynamic and inverter-dominated NEM conditions. For these reasons, this submission treats the Basslink SSNS review not merely as a narrow contract-pricing exercise, but also as an important case for considering how future system-security arrangements should be governed under increasingly dynamic and inverter-dominated electricity-system conditions. Hence, the submission recommends that regulatory assessment should continue to support efficient and reliable system-security outcomes while also maintaining adequate visibility regarding technical assumptions, operational performance, and long-term consumer exposure over the contract lifecycle.

2. Tasmanian System Context and Emerging Conditions

2.1 Basslink operational significance

Basslink is the only existing HVDC interconnection between Tasmania and Victoria. APA describes it as a 370 km, 500 MW HVDC interconnector across Bass Strait, enabling power transfer, energy trading, supply adequacy support, and interaction between Tasmania's hydro-dominated generation portfolio and the broader NEM [14].

Its value is closely linked to Tasmanian frequency-control and contingency-management requirements. APA states that Basslink's transfer capability depends on the FCSPS because the transfer can exceed the single-contingency size allowed under Tasmanian frequency standards without mitigation [15]. This reflects the long-standing Tasmanian frequency-security issue identified in AEMC material and Hydro Tasmania's submission: without available load or generation for FCSPS tripping, Basslink would be limited to lower import and export levels to maintain compliance [16, 17].

The FCSPS is therefore an enabling system-security arrangement, not a peripheral feature. AEMO incident reporting shows the scheme tripped load during Basslink-related events and helped maintain Tasmanian frequency within the Frequency Operating Standard [18, 19].

As Figure 1 shows, Basslink transfer capability depends on fast-acting load- and generator-tripping arrangements that maintain Tasmanian frequency-security compliance during credible contingency events. The contract therefore raises questions of prudency, efficiency, lifecycle observability, contingency-performance visibility, and long-term operational robustness.

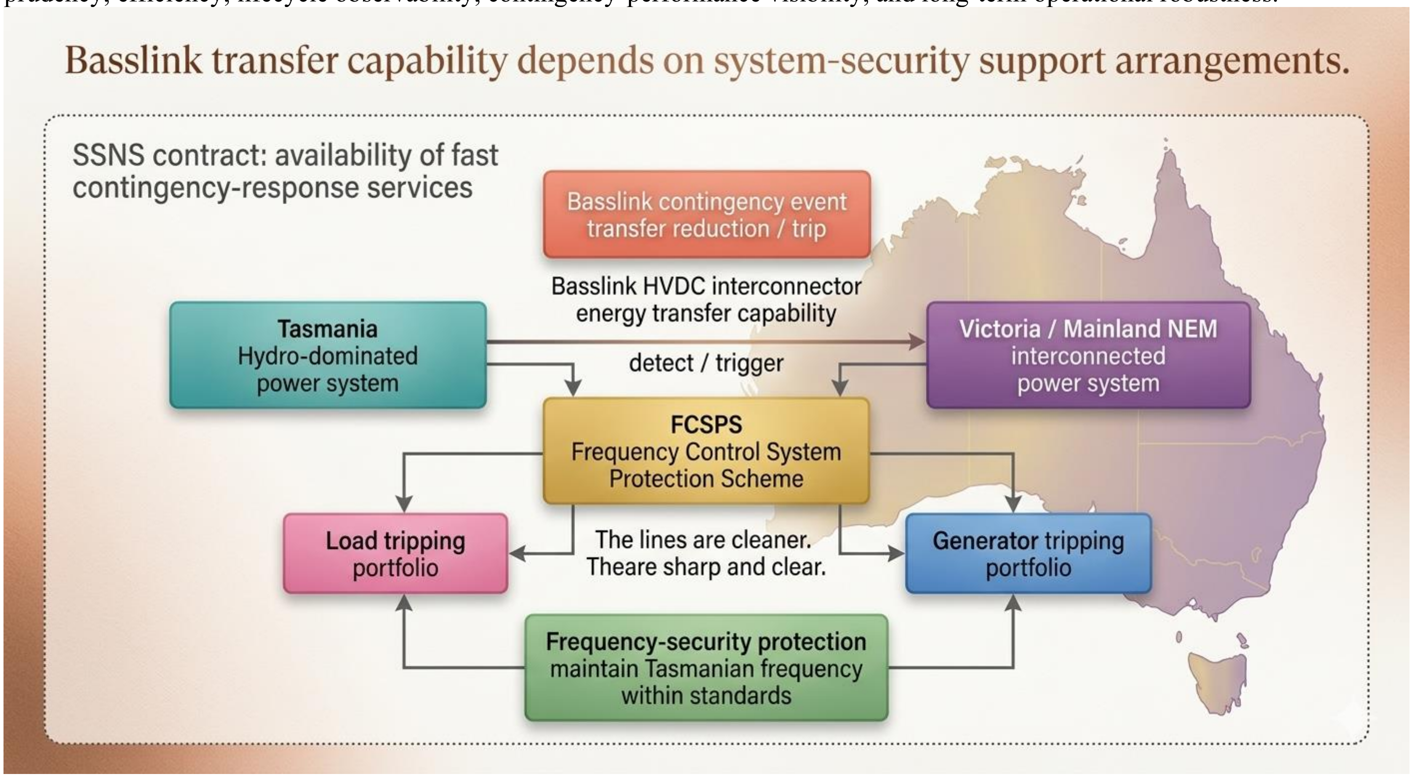

Figure 1. Conceptual representation of the Basslink system-security context and the operational role of the Frequency Control System Protection Scheme (FCSPS) in maintaining secure Tasmania–Victoria transfer capability.

2.2 Changing NEM operating conditions

Basslink and Tasmania now operate within a NEM moving toward higher inverter-based resources, distributed energy resources, battery storage, and lower synchronous generation. This changes the sources of inertia, fault current, voltage support, and frequency response.

AEMO's 2024 System Strength Report links system-strength requirements to the capacity, scale, and location of inverter-based resources connecting without voltage stability or synchronisation issues [3]. This is relevant to Basslink because future operation will occur in a more dynamic and location-specific system-security environment. AEMO's 2025 Transition Plan for System Security consolidates planning for system strength, inertia, and network support and control ancillary services, reinforcing the need to assess system-security contracts against future as well as present operating conditions [20, 21].

Tasmania is especially relevant because AEMO's 100% Inverter Based Resource Generation Study identifies it as a potential early gigawatt-scale example of very high IBR operation and notes the need to assess impacts on emergency frequency-control and protection schemes [22]. AEMO's Engineering Roadmap also points to future reliance on grid-forming batteries, inverter performance, consumer energy resources, and minimum-system-load management, including priority actions for very high IBR operation in Tasmania [10].

The AER has recognised that system-strength requirements can change materially as inverter-based resource projections change [23]. This shows that system-security requirements are shaped by changing resource mix, connection timing, modelling assumptions, and operational standards.

International evidence from the IEA, NERC and ENTSO-E is consistent: secure operation increasingly depends on operational flexibility, inverter-response visibility, disturbance monitoring, modelling, and stability management in power-electronics-dominated systems [5-7].

Battery storage and grid-forming inverters may also change future system-security needs by providing fast frequency response, voltage support, black-start capability, oscillation damping, and other grid-support services [24, 25].

2.3 Future operability uncertainty

The issue is not that the Basslink SSNS assumptions are wrong, but that they may evolve during the contract horizon. A service can be prudent today while still requiring lifecycle transparency and reviewability.

Future uncertainty may arise from higher wind, solar, battery and DER penetration; changes in synchronous generation, inertia and fault-current contribution; emerging grid-forming and fast-frequency-response capabilities; protection-system evolution; and changing Basslink or future interconnector operating patterns.

AEMO's Tasmanian 100% IBR study directly supports this point by noting that new operating scenarios may affect emergency frequency-control and protection schemes [22]. This strengthens the case for observable and reviewable FCSPS-related arrangements. The same principle appears in AEMO's system-security and system-strength planning and the AER's system-strength guidance, which show that security needs must be reassessed as resource mix, connection patterns and operating conditions evolve [8, 9, 23, 25]. The contract should therefore preserve visibility of the assumptions underpinning availability, utilisation, event performance, and material changes in operating conditions.

Such an approach is consistent with international experience. NERC, ENTSO-E, IEA, and NREL publications all show that future power-system security increasingly depends on dynamic response capability, model validation, operational monitoring, and technology-specific performance under disturbance conditions. These issues are not abstract for Tasmania. They are directly relevant because the FCSPS is itself a fast-acting protection and contingency-management arrangement whose value depends on the system conditions under which it is called upon to operate.

As Figure 2 illustrates, prudency is assessed at a fixed approval point while NEM conditions, inverter penetration, operational complexity and system interactions continue to evolve. The useful regulatory question is whether the determination preserves enough transparency, reporting and reviewability for the arrangement to remain interpretable over time.

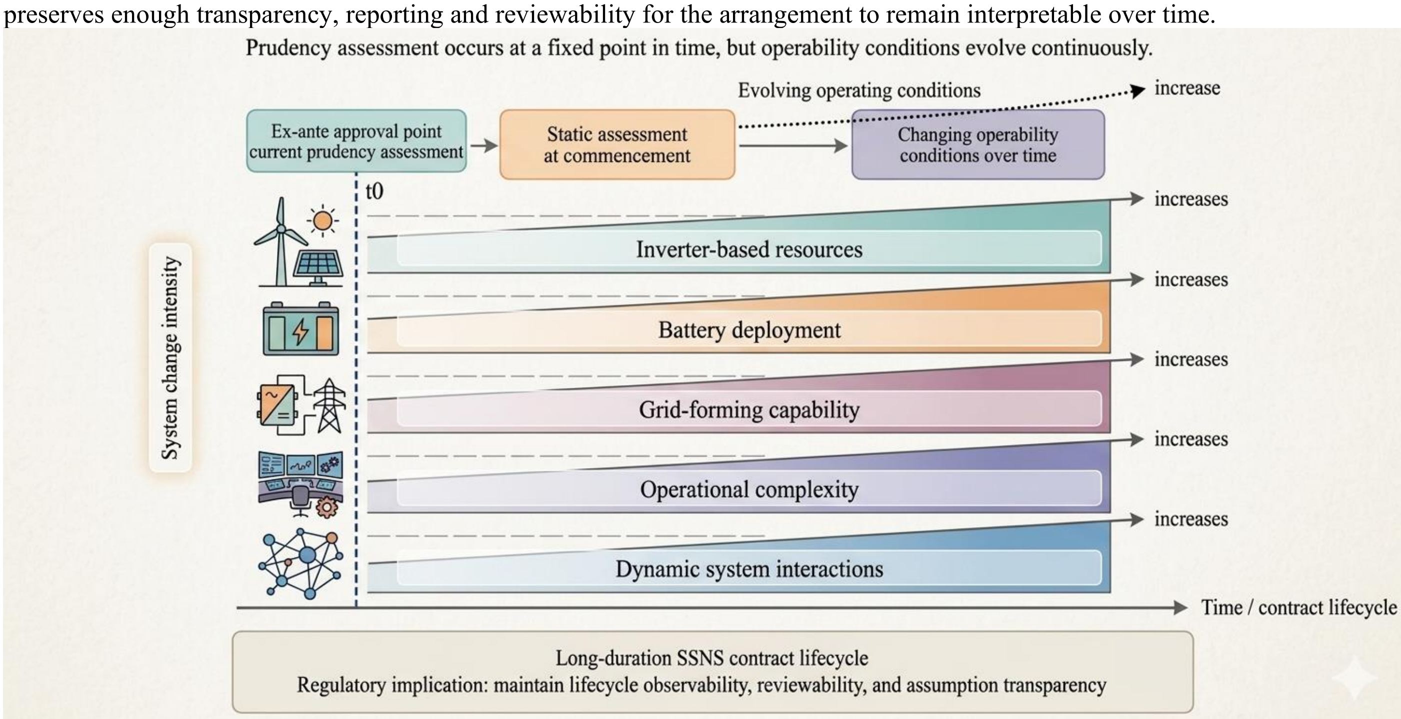

Figure 2. Evolution of NEM operating conditions across the SSNS contract lifecycle and the increasing importance of lifecycle observability under changing system conditions.

3. Prudency Under Evolving Technical Conditions

3.1 Prudency under current conditions

There is a credible technical basis for maintaining FCSPS support under current conditions. Tasmania's power-system structure, Basslink contingency exposure, and existing frequency-security framework make fast load-tripping and generator-tripping capability important.

APA explains that Basslink's transfer capability depends on FCSPS-related services because the Tasmanian Frequency Operating Standard would otherwise constrain allowable contingency size [15].

AEMO event reporting reinforces this function, documenting FCSPS operation during Basslink-related events and showing that fast response can be required to maintain frequency within acceptable limits [18, 26]. Current prudency must also be considered against existing standards and security frameworks, including the AEMC Reliability Panel's Frequency Operating Standard and AEMO security planning guidance [16, 3, 4, 20, 21].

Within this framework, the proposed SSNS arrangement can reasonably be viewed as prudent because it supports a strategically important interconnector under existing contingency assumptions. The remaining question is whether the approval should also preserve visibility of how technical conditions, operating standards and system behaviour may evolve over the contract lifecycle.

3.2 Prudency and evolving system capability

Future system capability may evolve materially over the life of the arrangement. This does not make the present service imprudent, but it does make prudency condition-dependent. A key source of change is the growing role of inverter-based resources, batteries, distributed energy resources and advanced inverter controls, replacing or supplementing synchronous sources of inertia, voltage control and fault current.

AEMO's Engineering Roadmap and Tasmanian 100% IBR study identify grid-forming inverter capability, advanced inverter behaviour and high-IBR operability as central future challenges, including potential reassessment of emergency schemes [10, 22]. Battery systems can increasingly provide fast frequency response, reserve, voltage support, black-start capability and oscillation damping, and the NEM has already integrated fast-frequency-response services [23, 24, 27].

Grid-forming inverter development may also alter contingency-management approaches. NREL and ENTSO-E both identify the need for revised stability, protection and dynamic-response assessment in low-inertia, power-electronics-dominated systems [25, 7]. The AER's system-strength guidance confirms that efficient system-strength requirements can change as IBR projections evolve, so system-security needs should not be assumed to remain identical across long contract horizons [23].

Future inverter capability, battery services, grid-forming technologies and protection evolution are therefore relevant because they may change how system-security services are delivered, valued and interpreted.

3.3 Technology assumptions increasingly influence regulatory outcomes

Technical assumptions now have stronger regulatory consequences because the NEM is shifting from stable synchronous architectures toward inverter-dominated and dynamically controlled operation.

AEMO's ISP, IASR and Transition Plan show that planning outcomes increasingly depend on assumptions about storage deployment, inverter capability, flexible demand, network utilisation and operability [4, 8, 9, 28]. These assumptions affect investment timing, system-strength procurement, ancillary services, network utilisation, consumer costs and infrastructure valuation.

NERC and IEEE PES work similarly shows that reliability increasingly depends on inverter performance during disturbances and that future power-system behaviour may differ from historical synchronous assumptions [11, 12].

In Australia, changes in assumptions already influence system-strength planning, REZ development, inertia assessment and ISP modelling. The AER's system-strength framework shows that future IBR projections can directly affect regulated expenditure and consumer exposure [23].

- The Basslink SSNS review therefore illustrates a broader governance issue: current assumptions may be reasonable, but future technical evolution can affect how today's regulatory decisions perform over time.
- how services are procured;
- what costs consumers ultimately bear;
- how long-term reliability risks are interpreted.

Therefore, the Basslink SSNS review illustrates a broader regulatory issue emerging across modern electricity systems. The question is not whether current assumptions are unreasonable. the issue is that future technical evolution may materially affect how present regulatory decisions perform over time. regulatory robustness increasingly depends on maintaining visibility regarding the assumptions embedded within long-duration arrangements and preserving sufficient lifecycle observability to interpret whether those assumptions remain representative as operating conditions evolve.

Regulators need not predict every technology pathway. They do need transparent assumptions, operational reporting and reviewability so prudency and efficiency remain interpretable across the lifecycle.

4. Efficiency, Procurement, and Benchmarking Visibility

4.1 Sole-provider characteristics

The proposed SSNS services are not generic market services sourced from many competing providers. The AER consultation material and APA application identify load-shedding and generation-tripping services procured from Hydro Tasmania under the FCSPS [1, 14, 15].

This differs from ordinary competitive tendering because the service is physically and operationally linked to the Tasmanian power system. It requires suitable rapid tripping capability, and Hydro Tasmania has a distinctive operational position through its Tasmanian generation portfolio and historical Basslink role [29, 30].

In this constrained-provider context, competitive price discovery is limited. Efficiency assessment must therefore rely more on technical necessity, cost justification, alternatives assessment, risk allocation and ongoing performance reporting.

This is consistent with the AER's SSNS Payment Guideline, which asks whether proposed SSNS expenditure is likely to be prudent and efficient and recognises that SSNS services may arise in technically specific contexts [31].

OECD and World Bank procurement principles support the same approach: competition is important, but value for money also depends on transparency, accountability, fitness for purpose and lifecycle contract management [32, 33].

The key implication is that limited feasible providers do not automatically indicate inefficiency, but they increase the need for transparency, auditability and lifecycle reporting.

4.2 Efficiency assessment under constrained comparators

Under constrained-provider conditions, efficiency assessment should focus on whether the payment structure, service scope, risk allocation and contract mechanisms are reasonable relative to the service need and plausible alternatives.

The AER's SSNS Payment Guideline supports a broad evidentiary approach to prudency and efficiency, which is important where competitive tender evidence is limited [31]. Basslink is also an unusual regulatory case. In its 2026-30 final revenue decision, the AER noted that Basslink had not previously been regulated and lacked a directly comparable prior regulatory control period [34].

The absence of direct comparators should not imply inefficiency, but it does require stronger evidence explaining why alternatives are not currently viable, how service components are priced, how availability and response capability are valued, how risks are allocated, and whether alternatives may emerge.

This aligns with ACCC procurement guidance and international infrastructure-governance principles, which emphasise transparency, risk allocation, accountability, benchmarking, uncertainty treatment and evidence-based cost assessment where competition or comparability is limited [35-37].

The regulatory issue is therefore not Hydro Tasmania's involvement itself, but whether the payment methodology is transparent enough for the AER and stakeholders to understand efficiency in the absence of strong competitive comparators.

This submission suggests that the AER's efficiency assessment should give particular attention to the evidence used to justify:

- The AER should therefore examine the evidence supporting the availability payment structure, pricing of tripping capability, risk and indexation treatment, relationship between payment and operational value, and the extent to which alternatives were considered or may become feasible.
- the pricing of load-tripping and generator-tripping capability;
- the treatment of contract risk and indexation;
- the relationship between payment and operational value;
- the extent to which alternative solutions were considered or may emerge over time.

4.3 Reporting and reviewability

Because the SSNS arrangement has constrained procurement and limited benchmarking, ongoing reporting and reviewability should form part of regulatory assurance.

The AER's ex-ante framework is useful, but it is based on information available at approval. Where system conditions evolve and benchmarks are limited, future reporting helps confirm whether the service continues to deliver the operational value assumed at approval [31]. For Basslink, reporting should cover service availability, actual FCSPS utilisation, contingency-event performance, changes in tripping portfolios, material Tasmanian operating-condition changes, IBR and system-strength changes, and any contract amendments or changes in service scope. Updated benchmarking should also be used where feasible as other SSNS, system-strength, battery-based system-security and network-support services emerge across the NEM [31].

Lifecycle reporting is consistent with OECD and World Bank governance principles, which emphasise monitoring, accountability, value for money, fit-for-purpose procurement and contract management across the lifecycle [33, 36].

If the AER determines the methodology is prudent and efficient, that determination should be accompanied by expectations for periodic reporting on availability, utilisation, system-condition changes, event performance, alternative-technology feasibility and updated benchmarking.

Hence, for the Basslink SSNS review, the practical recommendation is straightforward. If the AER determines that the proposed payment methodology is likely to be prudent and efficient, that determination should be accompanied by clear expectations for ongoing reporting and reviewability. This could include annual or periodic reporting on:

- SSNS service availability;
- actual service utilisation;
- material system-condition changes;
- service-performance outcomes during relevant events;
- changes in alternative technology feasibility;
- updated benchmarking information where available.

Such a reporting framework would not undermine the present application. Instead, it would strengthen the regulatory robustness of the determination by ensuring that efficiency remains visible under evolving technical and market conditions. The value of this approach is especially high where competitive procurement evidence is limited, because lifecycle reporting becomes one of the main mechanisms through which prudency and efficiency can remain observable after approval.

5. Availability-Based Services and Regulatory Observability

5.1 Availability versus realised operability

The Basslink SSNS arrangement is fundamentally availability-based. This is reasonable because the service reduces contingency exposure rather than operating continuously in dispatch [2, 14, 15, 29]. However, availability is not the same as realised operability. A service may satisfy contractual readiness requirements while its real performance is affected by changing system dynamics, contingency behaviour, or interactions between technologies.

AEMO event reports show why this matters: actual performance depends on the interaction between Basslink transfer, frequency behaviour, load tripping, timing, system state and network response [26, 29].

NERC and ENTSO-E similarly show that disturbance outcomes in inverter-dominated systems depend on actual device response, controls and system conditions, not only assumed capability [6, 7, 11].

The operational value of the FCSPS should therefore be understood through realised contingency-management outcomes, not only binary availability metrics. This is especially important for long-duration contracts because inverter penetration, system strength, demand patterns, storage deployment, interconnector operation and protection interactions may all change during the contract term.

As Figure 3 illustrates, contractual availability does not automatically guarantee realised contingency effectiveness. Oversight should retain visibility of whether availability continues to translate into operational value under evolving system conditions.

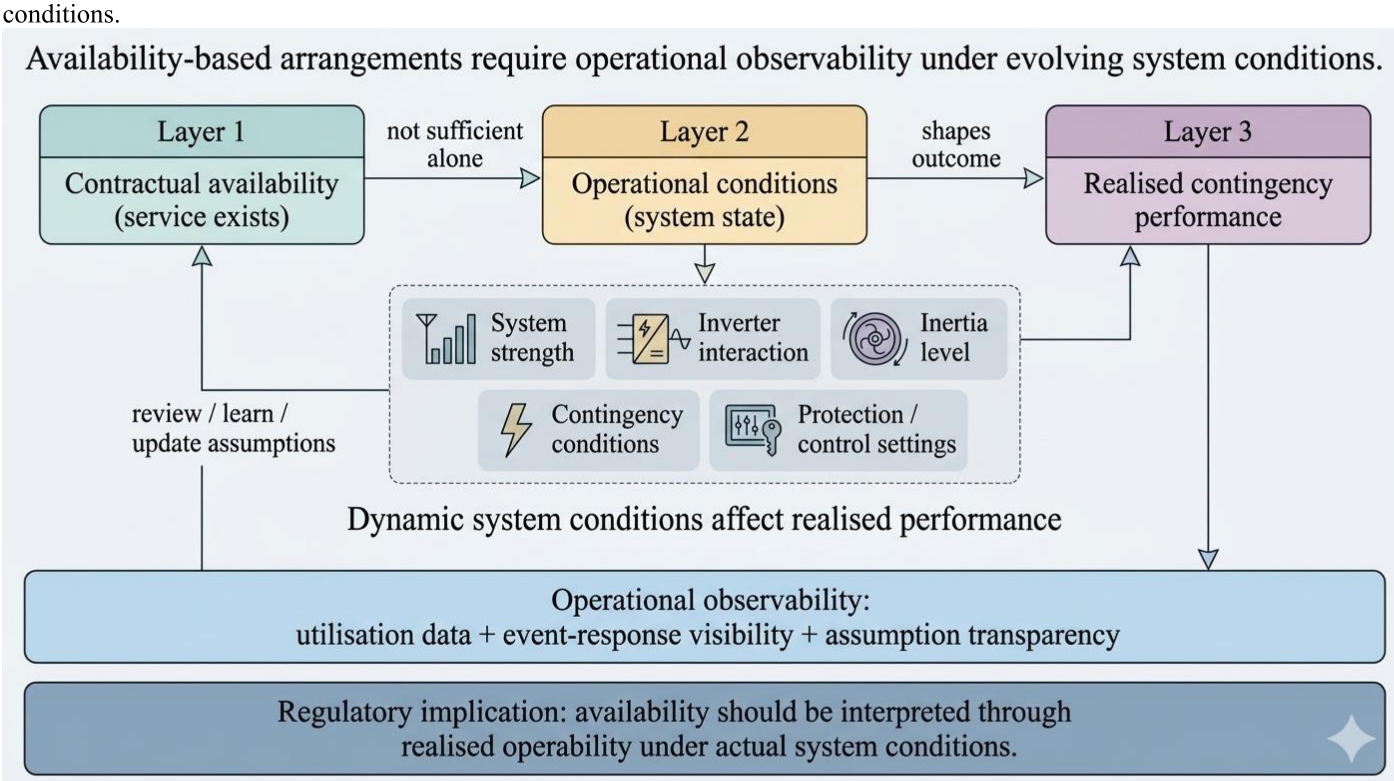

Figure 3. Conceptual relationship between contractual availability, dynamic operating conditions, and realised contingency performance under evolving NEM system conditions.

5.2 Dynamic system conditions

The relationship between availability and operability becomes more complex as the NEM increasingly relies on inverter-based resources, DER, batteries, advanced control systems and low-inertia operation [3, 10, 20].

Contingency schemes depend on the broader system state, including inertia, inverter response, system strength, fault-current behaviour, control interaction and network configuration at the time of disturbance. AEMO's Tasmanian 100% IBR study is directly relevant because it considers the effect of very high IBR generation on emergency frequency-control schemes, stability management and operability [22].

Weak-grid and low-inertia conditions may also change disturbance behaviour, control interactions, protection sensitivity, oscillatory behaviour, voltage recovery and dynamic stability, as identified by NERC and ENTSO-E [6, 7]. Battery storage and grid-forming technologies may further change contingency propagation, disturbance recovery and protection requirements by adding fast response and new frequency or voltage support capabilities [24, 25, 27]. These developments do not make the current FCSPS inappropriate. They mean future observability is important because contingency behaviour may change as the technical composition of the system changes.

The broader lesson is that future system-security arrangements may be less predictable through historical synchronous-grid assumptions and more dependent on interaction between software-controlled devices, distributed resources and dynamic operating states.

5.3 Observability and performance transparency

Regulatory observability means that regulators, system operators and stakeholders can see not only whether a service exists contractually, but also its availability, utilisation, event performance, technical assumptions and realised outcomes over time.

AEMO's system-security planning, Engineering Framework and post-event reporting practices already place increasing emphasis on operational evidence, disturbance analysis, model validation and technical assumptions [20, 38].

NERC and the IEA similarly emphasise event visibility, disturbance monitoring, model validation, operational data transparency, digital visibility and system-awareness capability in inverter-dominated systems [5, 11].

For Basslink, observability could be strengthened through annual reporting of service availability, FCSPS activation events, material changes to tripping capability, contingency-event performance, system-strength or IBR changes, and assumptions used in future operational assessments. Event-response visibility is important because system value may only be tested during real disturbances or stressed operating conditions. Routine availability metrics alone may not show whether actual performance still matches expected behaviour. Assumption transparency is also important because assumptions around availability payments, contingency expectations, frequency-response behaviour and operational readiness may evolve materially over time.

The AER should therefore emphasise operational observability and lifecycle transparency without imposing unnecessary burden or undermining the current service rationale. In dynamic systems, visibility itself becomes part of system-security governance. The issue is not merely whether an asset or contract exists, but whether evolving system behaviour remains observable enough to regulate.

6. Consumer-Risk Visibility Across the Contract Lifecycle

6.1 Long-Duration Exposure

The Basslink SSNS arrangement represents a long-duration consumer commitment whose costs, assumptions, operational context, and benefits may evolve as the NEM transitions toward higher penetrations of inverter-based resources, changing system-strength requirements, increased battery deployment, and new control technologies. While the AER’s ex-ante SSNS assessment framework necessarily relies on assumptions regarding future operating conditions, service capability, and contingency-management requirements [31], these assumptions may become less representative over time as system conditions change. For Basslink, the value of the service depends on factors including interconnector transfer conditions, Tasmanian frequency-security requirements, contingency-management arrangements, available tripping capability, system strength, and broader NEM operating conditions. AEMO’s Transition Plan for System Security, ISP, and Engineering Framework indicate that future operation is likely to involve higher inverter-based resource penetration, lower synchronous inertia, greater battery participation, evolving essential system services, and changing operational frameworks [4, 8-10, 20]. Consequently, future inverter behaviour, grid-forming capability, system-strength requirements, interconnector utilisation, and contingency-response expectations may differ from those assumed at the time of approval, potentially requiring changes to service scope, availability requirements, protection coordination, or contingency-management arrangements [23].

The consumer-risk issue is therefore broader than contract cost alone. It also concerns whether the arrangement continues to deliver its intended operational value and whether future changes remain transparent and reviewable. Consistent with OECD and IEA infrastructure-governance principles, long-duration public-interest arrangements should be supported by lifecycle transparency and adaptive oversight [5, 36]. Consumer-risk visibility should therefore be treated as a governance issue as well as a financial one, with sufficient reporting and review mechanisms to ensure that changes in assumptions, costs, operating conditions, and service requirements remain observable throughout the contract lifecycle.

6.2 Transparency of future changes

Because operating conditions may evolve over the contract lifecycle, material changes affecting the SSNS arrangement should remain transparent and reviewable. This is particularly important for availability-based system-security services whose value depends not only on contractual obligations but also on the technical conditions under which they operate. Changes to service scope, tripping capability, availability requirements, operating procedures, pricing methodologies, indexation arrangements, or contingency-management assumptions should therefore remain sufficiently visible to allow regulators and stakeholders to assess whether the original prudency and efficiency rationale remains valid.

Adaptive governance can be supported through targeted review triggers rather than continuous reassessment. Relevant triggers may include significant changes in Tasmanian inverter-based resource penetration, system-strength requirements, Basslink operating patterns, grid-forming capability, tripping portfolios, contingency-management arrangements, or material contract terms. Periodic reporting should also provide visibility of service availability, contingency-event utilisation, disturbance performance, material system-condition changes, and any significant revisions to operational assumptions.

This approach is consistent with AEMO’s system-security planning and post-event reporting practices, NERC guidance on inverter-based resource reliability, and broader OECD and World Bank principles of lifecycle transparency, accountability, and contract-management oversight [11, 33, 36, 38]. Transparency is important because future consumer exposure may emerge gradually through the cumulative effect of operational changes, contract amendments, or evolving technical assumptions. Maintaining visibility of these developments helps ensure that the arrangement remains aligned with the assumptions underpinning the original prudency and efficiency assessment.

6.3 Adaptive governance

Adaptive governance involves preserving transparency, reviewability, and operational visibility as technical and operating conditions evolve. This is increasingly important because AEMO's Engineering Framework, Transition Plan for System Security, and Tasmanian 100% IBR studies all indicate a future characterised by higher inverter penetration, lower synchronous inertia, greater reliance on software-controlled resources, evolving system-strength requirements, and changing contingency-management approaches [4, 10, 22]. Internationally, the IEA and OECD similarly emphasise regulatory adaptability, lifecycle transparency, monitoring, and institutional flexibility under uncertain long-term conditions [5, 36].

For the Basslink SSNS arrangement, adaptive governance means ensuring that changing operating conditions, technical assumptions, contract modifications, and consumer-risk exposure remain observable throughout the contract lifecycle. This is particularly important because future system-security outcomes may increasingly depend on interactions between inverter-based resources, battery systems, protection schemes, Basslink operating states, system strength, and advanced control technologies. The implication is not that the proposed arrangement should be delayed or rejected, but that any approval should be accompanied by lifecycle reporting, structured operational disclosure, reviewability of material changes, transparency of key assumptions, and visibility of realised operational performance. Such measures would strengthen regulatory robustness by ensuring that prudency and efficiency remain observable as system conditions evolve.

As Figure 4 illustrates, adaptive governance links technical assumptions, operation, outcomes, reporting, regulatory review and evolving system conditions over the contract lifecycle.

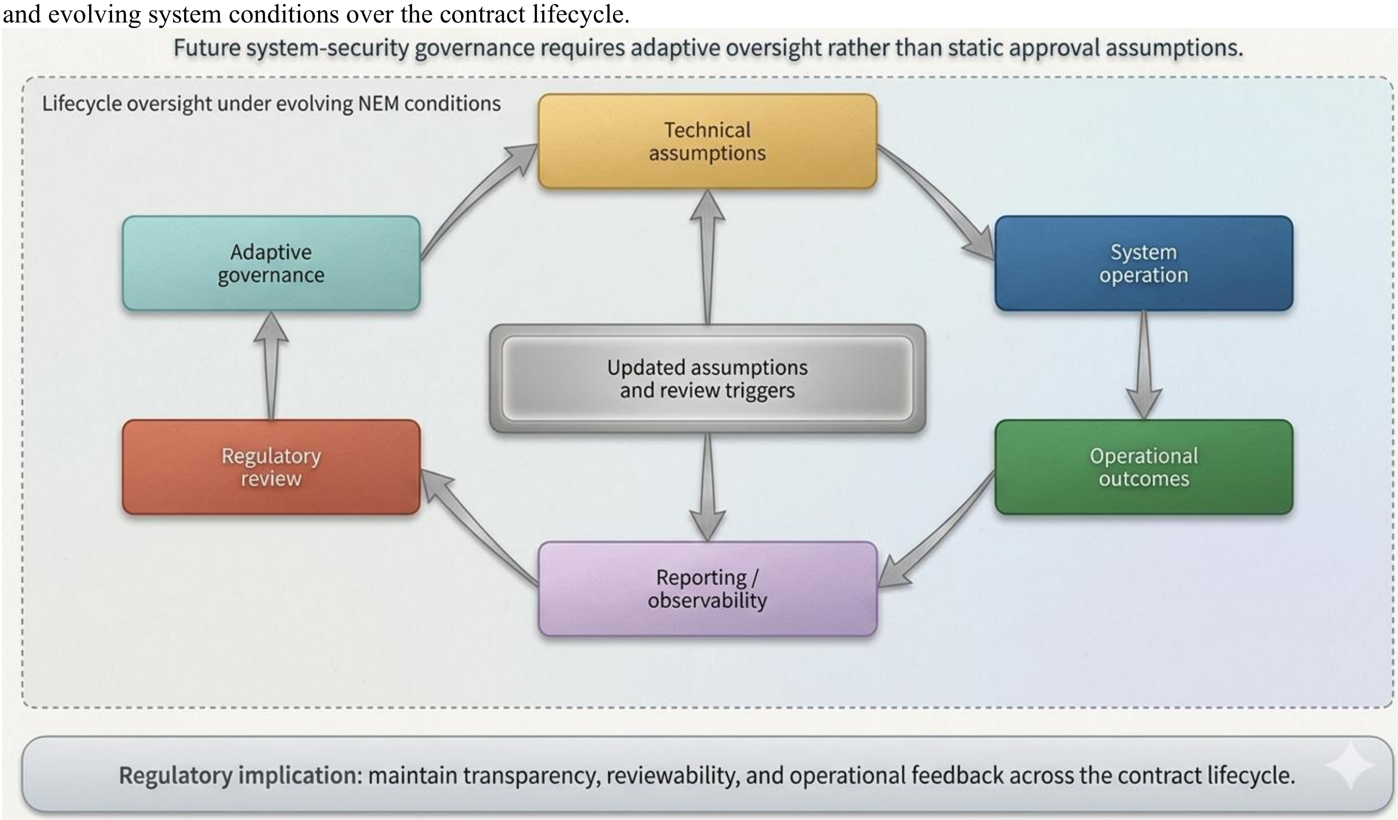

Figure 4. Conceptual adaptive governance framework illustrating the relationship between technical assumptions, operational outcomes, reporting, regulatory review, and lifecycle observability as NEM conditions evolve.

Future uncertainty is not evidence of current inefficiency. It is a reason to preserve lifecycle observability so prudency and efficiency remain interpretable as operating reality changes. In increasingly inverter-dominated electricity systems, prudency and efficiency may no longer be fully observable through static approval processes alone. They increasingly depend on whether evolving operational reality remains visible to interpret over time. That is a governance issue as much as a technical one. Unfortunately for everyone involved, the grid now appears to require both simultaneously.

7. Recommendations

This submission supports secure Basslink operation and recognises the current role of the FCSPS in managing Tasmanian contingency exposure. The recommendations aim to strengthen regulatory robustness, transparency and lifecycle observability, not to oppose the proposed SSNS arrangement. The recommendations draw on Australian and international developments in system-security governance, inverter-based-resource integration, procurement and lifecycle regulation, including AER, AEMO, NERC, ENTSO-E, NREL, IEA, OECD and World Bank materials [3-7, 10, 20, 22, 25, 31-33, 36, 40-43].

Recommendation 1: Maintain transparency over key technical and operational assumptions underpinning the SSNS contract

The AER should maintain visibility of the assumptions underpinning the SSNS payment methodology, including Basslink transfer conditions, Tasmanian contingency exposure, tripping portfolios, frequency-control requirements, system-strength conditions and the expected FCSPS role under credible contingencies. This is consistent with the AER's SSNS Payment Guideline and international reliability practice, which emphasise transparent assumptions for assessing prudency, efficiency, inverter performance, disturbance response and stability in power-electronics-dominated systems [6, 7, 31, 39]. The objective is not unnecessary disclosure of commercially sensitive details, but a clear technical basis for the AER and stakeholders to understand prudency and efficiency.

Recommendation 2: Introduce periodic operability review mechanisms over the contract lifecycle

The AER should consider periodic operability reviews over the contract lifecycle. These would not routinely reopen the determination, but would test whether operational assumptions remain broadly representative as system conditions evolve. This is supported by AEMO's Transition Plan for System Security and Tasmanian 100% IBR study, and by OECD lifecycle-governance principles for infrastructure and public-interest arrangements [20, 22, 32, 36]. The point is to keep prudency and efficiency observable over time rather than treating ex-ante approval as permanently settled.

Recommendation 3: Improve visibility of availability, utilisation, and realised system-security outcomes

The AER should encourage reporting that distinguishes contractual availability, actual utilisation and realised system-security performance. Availability is important, but it is not identical to operability. For the FCSPS, reporting could include annual availability, triggering events, event-response performance, tripping-portfolio changes and whether operation remained consistent with approval assumptions. AEMO event reports and international IBR reliability practice show why disturbance monitoring and post-event validation matter [6, 11, 38]. This would clarify whether service availability continues to translate into system-security value under changing operating conditions.

Recommendation 4: Strengthen reporting regarding evolving inverter-based and energy-storage operating conditions

The AER should require or encourage reporting of material changes in Tasmanian IBR penetration, battery deployment, grid-forming capability, system-strength requirements, and frequency-control or protection arrangements that may affect SSNS assumptions. AEMO links system-strength needs to IBR development, while NREL and ENTSO-E emphasise validation, monitoring and instability detection as grid-forming and power-electronics-dominated systems develop [3, 10, 25, 40]. As the technical environment changes, the assumptions supporting a long-duration SSNS contract should remain visible.

Recommendation 5: Ensure future contract amendments remain observable and reviewable

The AER should ensure that material future amendments affecting pricing, indexation, service scope, availability obligations, tripping portfolios, risk allocation or contingency-response expectations remain observable and reviewable. This is consistent with World Bank and Australian contract-management guidance, which emphasise lifecycle management, documentation, risk visibility and value for money [33, 41-43]. Minor administrative changes need not trigger reassessment; material changes affecting cost, risk, availability or operational value should remain visible.

Recommendation 6: Improve transparency around benchmarking limitations associated with sole-provider procurement structures

The AER should recognise that constrained procurement does not automatically imply inefficiency, but it does require clearer evidence where competitive comparators are limited. Hydro Tasmania's role may reflect practical and technical constraints. The AER should therefore seek clear explanation of why alternatives are not presently viable, how service components and availability are priced, how risk is allocated, and whether future alternatives may become feasible [31, 32, 39]. In practice, this means that the AER should seek clear explanation of:

Recommendation 7: Maintain visibility of cumulative consumer exposure over time

The AER should maintain visibility of cumulative consumer exposure over the contract lifecycle, including base payments, amendments, indexation, risk allocation, operating-condition changes and service-scope changes. This aligns with the National Electricity Objective, the AER's SSNS role, OECD infrastructure-governance principles, and IPA cost-estimating guidance on whole-life cost and risk visibility [36, 37, 44]. Although this is a service contract rather than a construction project, the same principle applies: long-duration public-interest commitments should preserve visibility of cost, risk and value over time.

Recommendation 8: Support adaptive governance for long-duration arrangements under evolving NEM conditions

The AER should use this review to reinforce adaptive governance for future system-security arrangements. Oversight should preserve transparency, reviewability and operational visibility as system conditions change. This is aligned with AEMO's transition planning, the IEA's emphasis on modernised grid regulation, and NERC/ENTSO-E work on inverter disturbance behaviour, model validation and power-electronics-dominated stability management [5, 6, 11, 20, 40]. NERC's inverter-based-resource reports show that disturbance behaviour, inverter tripping, model validation, and post-event performance visibility are becoming central reliability-governance issues [6, 11]. ENTSO-E's stability-management work similarly indicates that power-electronics-dominated systems require advanced monitoring, revised stability-management tools, and coordinated action between TSOs, manufacturers, and other stakeholders [40]. Approval should not be treated as the end of regulatory visibility. The determination should preserve transparency to support future interpretation of service value, performance and consumer exposure as the NEM evolves.

Recommendation 9: Use the Basslink SSNS review to establish a useful precedent for future system-security service assessments

The Basslink SSNS review is among the first applications under the AER's final SSNS Payment Guideline and has precedent value beyond Basslink. Similar services are likely to become more common as synchronous generation retires and system strength, inertia, frequency-control and network-support services are increasingly procured. The AER should therefore use this review to clarify expectations regarding: The AER can use this review to clarify expectations for assumption transparency, constrained-procurement evidence, availability and utilisation reporting, event-performance visibility, amendment reviewability and lifecycle consumer-risk monitoring [31].

In summary, the AER should approve prudent and efficient system-security arrangements under current conditions while ensuring that long-duration arrangements remain observable as future conditions change. Basslink is therefore both a contract review and a governance test for increasingly dynamic, inverter-dominated power-system operation.

8. Conclusion

This submission recognises Basslink's operational importance in the NEM and supports secure Tasmania-Victoria interconnection capability. It also recognises the current role of the FCSPS in supporting Basslink transfer capability under existing Tasmanian contingency-management and frequency-security requirements. The submission does not oppose the proposed SSNS arrangement or the need for system-security services under present conditions. It argues that long-duration arrangements should be assessed in light of increasing IBR penetration, changing system-strength requirements, expanding battery deployment, lower synchronous inertia and more dynamic NEM operation.

Under these conditions, prudency and efficiency become more condition-dependent. A service may be prudent today, but the assumptions underpinning operational performance, contingency behaviour and security requirements may evolve over the contract lifecycle. This approach is consistent with Australian and international developments in system-security governance, including AEMO transition planning, the AER's SSNS framework, and work by NERC, ENTSO-E, IEA, OECD and others on inverter-dominated operation and reliability governance.

The Basslink SSNS review is therefore more than a narrow contract assessment. It is an opportunity to strengthen how long-duration system-security services are evaluated under dynamic operating conditions, including visibility of future operability, performance outcomes and consumer exposure. In inverter-dominated electricity systems, regulatory decisions depend not only on assets and contracts, but also on whether evolving operational reality remains visible enough to interpret over time. Lifecycle observability should therefore be treated as part of robust system-security governance.

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