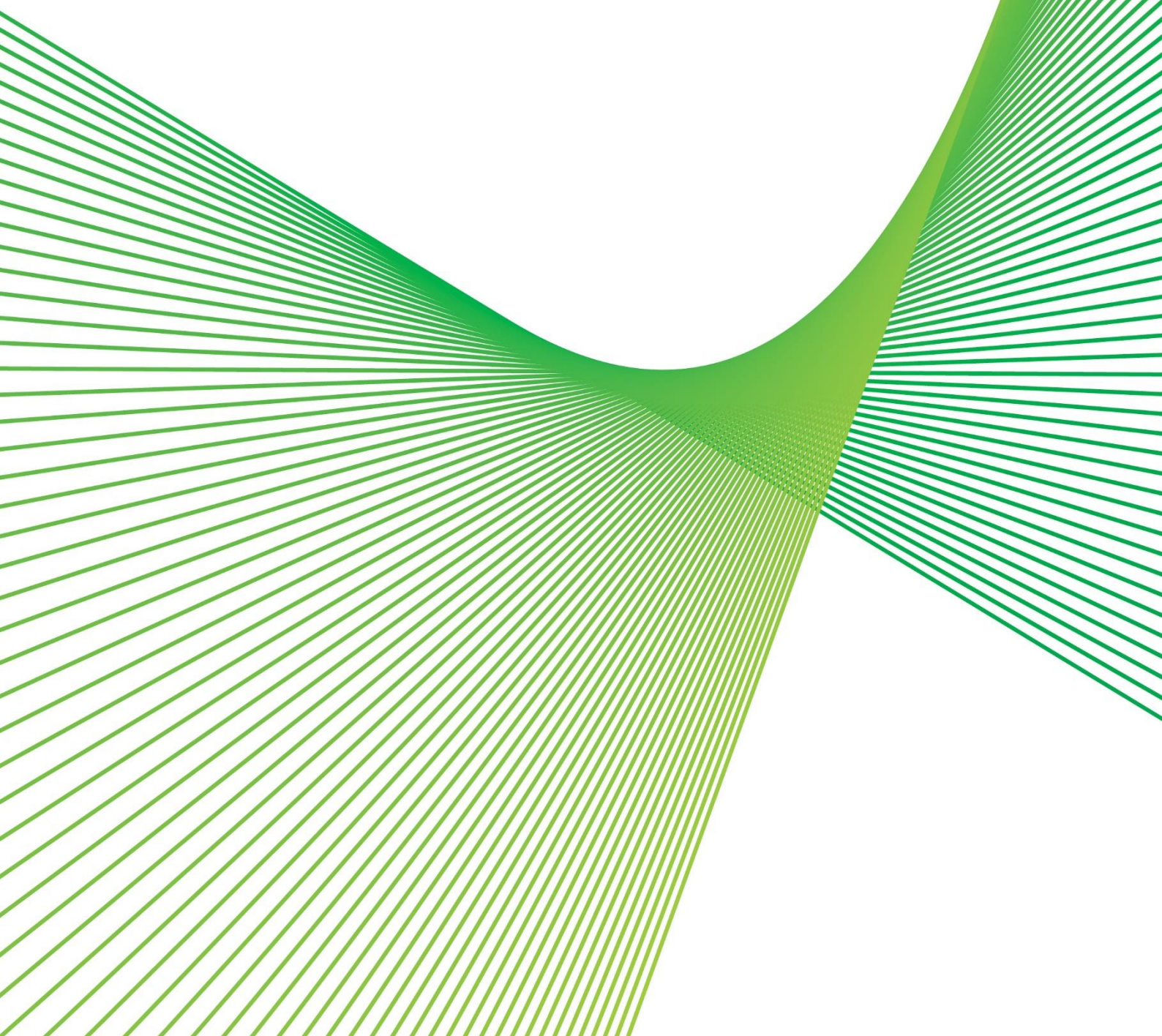


Expression of Interest – Addendum for commercial component

Supplementary to the 'Meeting system strength requirements in NSW' Project Assessment Draft Report (PADR)

Date of issue: 22 August 2024



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1. Introduction

1.1. Background and scope

In December 2022, Transgrid published a Project Specification Consultation Report (PSCR) and called for Expressions of Interest (EOIs) for non-network solutions to meet system strength solutions in NSW, as part of the related Regulatory Investment Test for Transmission (RIT-T). In March 2023, we received EOIs from 25 proponents proposing over 60 individual solutions. Over the subsequent months, we have engaged with EOI proponents to clarify the technical and cost assumptions that should be applied to their non-network solutions in the RIT-T.

In June 2024, we published the second stage of the RIT-T, the Project Assessment Draft Report (PADR) which identified the type and general location of non-network solutions included in the most credible option portfolios. As part of the RIT-T assessment, we need to assess and confirm the technical and commercial feasibility of each candidate before including it as a credible option for assessment in the Project Assessment Conclusions Report (PACR) market modelling.

Alongside the publication of the PADR, we have re-engaged with non-network proponents in an EOI update. We released information to EOI proponents on 17 June 2024 that focused on technical and economic cost information.

This document is an addendum that requests non-network proponents to update the commercial component of their EOI. This will complete our assessment of each solution (and rule out solutions that are not commercially feasible).

To assess commercial feasibility, in line with the RIT-T Guideline,¹ a reasonable and objective Transmission Network Service Provider (TNSP) would only be prepared to develop a non-network option if they are able to recover the associated operating expenditure. This requires an ex-post “network support pass through” determination from the Australian Energy Regulator (AER) under the National Electricity Rules (NER) 6A.7.2.

Hence, prior to non-network contract execution, we will seek an advance determination from the AER on the payments (or payment methodology) for proposed system security contracts, and the associated operating expenditure under NER 6A.6.6A. This AER assessment, including whether the proposed expenditure is “efficient and prudent”, will give us confidence that we will be able to recover the actual operating expenditure via the subsequent “network support pass through” determination.

Contract pricing is used to assess commercial feasibility in the RIT-T.² If the contract pricing of a solution does not satisfy an assessment of “efficient and prudent”, it would not qualify as a credible option and would be excluded from the PACR. If a solution is assessed as commercially feasible, it is retained as a credible option in the PACR. Following the RIT-T, contract pricing will be used to assess proposals in the competitive procurement process and subsequent AER determinations.

¹ “An option is commercially feasible under NER clause 5.15.2(a)(2) if a reasonable and objective operator, acting rationally in accordance with the requirements of the RIT-T, would be prepared to develop or provide the option in isolation of any substitute options.” AER - RIT-T guidelines - final amendments (marked up) - 6 October 2023_0.pdf section 3.2.2

² The RIT-T guidelines currently specify that the cost-benefit analysis should refer to underlying capital and operating costs rather than contract pricing. The AER is reviewing how contract pricing may be incorporated into the RIT-T. Irrespective, contract pricing will remain a factor for Transgrid to assess commercial feasibility.

1.2. Purpose

We are requesting confidential submissions from non-network proponents in response to Transgrid's pricing structure outlined in this document. This will complete the commercial component of your EOI. Submissions should be informed by:

- AEMO's minimum and recommended contracting requirements ([published](#) 30 June 2024);
- information in and attached to the PADR e.g. technical specifications and effectiveness factors;
- the final "[Improving Security Frameworks](#)" rule change;
- any changes to your project or market conditions since your original EOI in March 2023.

Updated pricing will be used to assess the commercial feasibility of your proposal. While your proposal is not required to be commercially binding, the updated pricing should reflect the proponent's best estimate of the expected pricing for your future binding proposal. If there is a material change in pricing in the formal tender process, this may adversely affect the assessment of commercial feasibility of your proposal and its inclusion in the tender process, the selection of solutions under the PACR or the re-opening of the RIT-T.

1.3. Links

Key documents for reference include:

- Transgrid, Meeting System Strength Requirements in NSW - Project Assessment Draft Report, [link](#).
- Transgrid, Information for system strength non-network option proponents, [link](#).
- AEMO, Provisional Security Enablement Procedure, [link](#).

All other documents relating to this RIT-T can be found on the project page on Transgrid's website:

<https://www.transgrid.com.au/projects-innovation/meeting-system-strength-requirements-in-nsw>

1.4. Glossary

Acronym	Meaning
Activation Lead Time	The time required for an ISF Asset to become enabled for a system security service/s after receiving an instruction from AEMO for enablement.
Activation Payment	A payment to reflect the cost of commencing operation from a previously inactive state.
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
Availability Payment	A payment that reflects fixed costs for maintaining the availability of the system security service.
DUID	Dispatchable unit identifier
Enablement Period	The period over which an ISF Asset is instructed by AEMO to provide a system security service/s.
EOI	Expressions of Interest
ISF	Improving Security Framework refers to the final rule for the <i>Improving security frameworks for the energy transition</i> rule change ³
ISF Asset	A production unit, network element, other plant or facility that is under an agreement to provide a system security service/s.
Minimum Dispatch	Minimum stable level of energy dispatch (in absolute terms) required to provide the system security service for a generator, scheduled load or bi-directional unit, if applicable. For example, the Minimum Dispatch for a generator would be its minimum stable generation level required to provide the system security service.
NEM	National Electricity Market
NER	National Energy Rules
NSCAS	Network Support Control and Ancillary Services
PADR	Project Assessment Draft Report
PACR	Project Assessment Conclusions Report
PSCR	Project Specification Consultation Report
RIT-T	Regulatory Investment Test for Transmission
TNSP	Transmission Network Service Provider
Usage Payment	A payment to compensate for costs of operating in the manner required to provide the relevant system security service.

³ <https://www.aemc.gov.au/sites/default/files/2024-03/ERC0290%20-%20ISF%20final%20determination.pdf>

2. Commercial pricing

We are requesting confidential submissions from non-network proponents in response to Transgrid’s pricing structure outlined in this document. This will complete the commercial component of your EOI.

Transgrid has provided a pricing structure that accounts for:

- Feedback from existing EOI proponents previously submitted in March 2023
- AEMO’s minimum and recommended requirements for scheduling and enablement published in June 2024.

Transgrid is also seeking responses for a fully fixed price option for a 1-year contract.

Transgrid’s objectives are aligned to the NER. We are seeking to contract non-network solutions at a “efficient and prudent” cost. Contract execution will depend on the AER’s assessment of this as part of its advance determination of “system security network support payments” under NER 6A.6.6A.

We welcome feedback on the pricing structure in this document to improve the ability to manage risks and costs for both Transgrid and non-network proponents, in the best interest of consumers.

2.1. Scope of services

AEMO has the ability to enable any system security services in order to meet the minimum system security requirements.⁴ As defined in the NER, a system security service includes:

- a system strength service;
- an inertia network service;
- Network Support Control and Ancillary Services (NSCAS); or
- a transitional service,

to the extent procured by AEMO or a TNSP under an agreement for that service under the NER.

This document refers to the pricing structure for Transgrid to contract system strength and inertia services.

Some of the technologies that provide system strength can also provide inertia. AEMO can enable a system security contract to provide any service that it is technically capable of providing, regardless of whether that service is specified in the contract. Table 1 shows the expected scope of services depending on the technology type.

Table 1 Expected scope of system security services

Technology	Security services		
	System strength		Inertia
	Stable voltage waveform	Fault current	
Synchronous machines	☑	☑	☑
Grid forming batteries	☑	-	-

⁴ National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024 No. 9, p 36

With respect to synchronous machines, we are asking for provision of a single “synchronous system security service”, reflecting the fact that synchronous machines provide system strength and inertia as a combined service whenever they are synchronised. The payment structure will be agnostic as to the reason the service is required.

With respect to grid-forming batteries, EOI proponents should refer to the technical details provided in the PADR and Transgrid’s technical EOI request. In summary, Transgrid expects to be able to contract with grid-forming batteries to support the efficient level of system strength from 2025/26. Transgrid has excluded grid-forming batteries in the PADR from contributing to minimum fault level requirements until 2032/33. Transgrid has requested a power system model package from EOI proponents for grid-forming batteries to confirm their technical feasibility and scope of system strength services. Grid-forming batteries may have an opportunity to provide inertia services in future, if/when a need for additional inertia arises.

2.2. AEMO requirements

The previously proposed Operational Security Mechanism (OSM) has been replaced by the Improving Security Frameworks (ISF) rule change.⁵ Under the final rule, AEMO will enable system security contracts via a simplified scheduling mechanism.

AEMO published its Provisional Security Enablement Procedures (Provisional Procedures) in June 2024.⁶ The Provisional Procedures outline minimum or recommended requirements to be included in agreements for the provision of system security services entered into by TNSPs.

Full Security Enablement Procedures are due to be published in August 2025. AEMO may revise the information published in the Provisional Procedures prior to the publication of the full Security Enablement Procedures. Any agreement for the provision of system security services entered into by a TNSP before 31 August 2025 that is compliant with the Provisional Procedures is deemed to be compliant with the minimum or recommended requirements per new clause 4.4A.6(a)(3) in the full Security Enablement Procedures.

The Provisional Procedures set out minimum or recommended requirements for agreements including:

- General agreement structure
- Defining service provision
- Financial structure
- Intended scheduling arrangements
- General requirements.

We recommend that EOI proponents review the Provisional Procedures. We draw your attention to the following features:

- The ISF does not introduce a market. AEMO will schedule and enable services that have been contracted between a system security contractor and Transgrid.
- Energy revenue (if any) will continue to be settled via the energy market settlements.

⁵ AEMC, Improving security frameworks for the energy transition, project page available at: <https://www.aemc.gov.au/rule-changes/improving-security-frameworks-energy-transition>

⁶ Available at: https://aemo.com.au/-/media/files/electricity/nem/security_and_reliability/power_system_ops/procedures/so_op_3720---provisional-security-enablement-procedure.pdf?la=en

- Transgrid will make payments to system security contractors according to the agreed contract terms. This includes any contract adjustments for amounts linked to energy revenue settlements.
- AEMO's minimum requirements are a subset of Transgrid's expected commercial terms with each system security contractor. Most notably, Transgrid's pricing structure allows for an availability payment and/or establishment fee that are not considered in AEMO's scheduling mechanism.
- AEMO has limited provisions to update contract values in its scheduling mechanism; contracted payment values can be updated once every 30 days (each with 5 business days' notice).
- AEMO's requirements include technical and commercial requirements. Table 2 demonstrates how Transgrid's EOI requests (technical and commercial) are designed to address AEMO's requirements.

Table 2 Mapping AEMO requirements to Transgrid's EOI request/s

AEMO requirements		EOI request (technical) issued 17 June 2024	EOI request (commercial) (this document)
1. Identifying information	Asset Name	<input checked="" type="checkbox"/>	
	Technology Type	<input checked="" type="checkbox"/>	
	DUID(s) (if applicable)	<input checked="" type="checkbox"/>	
	Connection point	<input checked="" type="checkbox"/>	
	Registration status	<input checked="" type="checkbox"/>	
2. System security services	Megavolt-amperes (MVA) fault current	<i>To be assessed by Transgrid</i>	
	Megawatt-seconds (MWs) of inertia	<i>To be assessed by Transgrid</i>	
	Participation in a minimum secure commitment configuration	<i>To be assessed by Transgrid / AEMO</i>	
3. Auxiliary load	MW load consumed per hour of operation	<input checked="" type="checkbox"/>	
4. Default Activation Lead Time	Maximum expected time in hours and minutes to be enabled from a non-operational state	<input checked="" type="checkbox"/>	
5. Default Minimum Dispatch	Quantity in MW	<input checked="" type="checkbox"/>	
6. Pricing structure	Activation Payment (\$/activation)		<input checked="" type="checkbox"/>
	Usage Payment (\$/hr)		<input checked="" type="checkbox"/>
	Energy Revenue (\$)		<input checked="" type="checkbox"/>
Not a minimum requirement under AEMO's Security Enablement Procedure (Provisional)			
7. Pricing structure (Transgrid)	Establishment Fee (\$)		<input checked="" type="checkbox"/>
	Availability Payment (\$/month)		<input checked="" type="checkbox"/>

- AEMO also includes a general obligation for system security providers to provide additional data to AEMO/TNSP as required in relation to any items contained in the Security Enablement Procedures.

2.3. Pricing structure

Transgrid has proposed a pricing structure that is closely aligned to AEMO's minimum and recommended requirements. We have adopted AEMO's defined terms for consistency except for Transgrid's reference to "pricing structure" rather than AEMO's term "financial structure".

The pricing structure introduces a menu of pricing mechanisms by which EOI proponents are paid for their system security services. Not all pricing mechanisms are relevant to each non-network solution. EOI proponents should select the combination of pricing mechanisms that is most applicable to the cost drivers for their solution.

Contract duration

For the purpose of our EOI request, we are seeking pricing data for alternate contract durations; one-year, three-year and ten-year. The actual contract duration will vary depending on the system security need and value in contracting over longer-term periods.

Establishment Fee

An Establishment Fee represents the one-off setup cost.

For improved visibility, we have retained this as a separate term. It may or may not be applicable to the EOI solution. If applicable, it is expected that it would only be relevant to the commencement of the first contract (unaffected by the contract term and not payable for any contract renewals).

Availability Payment

The Availability Payment is intended to cover fixed costs for providing the service.

The Availability Payment is linked to the availability parameters and technical requirements of the contracted ISF Asset.

Transgrid is considering that the ISF Asset must be available in ISF or dispatched in the energy market to meet the availability requirements contracted with Transgrid. Appendix A provides an illustrative example.

Alternate availability requirements will apply to solutions that are scheduled to run continuously (except for planned maintenance), which may include non-network synchronous condensers.

Activation Payment

The Activation Payment is intended to cover the cost of the service being enabled/activated. This is intended to cover startup and shutdown costs (if any) related to performing a physical start from a previously inactive state. No Activation Payment is payable if the unit is already online.

The Activation Payment is quoted as a fixed payment in dollars based on the activation event rather than accounting for any variable costs. AEMO assumes that the Activation Payment would include the start-up and shut-down dispatch cycling costs of any length of run time and any length of off time.

AEMO will allow Activation Payment values to be updated once every 30 days with 5 business days' notice.

For convenience, Table 3 extracts the financial parameters as published by AEMO.

The table retains AEMO’s colour format to clarify this is a direct extract. Transgrid has provided explanations or discussion points in response to AEMO’s requirements for the benefit of EOI proponents.

Table 3 Financial parameters in AEMO’s scheduling function – Activation Payment

Category	Definition	Stipulations
Activation Payment	<p>Activation Payments (if relevant) are made when an ISF asset performs a physical start from a previously inactive state as a result of AEMO selecting the system security service to be enabled.</p> <p>If the ISF asset was already operating prior to AEMO selecting the system security service to be enabled, no Activation Payment is made.</p>	<ul style="list-style-type: none"> • Fixed payment in dollars. • Fixed but may be restated annually. – Intra-year revisions allowable with endorsement of TNSP where triggered via a verifiable cause, such as a change in fuel costs. Limited to a maximum of 1 intra-year revision per 30 days. Notification of an intra-year revision is to be provided to AEMO at least 5 business days prior to application. • If AEMO instructs the Provider to cease providing services or cancels or amends a schedule indicating an intention to enable a service: <ul style="list-style-type: none"> – If the instruction is given or schedule is cancelled or amended before the Activation Period, no Activation Payment is payable. – If the instruction is given or schedule is cancelled or amended within the Activation Period, the full Activation Payment is payable.

If the Activation Lead Time is more than 12 hours, AEMO will consider that the service is unavailable for scheduling and enablement.

Transgrid requests that EOI proponents provide pricing data for solutions that comply with this requirement i.e. only EOI solutions with an Activation Lead Time less than or equal to 12 hours.

As an illustration, assume that a coal generator has an Activation Lead Time that varies according to its start type. Table 4 illustrates that the scope of contracted system security services is limited to when the unit is available from a warm or hot start or currently online. For example, if the coal generator planned to come offline, AEMO could request the unit to stay online under ISF. It would be paid by Transgrid for the ISF enablement under the terms of the agreed system security contract.

Table 4 Illustration of scope of eligible services depending on Activation Lead Time

Start	Activation Lead Time		Eligible for system security contract?
	Less than or equal to 12 hours	Greater than 12 hours	
Cold start		☑	No
Warm start	☑		Yes
Hot start	☑		Yes
Currently online	☑		Yes

The hypothetical coal generator is not considered available for system security services from a cold start. It is eligible to contract for system security services on the basis of a warm or hot start or already online.

Proponents should identify the conditions under which their EOI solution complies with AEMO’s minimum requirements and complete the pricing structure for eligible solutions only.

Usage Payment

The Usage Payment is intended to cover the variable costs of operating in the manner required to provide the relevant system security services. It is quoted as a fixed payment in dollars per hour of service operation.

AEMO assumes a Minimum Dispatch level is contracted to provide the system security service.

- For some technologies, the Minimum Dispatch level will be 0 MW e.g. synchronous condensers, synchronous generators operating in synchronous condenser mode and grid forming batteries.
- For synchronous generators, the Minimum Dispatch will reflect the unit's minimum stable operating level.

The Usage Payment is expected to reflect the costs of operating the service, which may or may not include fuel and other variable costs for Minimum Dispatch levels. If the Minimum Dispatch varies in real-time, AEMO does not account for any change to the Usage Payment in its scheduling mechanism. Transgrid may account for this change as part of its payment calculation under the contract terms. AEMO will take it into account for the assessment of Energy Revenue (see below).

AEMO will allow Usage Payment values to be updated once every 30 days with 5 business days' notice.

For convenience, Table 5 extracts the financial parameters as published by AEMO.

Table 5 Financial parameters in AEMO's scheduling function – Usage Payment

Category	Definition	Stipulations
Usage Payment	The payment, stated on a per hour basis, that the Provider will receive from the TNSP when the service is enabled. Usage Payments (if relevant) are payable when the asset is enabled to provide services and would not otherwise be operating for the purpose of earning Energy Revenue (via spot market operation).	<ul style="list-style-type: none"> • Dollars per hour of service operation. – That is, not dollars per megawatt hour (MWh). • Settlement will be calculated on a trading interval basis. • Fixed but may be restated annually. – Intra-year revisions allowable with endorsement of TNSP where triggered via a verifiable cause, such as a change in fuel costs. Limited to a maximum of 1 intra-year revision per 30 days. Notification of an intra-year revision is to be provided to AEMO at least 5 business days prior to application. • Usage Payments are not payable during the Activation Lead Time. • Usage Payment will not be adjusted for unforeseen costs. This payment does not change in real-time, even if: <ul style="list-style-type: none"> – Fuel prices or stored energy costs vary; – Minimum Dispatch is altered. • The Provider must not be paid Usage Payments nor transfer Energy Revenue to the TNSP if enablement is discontinued for any reason.

Energy Revenue

Energy dispatch of synchronous generators and energy consumption by auxiliary load will continue to be settled via the energy market settlements process.

Non-network proponents must clarify whether Energy Revenue is proposed to form part of the contract terms with Transgrid.

Transgrid must notify AEMO accordingly whether to include or exclude Energy Revenue in AEMO’s scheduling mechanism.

If confirmed for inclusion, then AEMO assumes, for the purposes of scheduling, that Energy Revenue (positive or negative) is fully passed through to the TNSP as part of its contract with the system security contractor i.e. AEMO assumes that:

- If the spot price is less than \$0/MWh, the system security contractor would receive a payment from Transgrid equal to its negative Energy Revenue.
- If the spot price is greater than \$0/MWh, the system security contractor would pass through its Energy Revenue to Transgrid.

For convenience, Table 6 extracts the financial parameters as published by AEMO.

Table 6 Financial parameters in AEMO’s scheduling function – Energy Revenue

Category	Definition	Stipulations
Energy Revenue	Energy Revenue is the transfer of revenue from the sale of electricity on the spot market (positive or negative) to the TNSP resulting from the Provider being enabled at Minimum Dispatch or Auxiliary load (if applicable).	<ul style="list-style-type: none"> • If Energy Revenue is a calculated amount in an agreement, AEMO will assume (for scheduling purposes that) the Energy Revenue calculation represents immediate bidirectional pass through of Energy Revenue (positive and negative) associated with the Minimum Dispatch (where relevant) or auxiliary load (e.g. that associated with a synchronous condenser). • AEMO will not consider a transfer that is unidirectional in its scheduling, such as “price floors”, or those determined based on average prices over a period of time. • The Provider must not continue to be paid Usage Payments nor transfer Energy Revenue to the TNSP if enablement is discontinued for any reason.

Energy Revenue is a key variable that may significantly change the value of system security contract payments. For simplicity, AEMO’s scheduling mechanism does not account for more complex contracting terms. Transgrid continues to welcome commercial terms from EOI proponents that may reduce risks and costs to consumers.

Contract terms

Transgrid will provide contract terms as part of the formal tender process.

For the purpose of EOI pricing, EOI proponents should note that system security payments will only be payable where the system security contractor has complied with its agreed level of availability and service. Proponents should assume that their availability for the system security contract is consistent with their technical response of the EOI submission.

For example, if the contracted availability requirement has not been met, the Availability Payment may be subject to an availability rebate to account for the shortfall. If the system security provider does not comply with AEMO’s instructions for ISF Enablement (e.g. not commencing start-up), the Activation Payment and Usage Payment will not be payable. Full details of payment calculations and terms will be provided in the draft contract to be released with the formal tender.

2.4. What we are seeking

We are seeking EOI proponents to complete:

- Pricing structure template provided in Table 7 (methodology/calculations and pricing)
- Response to the pricing structure and input to the commercial terms as provided in Table 8
- Response to a fixed price option for a 1-year contract as provided in Table 9.

Technical information

A technical questionnaire has already been released to EOI proponents (dated 17 June 2024).

The pricing template requests that EOI proponents provide pricing data at a unit level, which corresponds to the submission of technical data at a unit level where relevant. Refer to Appendix A for clarification.

Methodology / calculation of provided pricing

We welcome EOI proponents to share the methodology and calculations that will inform their pricing decisions. This will help us to tailor the pricing structure and commercial terms in preparation for the future procurement of non-network solutions.

This may include (not exhaustively):

- Explanation of fixed and variable cost components within each pricing term e.g. any variable fuel costs factored into the Activation Payment as part of the Default Activation Lead Time.
- Assumptions regarding spot market operation and ISF operation
- Assumptions regarding the frequency and duration of the ISF Enablement Period
- Factors affecting pricing as the contract term varies
- Factors affecting pricing as the frequency and duration of the ISF Enablement period changes over time

Indicative pricing by contract duration

The contract duration depends on a number of factors. We welcome EOI proponents providing an indication of how pricing may vary depending on the contract duration.

For the purpose of the EOI update, we have nominated:

- One year: in recognition that AEMO will release its full Security Enablement Procedures in August 2025
- Three years: in recognition of Transgrid's binding obligation for a three-year period
- Ten years: in recognition that Transgrid may elect to contract for longer periods of time to reduce contracting costs and increase value and certainty for both parties.

EOI proponents should complete Table 7 Pricing structure in real terms, \$FY25. The default assumption will be to escalate by CPI. EOI proponents should assume that the start date of the contract is Dec-2025, unless otherwise stated by the proponent.⁷ The EOI response questionnaire is available on Transgrid's website, [link](#).

⁷ The start date corresponds to Transgrid's obligations under Clause S5.1.14 of the NER to deliver system strength services to the NSW power system to meet standards set by AEMO from 2 December 2025.

Table 7 Pricing structure – template for completion by EOI proponents per unit

Field	Units	Description	Methodology / calculation	Contract term		
				1 year	3 years	10 years
Establishment fee	\$ per unit	This refers to a one-off setup cost, if applicable.	[explanation]	[value]		
Availability payment	\$/month per unit	This is intended to cover fixed costs for providing the service.	[explanation]	[value]	[value]	[value]
Activation payment <i>(AEMO minimum requirement)</i>	\$/activation per unit	This is intended to cover the cost of the service being enabled/activated. This is intended to cover startup costs (if any).	[explanation]	[value]	[value]	[value]
Usage payment <i>(AEMO minimum requirement)</i>	\$/hr per unit	This is intended to cover the costs of operating in the manner required to provide the relevant system security services, when enabled in accordance with AEMO's instructions.	[explanation]	[value]	[value]	[value]
Energy revenue <i>(AEMO minimum requirement)</i>	N/A	This refers to the transfer of revenue from the sale of electricity on the spot market (positive or negative) resulting from the ISF Asset being enabled at Minimum Dispatch or Auxiliary Load (if applicable).	[explanation to confirm: A. No passthrough B. 100% passthrough C. Alternate arrangement]			

Note: EOI proponents should refer to the EOI commercial response questionnaire, an Excel workbook, to complete their responses.

We recognise that EOI proponents are best placed to assess the risks and opportunities of the pricing structure, including any risk premiums for fixed costs. We welcome feedback on how to manage cost and risk exposure in the interest of consumers. This may be achieved within the terms of the proposed pricing structure or may require an adaptation of the pricing structure itself. To facilitate this discussion, we request that proponents provide a fixed price option for a 1-year contract and clarify the assumptions applied. We have provided a template in Table 9.

We also recognise that EOI proponents may have existing arrangements or agreements in place that they need to manage in parallel to the system security contract. We welcome your clarification of any contracting constraints and/or the terms on which you can provide system security services.

We have provided initial questions in Table 8 for discussion and we welcome broader comments beyond this list. Note that contract terms and pricing proposals must fulfil the minimum requirements as stipulated in AEMO's Provisional Procedures.

Table 8 Input to commercial terms – template for EOI proponents

Commercial terms	Description	Response
Cost and risk management strategies within pricing structure	<p>We welcome feedback on cost and risk management strategies within the constraints of AEMO’s minimum and recommended requirements.</p> <p><i>For example:</i></p> <ul style="list-style-type: none"> • <i>Can the EOI Proponent share insights on which price components they expect to be fixed or formula based?</i> • <i>What are the risks or opportunities with fixing certain price components?</i> • <i>Can the EOI Proponent propose approaches to manage any timing and pricing risks in response to AEMO’s requirements (Usage Payment and Activation Payment fixed annually with a maximum of 1 intra-year revision per 30 days permitted)?</i> • <i>Can the EOI Proponent offer an approach to manage risks and variability of Energy Revenue?</i> • <i>Are there specific pricing terms to consider given the maximum Activation Lead Time is 12 hours?</i> 	[insert]
Contracting constraints	<p>Please can you advise if there are any agreements or arrangements in place that may impact your ability to deliver system security services or the terms on which you can carry out those services within your nominated timeframes?</p>	[insert]

Note: EOI proponents should refer to the EOI commercial response questionnaire, an Excel workbook, to complete their responses.

Table 9 Fixed price contract – template for EOI proponents

Description	Methodology / calculation / assumptions	Month	\$/month per unit
<p>Please provide a fully fixed price for a 1-year contract. The contract will allow AEMO to schedule the proponent’s solution if and when a system security requirement arises in accordance with AEMO’s security enablement procedure.</p> <p>Please provide a breakdown of payments on a monthly basis. For the purpose of the EOI submission and consistency across proponents, assume the contract starts Dec-2025 and finishes end Nov-2026.</p> <p>The price should be quoted on the same basis as an availability payment, \$ per month per unit. The price should exclude the establishment fee. The price should assume 0% passthrough of energy revenues from the proponent to Transgrid. The value of the monthly payment may differ from month to month to reflect the proponent’s costs and expected operating profile in the energy market.</p> <p>Please confirm what assumptions you have applied. Are there information requirements for the proponent to enable this contract type?</p> <p>The fully fixed price should cover the proponent’s fixed and variable costs to be available and perform the relevant system security services as needed in response to AEMO’s ISF instructions for enablement.</p> <p>It is assumed that the availability for the system security contract is consistent with the technical response of the EOI submission unless otherwise stated by the proponent.</p>	[explanation]	Dec-2025	[value]
		Jan-2026	[value]
		Feb-2026	[value]
		Mar-2026	[value]
		Apr-2026	[value]
		May-2026	[value]
		Jun-2026	[value]
		Jul-2026	[value]
		Aug-2026	[value]
		Sep-2026	[value]
Oct-2026	[value]		
Nov-2026	[value]		

Description	Methodology / calculation / assumptions	Month	\$/month per unit
For synchronous generators, proponents should note that the availability requirement can be satisfied by dispatch in the energy market or offering availability for ISF enablement (irrespective of whether the solution is scheduled for ISF enablement). Refer to Appendix A for details.			

Note: EOI proponents should refer to the EOI commercial response questionnaire, an Excel workbook, to complete their responses.

3. EOI update submission

3.1. Who needs to provide updates

The technical document for non-network proponents (released 17 June 2024) clarified the eligibility and submission requirements for EOI proponents.⁸

This addendum requests inputs to the pricing structure from all existing and new EOI proponents that are providing technical responses to Transgrid.

We need to ensure that we have the most accurate and up-to-date information about your proposed terms for the PACR. This enables us to complete our assessment of whether the proposed solution is a credible option (commercially and technically).

We request that existing EOI proponents update their commercial information given the time lag since their original submission, the ISF final rule change and AEMO's recently published Provisional Procedures.

3.2. Process

Transgrid will use submissions to assess the technical and commercial feasibility of non-network solutions to meet system strength needs, as part of the RIT-T process. These submissions will be treated confidentially. Proponents have a five-week period from the release of this document to submit their commercial terms and pricing EOI. Following this, Transgrid will run a competitive procurement process and/or commercial negotiations to establish system security contracts with these proponents.

Proponents will bear all costs in responding to this EOI for commercial pricing and are not entitled to claim for reimbursement of time, materials or expenses incurred.

Please submit enquiries to our dedicated team as follows: systemstrength@transgrid.com.au.

3.3. Evaluation

Transgrid will assess EOI commercial responses in line with the RIT-T Guidelines⁹ and as previously outlined in *Information for proponents of non-network solutions to meet system strength requirements in NSW – Sections 5.3 and 7.1*.¹⁰

3.4. Submission

The commercial component of your EOI submission is due no later than **6pm, Thursday 26 Sept 2024**.

Please submit the EOI commercial response questionnaire (Excel workbook) available on Transgrid's [website](#). Please submit via email to systemstrength@transgrid.com.au.

⁸ Transgrid, Information for proponents of non-network solutions to meet system strength requirements in NSW, Available at: https://www.transgrid.com.au/media/j1bjstkc/2406-transgrid_information-for-system-strength-non-network-option-proponents.pdf, p.14 and p.18

⁹ AER, Regulatory investment test for transmission – Application guidelines, Available at: <https://www.aer.gov.au/documents/aer-rit-t-guidelines-final-amendments-clean-6-october-2023>

¹⁰ Available at: https://www.transgrid.com.au/media/j1bjstkc/2406-transgrid_information-for-system-strength-non-network-option-proponents.pdf, section 5.3 and 7.1.

4. Disclaimers

4.1. General

This document and its attachments have been prepared and made available solely for information purposes. It is made available on the understanding that Transgrid and/or its employees, agents and consultants are not engaged in rendering professional advice. Nothing in these documents is a recommendation in respect of any possible investment.

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2. Independently verify and check the currency, accuracy, completeness, reliability and suitability of reports relied on by Transgrid in preparing these documents
3. Obtain independent and specific advice from appropriate experts or other sources.

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4.2. Expressions of Interest (EOIs)

4.2.1. Notice

You must read this section before reading or making any use of this document, including any information contained in this document and any related discussion or information provided as part of, or in connection with, the EOI process contemplated in this document (together “the EOI material”). By continuing to read,

use or otherwise act on the EOI material, you agree to be bound by the following terms and conditions (including as amended). You consent to submit to the laws and courts of Australia in respect of any proceedings arising out of or relating to the EOI material.

4.2.2. Disclaimer

You acknowledge and agree that:

- (a) the EOI material has been provided by Transgrid for your information only;
- (b) Transgrid:
 - (i) does not give any express or implied warranties or make any representation as to the accuracy, completeness, adequacy and sufficiency of the EOI material or the assumptions on which it is based or that it has the right to disclose the EOI material; and
 - (ii) does not owe you or any other person any duty of care in connection with the EOI material;
- (c) except where otherwise agreed in writing, you must not rely upon any of the EOI material as being accurate, complete, adequate or sufficient in entering into or performing any of your obligations under any document in connection with EOI or the Project;
- (d) you must make your own independent evaluation of the accuracy, completeness, adequacy and sufficiency of the EOI material (and any other information);
- (e) you have no rights to appeal, object or make a claim against Transgrid in respect of any decision, determination, evaluation or analysis by Transgrid as part of the EOI, the Project or the EOI material;
- (f) Transgrid reserves the right, but is under no obligation, to review or amend the EOI material to account for any additional information not reflected in this document, whether in existence on or after the date of its publication; and
- (g) Transgrid may rely on the acknowledgements made by you in this clause 2.1 in entering into any further document/agreement with you in connection with the EOI or the Project.

4.2.3. Release

You irrevocably and unconditionally release and indemnify Transgrid from and against:

- (a) any claim against Transgrid; and
- (b) any liability, cost, loss or damage suffered or incurred by you (or your associates), arising out of, or in connection with:
 - (c) your (or your associates') receipt or use of, or purported reliance upon, the EOI material; and
 - (d) Transgrid exercising or failing to exercise any discretion or right it has or may in the future have in connection with the EOI or the Project.

4.2.4. Rights

In addition to its rights set out elsewhere in this EOI, Transgrid may at any time and without giving reasons:

- (a) extend the EOI proposals closure date at any time before the closure date by notice to potential participants;

- (b) extend the Information enquiries closure date at any time by notice to all potential participants (before the closing time) or all participants (after the closing time);
- (c) shortlist one or more participants;
- (d) reject any or all EOI proposals;
- (e) not accept any EOI proposals;
- (f) negotiate a private agreement with one or more participants;
- (g) enter into a contract with one or more participants or any other person at any time;
- (h) request one or more participants to review, improve and/or enhance any or all part(s) of its EOI proposal;
- (i) request any participant to submit an offer;
- (j) amend, suspend, discontinue or terminate the process set out in this EOI by notice in writing to one or more participants whose EOI proposal(s) have been excluded from further evaluation and assessment;
- (k) provide additional information or clarification to participants;
- (l) not proceed with this EOI, in the manner set out in clause 2, or at all;
- (m) terminate a participant's involvement in the EOI process and/or discontinue the evaluation and assessment of an EOI proposal where Transgrid determines that the EOI proposal is unsuitable, unsatisfactory, substantially incomplete or clearly uncompetitive;
- (n) negotiate with one or more participants or any other person, and enter into transaction documents with any participant or other person;
- (o) accept or reject any EOI proposal which:
 - (i) is late;
 - (ii) is in any way incomplete or irregular;
 - (iii) does not comply with any requirements of this clause 2;
- (p) Transgrid's decision to exercise any or none of the rights in this clause 2 is final and Transgrid will not be liable to any participants because Transgrid has exercised any or none of its rights in this clause 2; and
- (q) Transgrid may exercise its rights in this clause with respect to one participant only or to multiple participants at the same time.

Appendix A Frequently Asked Questions

1. *Can proponents submit pricing information at an aggregated rather than unit level?*

In some instances, EOI proponents have previously proposed pricing information at an aggregated level e.g. pricing as a consolidated portfolio encompassing multiple generators.

AEMO's Provisional Procedures confirms that an ISF Asset "must not encompass more than one DUID".¹¹

For the purpose of the EOI, we request pricing information at a unit level. This gives better visibility of how the draft contracts will be structured and required inputs to AEMO's scheduling mechanism.

We welcome EOI proponents to clarify if and how pricing information may be adjusted if Transgrid contracts for multiple solutions per proponent. We will still need to disaggregate any consolidated pricing offer into the component units for the purpose of AEMO's scheduler. We welcome EOI proponents to perform that disaggregation in their submissions.

2. *Why is the maximum Activation Lead Time 12 hours?*

The Activation Lead Time is a maximum of 12 hours, due to the ISF rule requirement for a unit to be enabled as close to real-time as practicable but not more than 12 hours ahead of time.

Refer to Box 1 for extract of the rule change.

Box 1 Extract of AEMC's indicative mark-up for the ISF rule change

4.4A.4 Enablement principles

When electing the range and quantity of system security services to be enabled under clause 4.4A.1, AEMO must use reasonable endeavours to give effect to the following principles:

- (a) the system security services that are enabled should be the lowest total cost combination required to achieve and maintain the minimum system security requirements and the stable voltage waveform requirements;
- (b) a system security service should be enabled as close as practicable to the relevant trading interval, and in any case, enabled no more than 12 hours ahead of the trading interval;

...

Source: AEMC, Indicative mark up of changes made by Schedules 1-9 of the National Electricity Amendment (Improving security frameworks for the energy transition) Rule 2024, p.41¹²

AEMO, rather than Transgrid, is responsible for scheduling units under the ISF. Transgrid's contracts with system security providers must comply with AEMO's scheduling function.

3. *How can generators respond to high prices in the energy market once they are enabled for ISF?*

AEMO's Provisional Procedures outline the operational arrangements for ISF assets that are capable of and registered for spot market operation.

¹¹ AEMO, Provisional Security Enablement Procedure (Improving Security Frameworks), Available at: https://aemo.com.au/-/media/files/electricity/nem/security_and_reliability/power_system_ops/procedures/so_op_3720---provisional-security-enablement-procedure.pdf?la=en, p.6

¹² AEMC, Available at: <https://www.aemc.gov.au/sites/default/files/2024-04/Final%20Rule%20-%20in%20mark%20up.pdf>, p.41

2.2.3 Spot market operation and enablement

This section applies for ISF assets that are capable of and registered for spot market operation.

It is a minimum requirement that agreements recognise, and do not contain provisions that are inconsistent with, the following operational arrangements:

- If an ISF asset has a requirement for energy dispatch when enabled, such as a minimum stable generation level, it cannot undertake spot market operation concurrently with enablement. This is in alignment with the underlying principle behind new clause 4.4A.4(c), given that ISF assets with a requirement for energy dispatch when enabled would not have been online were it not for their enablement and therefore may not have undertaken spot market operation were it not for their enablement. For an ISF asset with a requirement for energy dispatch when enabled, to undertake spot market operation, it must:
 - End its enablement by bidding the ISF asset to reflect the new form of operation in a manner consistent with the full Security Enablement Procedures; and
 - Continue providing the system security service throughout the enablement period as initially stated in AEMO's instruction for enablement, via spot market operation or by returning to ISF enablement (so as not to create a security gap, nor with the intention of decommitting from operation prior to the end of the enablement period).
- Conversely, if an ISF asset does not have a requirement for energy dispatch when enabled, it can undertake spot market operation, because it would have been capable of doing so were it not for the enablement of system security services. The ISF asset must continue to provide the system security service for the duration of the enablement period.

Source: AEMO, Provisional Security Enablement Procedure (Improving Security Frameworks), 30 June 2024, p.8-9

For the purpose of illustration, assume that an ISF Asset wants to dispatch in the energy market if the regional reference price (RRP) exceeds \$300/MWh. It has a system security contract with Transgrid.

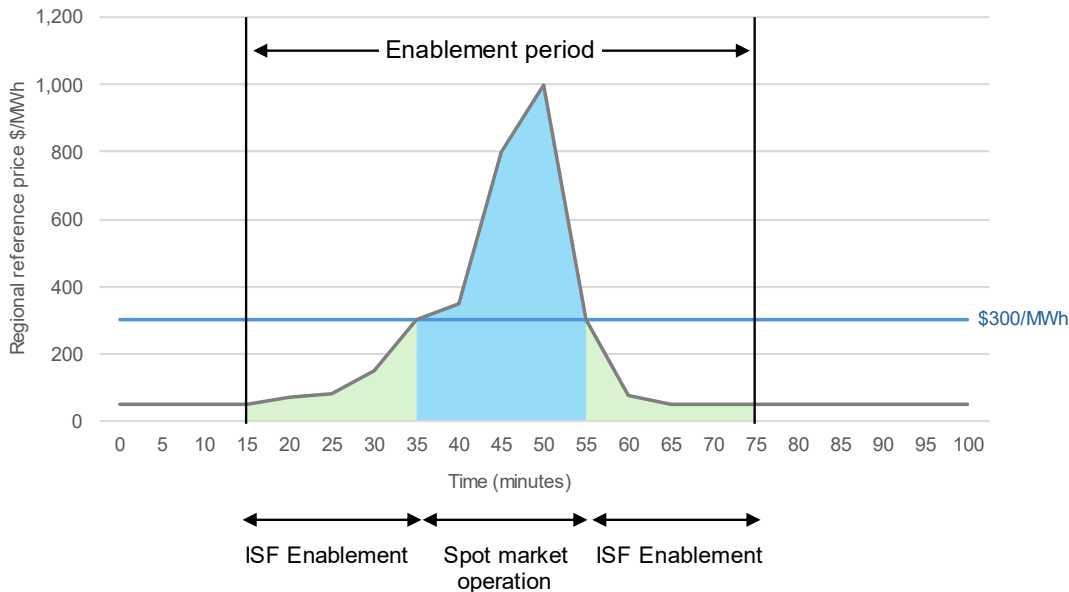
Figure 1 illustrates how the ISF asset might respond to higher prices in the energy market.

Assume that:

- The Enablement Period is a 60-minute period; T15 to T75.
- At T15, AEMO enables the ISF Asset for ISF at Minimum Dispatch.
- At T35, during the Enablement Period, there is a temporary outage in the energy market which leads to a spike in RRP greater than \$300/MWh.
- At T35, the ISF Asset bids to move to spot market operation to dispatch at the higher RRP. It may generate above its Minimum Dispatch according to the outcomes of the NEM dispatch engine.
- At T55, the outage is resolved and the RRP returns below \$300/MWh
- At T55, the ISF Asset bids available for ISF enablement to complete its Enablement Period until T75.

In terms of continuity of service, the ISF Asset has provided Minimum Dispatch during ISF enablement and *at least* Minimum Dispatch during spot market operation.

Figure 1 Illustrative example of ISF and spot market operation



The ISF Asset’s availability requirements would be satisfied by ISF Enablement and spot market operation.

The settlement of the Activation Payment, Usage Payments and Energy Revenue during the ISF Enablement and spot market operation would depend on the commercial arrangements between Transgrid and the system security contractor.

We welcome suggestions from EOI proponents as to how to manage cost and risk exposure in the interest of consumers. Refer to Table 8.