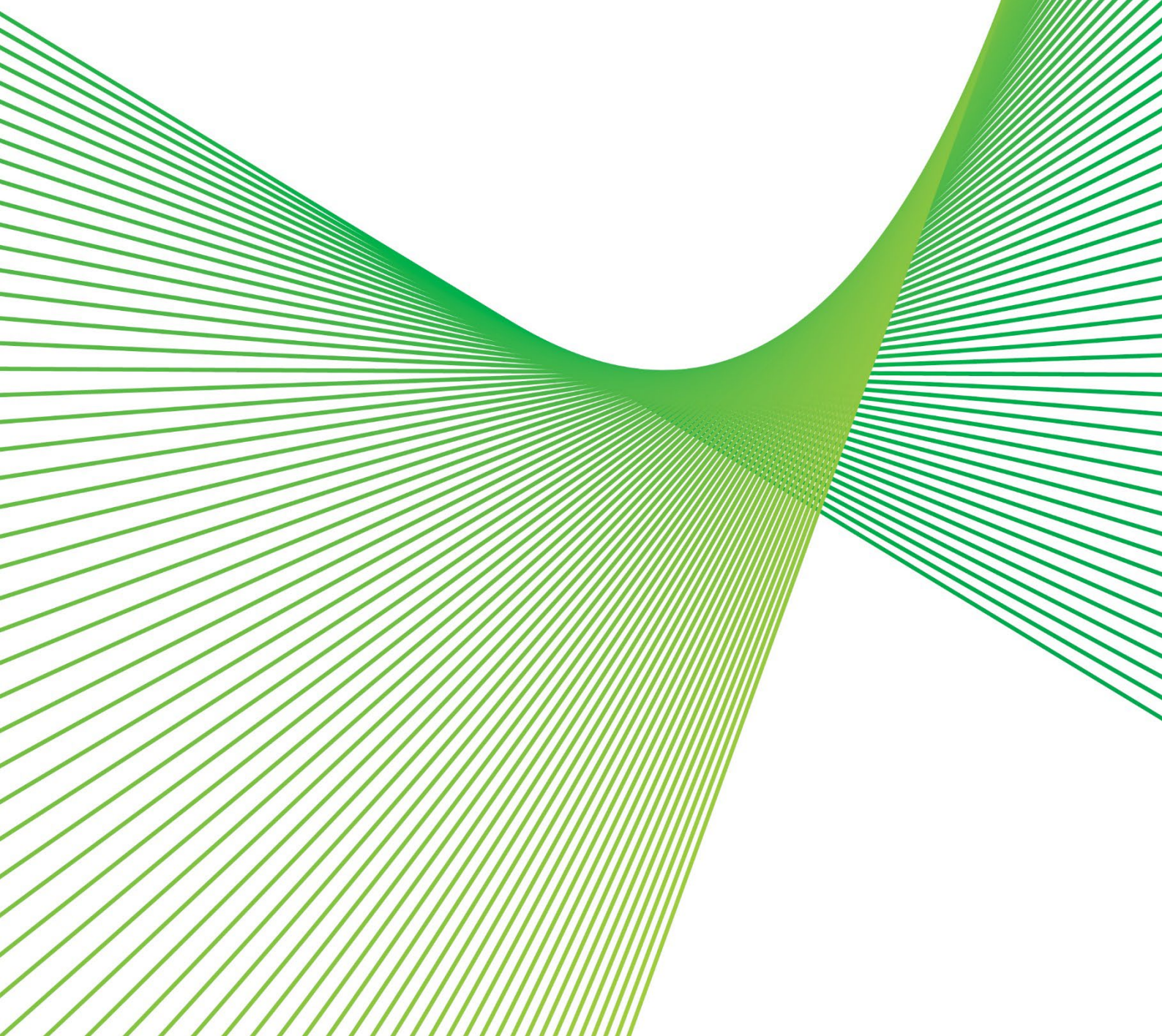


Returnable Schedule for Expression of Interest

Complying with reactive margin requirements at Beryl – Non-network options

Date of issue: 15 November 2024



Context

Transgrid is seeking Expressions of Interest (EOI) from potential service providers to provide non-network options to manage voltage levels at Beryl.

Responses to this EOI will inform the development of Transgrid's RIT-T for 'Complying with reactive margin requirements at Beryl', including the technical and economic assessment of credible options to meet the identified need. The RIT-T is a whole-of-market economic benefits test and optimisation; its conclusions will rank potential network and non-network options and identify the preferred option (or portfolio of options) that will maximise net market benefits.

Where non-network solutions (i.e. services procured from third parties) form part of the preferred option selected through the RIT-T process, Transgrid will run a competitive procurement process and/or commercial negotiations to establish network support contracts with these proponents.

This Returnable Schedule should be read in conjunction with our PSCR and EOI for '[Complying with reactive margin requirements at Beryl](#)'.

Mandatory information to be provided

Proponents should provide the following information (as applicable), using this Returnable Schedule.

Project details

Parameter	Applicable technology	Description	Response
Company name	All	Name of the company submitting this EOI	
ABN	All	ABN of the company submitting this EOI	
Key contact name	All	Name of the key contact for this EOI	
Contact email address	All	Email address for the key contact	
Contact phone number	All	Phone number for the key contact	

Parameter	Applicable technology	Description	Response
Solution name / address	All	Name and/or address of the solution (or multiple units that form part of the solution)	
Location	All	Substation of connection to the transmission network	
Commissioning date	New or modified solutions	Expected date for a proposed new project to have completed construction, grid connection, testing and all commissioning activities and be available to provide the proposed service	

Technical

Parameter	Applicable technology	Description	Response
Technology type	All	e.g. synchronous generator, energy storage systems (grid forming / grid following), inverter-based renewables	
Asset life	All	Expected operating life for (new and existing) assets that will provide proposed services	
Details	All	Details of equipment, including multiple units if appropriate, and any other relevant information describing the solution (existing or new)	
Rated Capacity	All	Rated capacity of the facility comprising the solution in MVA	
Minimum stable operating level	Synchronous generators	If the solution is a synchronous generating unit(s), the minimum stable operating level of each unit in MW	
Overload capacity	Inverter-based solutions	If the solution is an inverter-based solution, and reliant on overload capacity for provision of the dynamic reactive response service, the overload capacity of the inverter in MVA or percent of Rated Capacity and any applicable durations.	

Parameter	Applicable technology	Description	Response
Sub transient impedance of the machine	Synchronous machines	If the solution is a synchronous machine, sub transient impedance of the machine, in per unit (p.u.)	
Impedance of the transformer	New inverter-based solutions	If the solution is a new inverter-based solution, impedance of the transformer, in per unit (p.u.)	
Vector group of the transformer	All	For example, Star/Delta, Delta/Star, Star/Delta/Delta etc.	
Line impedance to the point of connection	New solutions	If the solution is new, an estimate of line impedance to the point of connection of the transmission network, in per unit (p.u.)	
Communications	All	Proposed dispatch communications protocol with AEMO and/or Transgrid's control room	

Availability and activation

Parameter	Applicable technology	Description	Response
Start-up time	All	Expected time following a request for enablement before the solution can provide contracted services	
Continuous running time	All	Maximum period of time the solution can be run continuously when providing services	
Annual availability	All	Annual availability of the solution to provide services, represented as a percentage of a year. 98% is specified, but proponents may choose to propose an alternative value	
Annual maintenance duration	All	Duration of a year in which the solution would not be able to provide the service due to maintenance (represented in hours or a percentage)	

Periods of unavailability	All	Likely month/day/time that the solution will be unavailable to provide contracted services (if any)	
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Economic

The RIT-T is a whole-of-market economic benefits test which seeks to identify the transmission investment option(s) that maximises net market benefits – which may include network and/or non-network options. In this EOI Transgrid is seeking information about both the expected *economic cost* (regardless of ownership) and the expected *contract price* of proposed non-network options.

Note: Existing and committed assets are considered to have no capital costs for the purpose of the RIT-T assessment (although modifications to existing facilities may include incremental capital investment which should be included).

Parameter	Applicable technology	Description	Response
Available to meet all or part of the identified need	All	Yes/no Please specify expected availability dates during this period	
Service start date	All	Proposed start date for providing the service to Transgrid	
Service end date	All	Proposed end date for providing the service to Transgrid	
Capital cost	All	Total capital cost (regardless of ownership) ¹ for the proposed solution, including costs of plant/equipment, land, civil works, grid connection assets and development costs. If possible, please reflect the actual spend profile for the project (otherwise, lump sum). These costs must exclude a rate of return on capital, and should not subtract any: <ul style="list-style-type: none"> Expected payments from Transgrid 	

¹ As per RIT-T guidelines, capital costs are considered \$0 for existing or committed assets, and for new assets the total capital cost of the underlying resource for the non-network solution (i.e. regardless of ownership).

Parameter	Applicable technology	Description	Response
		<ul style="list-style-type: none"> Expected payments or revenues from energy (and related) markets External funding contributions (e.g. grants) <p>Existing or committed assets are considered to have zero capital cost (i.e. are a sunk cost). However, capital costs associated with modifying or upgrading existing facilities to provide services should be included.</p>	
Committed project	New solutions	<p>Yes/no</p> <p>Will the proposed services be provided by assets that meet the definition of 'committed project' under the AER's RIT-T Application Guidelines, using the following criteria:</p> <ol style="list-style-type: none"> The proponent has obtained all required planning consents, construction approvals and licenses, including completion and acceptance of any necessary environmental impact statement Construction has either commenced or a firm commencement date has been set The proponent has purchased/settled/acquired land (or commenced legal proceedings to acquire land) for the purposes of construction Contracts for supply and construction of the major components of the necessary plant and equipment (such as generators, turbines, boilers, transmission towers, conductors, terminal station equipment) have been finalised and executed, including any provisions for cancellation payments The necessary financing arrangements, including any debt plans, have been finalised and contracts executed. 	
External contributions	New projects	<p>Has the project that is proposed to provide services received any external funding (or is expected to receive external funding) such as from ARENA or government?</p>	

Parameter	Applicable technology	Description	Response
Fixed operating cost	All	Annual fixed operation and maintenance (FOM) costs of the underlying resource	
Variable operating cost	All	Expected running costs (\$/MWh or \$/hour) of the underlying resource, including fuel costs and variable operations and maintenance (VOM)	
Greenhouse gas emissions (scope 1)	All	Estimated scope 1 greenhouse gas emissions from providing services (tCO ₂ e/MWh or tCO ₂ e/hour)	
Greenhouse gas emissions (scope 2)	All	Estimated scope 2 greenhouse gas emissions from providing services (tCO ₂ e/MWh or tCO ₂ e/hour)	
Project benefits	All	Beyond the identified services, describe other services that the assets/project will provide in energy and related markets (e.g. wholesale energy market, ancillary services markets, other network support services).	
Expected contract price	All	<p>Proposed fees payable for the provision of services. The fee structure should include the following components:</p> <ul style="list-style-type: none"> • Establishment Fee: one-off setup cost, if applicable. • Availability Fee: monthly payment for the service to be made available to Transgrid. This is intended to cover fixed costs for providing the service. • Variable Fee: intended to cover the variable costs of the service being provided. <p>Please specify whether fees are in real or nominal terms, and any indexation methodology that applies.</p>	

Other supporting information to be provided

Please also provide other relevant information that Transgrid should consider in its assessment. This may include:

- Technical specifications of the service/technology/equipment being offered.
- Details of any material assumptions used to prepare your submission to the EOI, including in relation to the legal terms provided in Attachment A.
- Evidence of the capability and capacity to deliver the proposed non-network option to Transgrid, including:
 - experience in delivering services or related services;
 - expected project delivery timeframes, where relevant; and
 - evidence of technical maturity and economic feasibility (cost-effectiveness) of proposed solution.

EOI submissions

Transgrid invites you to propose solution(s) that can meet or help to manage voltage levels in Beryl.

EOI proposals and the Returnable Schedule (this form) are to be emailed to innovation@transgrid.com.au **no later than 6pm, 20 February 2025.**