

SA Power Networks

Industry Engagement Document



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Document Control

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2.0	30/08/2016	Revised version including:			
		 Removal of material duplicated within the DAPR; 			
		 Reordered and updated section to reflect current practices (2016) 			
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		 Replaced naming references from Demand Side Engagement to Industry Engagement. 			
		 Replaced naming references from non-network options report to options screening report 			
		Updated website reference			

Disclaimer

This document describes policies and procedures used by SA Power Networks to engage with parties who wish to connect generation assets to our network or respond with proposals to resolve constraints on our network.

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1 Introduction

1.1 Purpose

This Industry Engagement Document (IED) encapsulates SA Power Networks' strategy for integrating nonnetwork solutions and SAPS (Stand-Alone Power System) solutions, into the South Australian distribution network. It is an essential part of our pursuit for optimal network operation by engaging the most efficient long-term solutions.

Our aim is to explain to customers and providers how non-network solutions or where applicable SAPS solutions are considered when resolving identified needs and our expectations of them throughout this process. Information for connecting embedded generation to the network is also covered.

The IED forms part of our continued commitment to regulatory compliance by satisfying the requirements under the National Electricity Rules clause 5.13.1 ((e) – (j)).

1.2 Additional Information

A collection of useful links and contact details for providing feedback about the IED are available in Appendix B.

2 Industry Engagement Register

SA Power Networks invites anyone interested in receiving information about developments relating to distribution network planning and expansion, which includes demand management opportunities on the South Australian distribution network to register on the Industry Engagement Register (IER). This can be done via our website (Appendix B).

Registered parties shall receive notifications whenever any document detailed in Table 1 is published by SA Power Networks under NER Chapter 5.

	Document	Frequency (Years)	
1	Distribution Annual Planning Report (DAPR)	1	
2	Industry Engagement Document	3	
		(Minimum)	
3	SAPS Customer Engagement Document	3	
		(Minimum)	
4	RIT-D Publications	As required	

Table 1 – IER Publication Notifications

3 Distribution Network Planning Process

3.1 Industry Opportunities

SA Power Networks follows a thorough and comprehensive annual planning process to identify and respond to changes in forecast demand. The results are published in the following documents and should be the initial point of reference for prospective providers of non-network or SAPS options.

	Course	NER		
	Source	Schedule	Clause	
1	Distribution Annual Planning Report	5.8	5.13.2	
2	Options Screening Report		5.17.4	
		-	(RIT-D procedure)	

Table 2 – Non-Network and SAPS	S Opportunity Sources
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The DAPR is the only source of non-network or SAPS opportunities for Regulatory Investment Test – Distribution (RIT-D) exempt projects. Alternatively, when the RIT-D threshold is exceeded by the most expensive credible network option for an identified need, the RIT-D assessment process as shown in the process diagram (see Appendix C) is followed.

3.2 Stage 1: Investigation

The first stage of the SA Power Networks RIT-D process is to determine if any credible non-network options or SAPS options are able to address the identified need(s) at a cost comparative to the most expensive credible network option. This is conducted with a Screening Test.

An important distinction for the Screening Test evaluation is whether the identified need satisfies the criteria for reliability corrective action. In this scenario, the net economic benefit of the preferred option does not need to be positive. The constraints SA Power Networks consider meet the conditions for reliability corrective action are summarised in Appendix D.

A Screening Test Notice (STN) is published should SA Power Networks determine there to be no feasible nonnetwork solutions or SAPS solutions. This feasibility assessment considers:

- (1) The timeliness of a potential non-network solution or SAPS solution;
- (2) Technical feasibility; and
- (3) Cost competitiveness

3.3 Stage 2: Development

An Options Screening Report (OSR) will be issued by SA Power Networks when the Screening Test identifies one or more feasible non-network options or where applicable SAPS options. The OSR requests open market proposals for non-network solutions or SAPS solutions that will fully or partially address the network constraint(s). The assessment criteria used to evaluate the proposals is also included. Publication is only via SA Power Networks' website (Appendix B).

3.3.1 Submission Information

There are several essential elements that need to be included within any proposal to ensure it can be adequately evaluated. This is so SA Power Networks can ascertain and compare different proposals' technical and financial viability as well as the feasibility of their delivery within the required timeframe.

A best practice guide detailing the minimum expected information to be provided with a proposal is provided in Appendix E. If at any time SA Power Networks requires further information during its assessment, the relevant parties will be contacted in a timely manner and given the opportunity to provide the necessary material. Any prospective submission should also recognise SA Power Networks' licence conditions and the NER ringfencing rules which restrict the type of assets we are permitted to operate within the NEM and therefore adopt as part of any solution. For example, any proposal suggesting the construction of an embedded generating system for adoption and operation by SA Power Networks will be rejected on the basis of technical unviability.

3.3.2 Additional Information Requests

Proponent initiated requests for information beyond that published within the OSR will be considered by SA Power Networks, provided any or all of the following criteria are met:

- (1) The proponent signs a confidentiality or non-disclosure agreement;
- (2) The disclosure of the information does not breach the Privacy or Data Protection Act or any existing confidentiality or non-disclosure agreements;
- (3) SA Power Networks deems the requested information relevant to the proposal; and
- (4) The scale of requested information is reasonably proportional to the potential benefits offered by the proposal.

Any additional information provided on request to one or more proponents may at SA Power Networks' discretion be made publicly available to all potential proponents.

3.4 Stage 3: Assessment

SA Power Networks evaluates proposals in accordance with the NER and the AER's RIT-D Application Guidelines, using the following generic criteria and any specific requirements detailed in the OSR. The assessment process will be conducted in strict conformance with the OSR timeline. SA Power Networks prefer solutions that are able to individually resolve identified constraints however we may also consider combinations of submissions (either in-part or their entirety) that form a solution which fully addresses the identified need(s) whilst optimising the benefits to the NEM and minimises cost.

A viable non-network solution or where applicable SAPS solution should be able to demonstrate:

- (1) Resolution of all identified network constraints or needs;
- (2) Deliverability within the required timeframe;
- (3) Technical viability through the use of proven technology (eg achieves load reduction to sufficiently remove or delay identified need);
- (4) Economic viability (ie combination of costs and resultant net market benefits exceed all alternative solutions);
- (5) Adequate risk management (eg technical, environmental, legal, financial, social); and
- (6) Conformity to/with all implementation requirements (eg planning and development approvals).

If any required planning approval for the preferred solution is granted subject to conditions with substantial cost volatility or is refused entirely, SA Power Networks reserves the right to review its alternatives and regress the RIT-D process to ensure the most appropriate and achievable solution is chosen.

To facilitate the assessment, proponents or their nominated representatives, will need to provide a credible concept design. SA Power Networks expect the concept design (or design of equivalent detail) to be sufficiently refined that all interested parties are satisfied it is capable of succeeding. This may involve multiple party negotiations on a non-exclusive basis for combined solutions.

3.4.1 Concept Design

Proponents should consider the following criteria when developing their concept design. Any assistance SA Power Networks offers to refine a concept design is on a non-binding, best-effort basis and its use is at the risk of the proponent.

3.4.1.1 Technical Feasibility

Proponent(s) will be fully responsible for commissioning all non-electrical studies needed to satisfy SA Power Networks that their proposal is technically viable. This may include but is not limited to:

- (1) Land utilisation;
- (2) Geotechnical evaluations; and
- (3) Any other types of environmental evaluations (eg noise/pollution emission studies).

SA Power Networks will undertake at our expense the initial network studies required to validate the technical feasibility of a proposal to operate on the network.

3.4.1.2 Asset Location and Network Connectivity

Any required connection infrastructure (eg line routes and site positions) will be reviewed and optimised collaboratively between SA Power Networks and the proponent(s). The cost of any connection assets required to be provided by SA Power Networks will be added to the costs provided by the proponent as part of the RIT-D Assessment.

3.4.1.3 Risk Responsibility

Proponent(s) of any non-network option or SAPS options are expected to be responsible for all risks within their control. This includes, but is not limited to (where relevant):

- (1) Construction and maintenance of their assets. This encompasses all assets from the point of connection to the generation plant;
- (2) Acquiring and maintaining AEMO registration (as required);
- (3) Compliance with the terms and conditions imposed by any development approval or environmental licence(s);
- (4) Network Connection Agreement (NCA) compliance;
- (5) Network System Support Agreement (NSSA) compliance. Availability and provision of the contracted network support when required and as specified by SA Power Networks;
- (6) Indemnifying SA Power Networks against any financial loss caused through negligence or failure to operate in accordance with the terms and conditions of the NSSA and/or NCA. This includes any claims against SA Power Networks by customers connected to the relevant affected portion of the distribution network.

Proponent(s) may need to undertake additional verification at their own expense to confirm the viability of one or more elements of their proposal.

3.5 Stage 4: Reporting

SA Power Networks will publish the results of the RIT-D evaluation in either a Draft Project Assessment Report (DPAR) and/or Final Project Assessment Report (FPAR) (as required by the RIT-D process). These documents will be released on SA Power Networks' website (Appendix B) and parties registered on the IER will also receive notification at the time of publication.

These documents may be disputed by aggrieved parties with any decision regarding the DPAR or FPAR not becoming final until the end of the dispute period or until all disputes (if any) are resolved. SA Power Networks does not accept any price escalation or change in terms from those in the Stage 3: Assessment.

4 Network System Support Payments

SA Power Networks offers Network System Support Payments to proponents who submit successful nonnetwork alternatives including SAPS as a service to traditional network augmentation. To qualify for these payments a proponent needs to meet the following conditions in addition to all other applicable assessment criteria.

- (1) The third party must enter a NSSA that details the payments for the provision of network support and the liabilities of both the proponent and SA Power Networks;
- (2) The proposal must gain any and all necessary third-party approvals. This may include but not be limited to, generation licences, environmental licences, Australian Energy Market Operator (AEMO) and State Commission Assessment Panel (SCAP);
- (3) The proposal must not include any form of offset arrangement these will not be accepted by SA Power Networks. Any revenue variability from the market value of energy generated or load curtailed must be accepted solely by the proponent; and
- (4) The third party will enter a NCA with SA Power Networks (where necessary).

Network System Support Payments made by SA Power Networks may be comprised of a fixed and a variable component. The principles of this payment structure are summarised in Table 3.

Name	Component	Structure	Principle
Availability Fee	Fixed	\$/Month	Paid for the relevant system support to be
			available and on-call.
Operational Fee	Variable	\$/MWh	In response to a specific SA Power Networks' request for operation and level of response.
			generated or curtailed.

Table 3 – NSSP Structure

5 Embedded Generation

Information for those interested in connecting embedded generation services to SA Power Networks' distribution network such as the application process, the required application form and relevant technical standards are available on SA Power Networks website (refer Appendix B).

Appendices

Appendix A: Glossary

Term	Definition
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
AMD	Agreed Maximum Demand
DAPR	Distribution Annual Planning Report A SA Power Networks' published report describing our network, forecasted future loads and any emerging constraints.
DPAR	Draft Project Assessment Report A report prepared and published in accordance with NER clause 5.17.4 (i) to (n).
DNSP	Distribution Network Service Provider An entity who engages in the activity of owning, controlling or operating an electricity distribution system. SA Power Networks is the sole DNSP for South Australia.
DNSP-led SAPS project	A project undertaken by a Distribution Network Service Provider to address an identified need and that involves the planning, development, construction and commissioning of a stand-alone power system
EDC	<i>Electricity Distribution Code</i> Refer to the Essential Services Commission of South Australia (ESCOSA) website.
FPAR	Final Project Assessment Report
нv	High Voltage For this document, any voltage greater than 1kV.
Identified need	An objective a Network Service Provider seeks to achieve through network investment.
LV	Low Voltage For this document, a voltage less than or equal to 1kV.
N-1	Referring to system reliability, all network equipment is in service (N) except for one single piece of equipment (-1).
NCA	Network Connection Agreement A formal agreement between SA Power Networks and a party connecting to the distribution network that describes both parties' obligations and rights.
NEM	National Electricity Market
NER	National Electricity Rules
NSSA	Network System Support Agreement A contract between SA Power Networks and a proponent (non-network solution provider) that describes the network support services provided and all applicable terms and conditions between the parties with respect to those services.
OSR	Options Screening Report A report requesting proposals for network services or support from third parties in response to an identified need. Published in accordance with NER clause 5.17.4 (e) to (h).
OTR	Office of the Technical Regulator The South Australian body responsible for monitoring compliance with the Electricity Act including technical and safety standards.
SAPS	Stand-Alone Power System A system that generates and distributes electricity and does not form part of the interconnected national electricity systems
SCAP	State Commission Assessment Panel
STN	Screening Test Notice The notice published that explains why a Options Screening Report is not required and will not be published as required under NER clause 5.17.4 (d).
System Limitation/ Constrain	A DNSP identified forecast limit on the ability to supply electricity under NER clause 5.13.1 (d) (2).
TNSP	Transmission Network Service Provider An entity who engages in the activity of owning, controlling or operating an electricity transmission system. ElectraNet is the sole TNSP for South Australia.
TUoS	Transmission Use of System A charge levied by the TNSP for use of the South Australian Transmission System.

Appendix B: Additional Information

Description	Link
SA Power Networks website	www.sapowernetworks.com.au
Industry Engagement Register	www.sapowernetworks.com.au/industry/annual-network-plans/industry- engagement-register/
Distribution Annual Planning Report	www.sapowernetworks.com.au/industry/annual-network-plans/
Embedded Generation	www.sapowernetworks.com.au/connections/connect-solar-and-ev- chargers/
RIT-D Publications	www.sapowernetworks.com.au/industry/annual-network-plans/
Questions or Feedback (Industry Engagement Document)	requestforproposals@sapowernetworks.com.au OR SA Power Networks Attention: Head of Network Planning GPO Box 77, Adelaide, SA, 5001

Appendix C: RIT-D Process



Cost Threshold	Capital Cost to NSP (\$M)		
RIT-D Required	6		
	(Most expensive credible option)		
Project Assessment	12		

Appendix D: Network Constraint Classification

	Reliability Corrective Action	Other		
Net Economic	N/A	Positive		
Benefit				
Requirement:				
Requirement: Constraint Types:	 Voltages outside statutory or contractual bounds under 'N' or 'N-1' conditions. Line or Equipment overloads under credible 'N' or 'N-1' conditions. Inability to achieve fault clearing times required for system stability. Fault levels exceeding equipment ratings, standards or customer agreements. Power quality standard conformance (eg harmonic distortion, flicker or phase imbalance). Unacceptable public safety risks (eg overhead line statutory clearances). Inability to meet EDC reliability standards. Transmission connection point power factors. Network connection requests. Asset replacements. Inability to achieve SAPS Performance and supply standards. 	 Radial or single TF substations with no capacity constraint (eg supply security). 		
	criteria to avoid violation of their licence conditions through planned involuntary load			

Appendix E: Proposal Guide

To assist non-network solution proponents or SAPS resource providers with submitting a viable proposal, the following information must be included as a minimum within a proposal in order for SA Power Networks to evaluate its ability to resolve the identified need(s). Proponents are also advised to refer to any additional specific requirements published in the OSR.

- (1) Name, address and contact details of the proponent making the submission;
- (2) Details about the proponent including evidence that demonstrates their ability to undertake and deliver the proposed solution;
- (3) A detailed description of the non-network solution or SAPS solution including (where relevant):
 - (a) type of technology/solution proposed;
 - (b) level of load reduction (MW/MVA);
 - (c) duration of load reduction achievable (hours);
 - (d) location (see Note 1);
 - (e) dispatching arrangement (eg pre-contingent, post contingent etc);
 - (f) notice periods required to invoke the non-network support;
 - (g) availability and reliability performance details;
 - (h) technical details of the technology/solution proposed including (where relevant) sub-transient reactances of the plant or fault level contributions in the case of embedded generation proposals;
 - (i) a description of how the proposal will either fully or partially resolve an identified need or defer a system augmentation.

NOTE 1: We do not expect the proponent at this stage to have a confirmed site or to have carried out detailed engineering, environmental or town planning studies other than those activities required to demonstrate that the proposal is technically viable.

- (4) The costs to be incurred by SA Power Networks under the proposal. These costs should include:
 - (a) Those charges payable by SA Power Networks to the non-network proponent or SAPS resource provider (see Note 1 and 2);
 - (b) An indication of the connection services that the proponent would require (eg a new 33kV connection at a zone substation) (see Note 2);
 - (c) Milestone dates/lead-times that need to be met for the proposal to be delivered by the period specified in the OSR;
 - (d) The longevity of the proposal (ie 5 years, 10 years etc); and
 - (e) A statement indicating the proponent's willingness to enter into a NSSA and any other agreement required to enable the solution to be implemented (eg NCA).

NOTE 1: The proponent's cost proposal should be all inclusive, including consideration of the proponent's operating and maintenance costs and all other costs expected to be incurred in providing the service within its cost offering.

NOTE 2: The preferred structure of payments by SA Power Networks to the proponent for the provision of network system support services is per Section 4, Network System Support Payments.

NOTE 3: SA Power Networks will determine the costs of providing any required connection assets and add these to the proponent's proposal.

Proponents of non-network solutions or SAPS solutions should also consider the other following items when submitting their proposal:

(5) Reliability:

Non-network solutions or SAPS solutions must be capable of reliably delivering electricity under a range of conditions and must meet all relevant EDC and NER requirements related to quality of supply. Generation proposals should consider any operating and maintenance costs, connection costs required under the NER such as AEMO registration or ESCOSA licensing. In particular, a non-network solution must provide some level of redundancy or over-subscription (eg if involving aggregated load curtailment) to ensure the level of network support required can be provided in order to be considered a credible alternative to a network solution. SAPS solutions must be capable of complying with the SAPS performance and supply standard as published in SA Power Networks' website.

(6) Certainty:

Submitted proposals must use proven technology and have funding and project management to be delivered within the required timeframe. Corrective action is critical to the reliability of the electricity supply system; it is not considered appropriate to rely on high-risk developments that may not proceed.

(7) Longevity:

Non-network solutions must be capable of resolving the forecast system limitation or deferring network expenditure for a period of *at least* three years. SA Power Networks considers that the overhead involved in undertaking a third-party solution makes a period shorter than this uneconomic. The longevity of SAPS solutions will be assessed depending on the identified need to be addressed.

(8) Market Prices:

Proponents of embedded generation proposals should note that NER clause 5.3A.12 (b) (1) prohibits a generator that is providing network support from setting the market price.

Appendix F: RIT-D Assessment Example

All credible submissions received in response to a OSR will be evaluated and ranked against all proposed network solutions using the relevant assessment criteria (refer 3.4).

In this example, combining the two non-network options resulted in the preferred option. Non-Network Option 2 could not individually achieve the required load reduction however was able to sufficiently reduce the load at risk such that the cost of operating the embedded generation proposed under Non-Network Option 1 was cheaper than this option alone.

Option	Description	Network Constraint(s) Fully Addressed	Technical Viability	Timeframe	Risk Management	Other Implementation Requirements	Ranking (Net Market Benefit)
Network 1	Sub-Transmission Line & Zone Substation Upgrade	~	~	~	~	~	4
Network 2	New Zone Substation	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark	2
Non- Network 1	Embedded Generation	\checkmark	~	\checkmark	\checkmark	\checkmark	3
Non- Network 2	Load Curtailment	×	\checkmark	\checkmark	\checkmark	\checkmark	N/A
Non- Network 1 & 2 Combined	Embedded Generation & Load Curtailment	\checkmark	~	✓	\checkmark	\checkmark	1

Appendix G: Avoided Customer Transmission Use of System (TUoS) Payments

Embedded generators can be eligible for remittance from SA Power Networks when they reduce the locational TUoS levies imposed by the TNSP (NER Schedules 5.3A, 5.3AA and 5.3B).

Within South Australia, the locational TUoS payments between the TNSP and DNSP for connection points are derived from the Agreed Maximum Demand (AMD) rather than the actual measured peak demand. SA Power Networks will therefore consider compensation for avoided TUoS payments to an embedded generator that:

- (1) Prevents the given connection point AMD from being exceeded; or
- (2) Guarantees to operate at the time of peak demand thus enabling SA Power Networks to reduce the contracted connection point AMD.

This is in addition to the following requirements:

- (1) The generator must be a registered participant. Non-registered generators are ineligible.
- (2) Where applicable, the generator must accept liability for any excess demand charges incurred by SA Power Networks should it fail to generate at peak times.
- (3) SA Power Networks will include consideration of avoided TUoS within any embedded generator system support contract as per NER Section 5.3A.12. Any fees from a generator or third party as part of an NSSA shall therefore be deemed to include avoided TUoS and be ineligible for any additional avoided TUoS payment.

Appendix H: NER Compliance

NER Clause	Schedule 5.9 industry engagement document clause 5.13.1(h) Requirements	Document Section
(a)	A description of how the Distribution Network Service Provider will investigate, develop, assess and report on potential non-network options and (in relation to a SAPS enabled network) potential SAPS options;	3
(b)	A description of the Distribution Network Service Provider's process to engage and consult with potential non-network providers to determine their level of interest and ability to participate in the development process for potential non-network options or where applicable, potential SAPS options;	3.3
(c)	An outline of the process followed by the Distribution Network Service Provider when negotiating with non-network providers to further develop a potential non-network option or SAPS option;	
(d)	An outline of the information a non-network provider is to include in a non-network or DNSP-led SAPS project proposal, including, where possible, an example of a best practice proposal;	3.3.1 & Appendix E
(e)	An outline of the criteria that will be applied by the Distribution Network Service Provider in evaluating non-network or DNSP-led SAPS project proposals;	3.4
(f)	An outline of the principles that the Distribution Network Service Provider considers in developing the payment levels for non-network options or (where applicable) SAPS options;	4
(g)	A reference to any applicable incentive payment schemes for the implementation of non-network options or SAPS options and whether any specific criteria is applied by the Distribution Network Service Provider in its application and assessment of the scheme;	
(h)	The methodology to be used for determining avoided Customer TUOS charges, in accordance with clauses 5.4AA and 5.5;	Appendix G
(i)	A summary of the factors the Distribution Network Service Provider takes into account when negotiating connection agreements with Embedded Generators;	5
(j)	The process used, and a summary of any specific regulatory requirements, for setting charges and the terms and conditions of connection agreements for embedded generating units;	
(k)	The process for lodging an application to connect for an embedded generating unit and the factors taken into account by the Distribution Network Service Provider when assessing such applications;	
(I)	Worked examples to support the description of how the Distribution Network Service Provider will assess potential non-network options or SAPS options in accordance with paragraph (a);	Appendix F
(m)	A hyperlink to any relevant, publicly available information produced by the Distribution Network Service Provider;	Appendix B
(n)	A description of how parties may be listed on the industry engagement register; and	2
(o)	The Distribution Network Service Provider's contact details.	Appendix B