

RIN06

NIS420 Demand management standard

Network Standard

NETWORK

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NIS420 DEMAND MANAGEMENT



ISSUE

For issue to all Ausgrid staff involved with demand management considerations and is for reference by field, technical and engineering staff.

Where this standard is issued as a controlled document replacing an earlier edition, remove and destroy the superseded document.

DISCLAIMER

As Ausgrid's standards are subject to ongoing review, the information contained in this document may be amended by Ausgrid at any time.

It is possible that conflict may exist between standard documents. In this event, the most recent standard shall prevail.

This document has been developed using information available from internal network performance data, national and state regulators, and industry best practice and is suitable for most situations encountered in Ausgrid. Particular conditions, projects or localities may require special or different practices.

Ausgrid disclaims any and all liability to any person or persons for any procedure, process or any other thing done or not done, as a result of this Standard.

INTERPRETATION

In the event that any user of this Standard considers that any of its provisions is uncertain, ambiguous or otherwise in need of interpretation, the user should request Ausgrid to clarify the provision. Ausgrid's interpretation shall then apply as though it was included in the Standard, and is final and binding. No correspondence will be entered into with any person disputing the meaning of the provision published in the Standard or the accuracy of Ausgrid's interpretation.

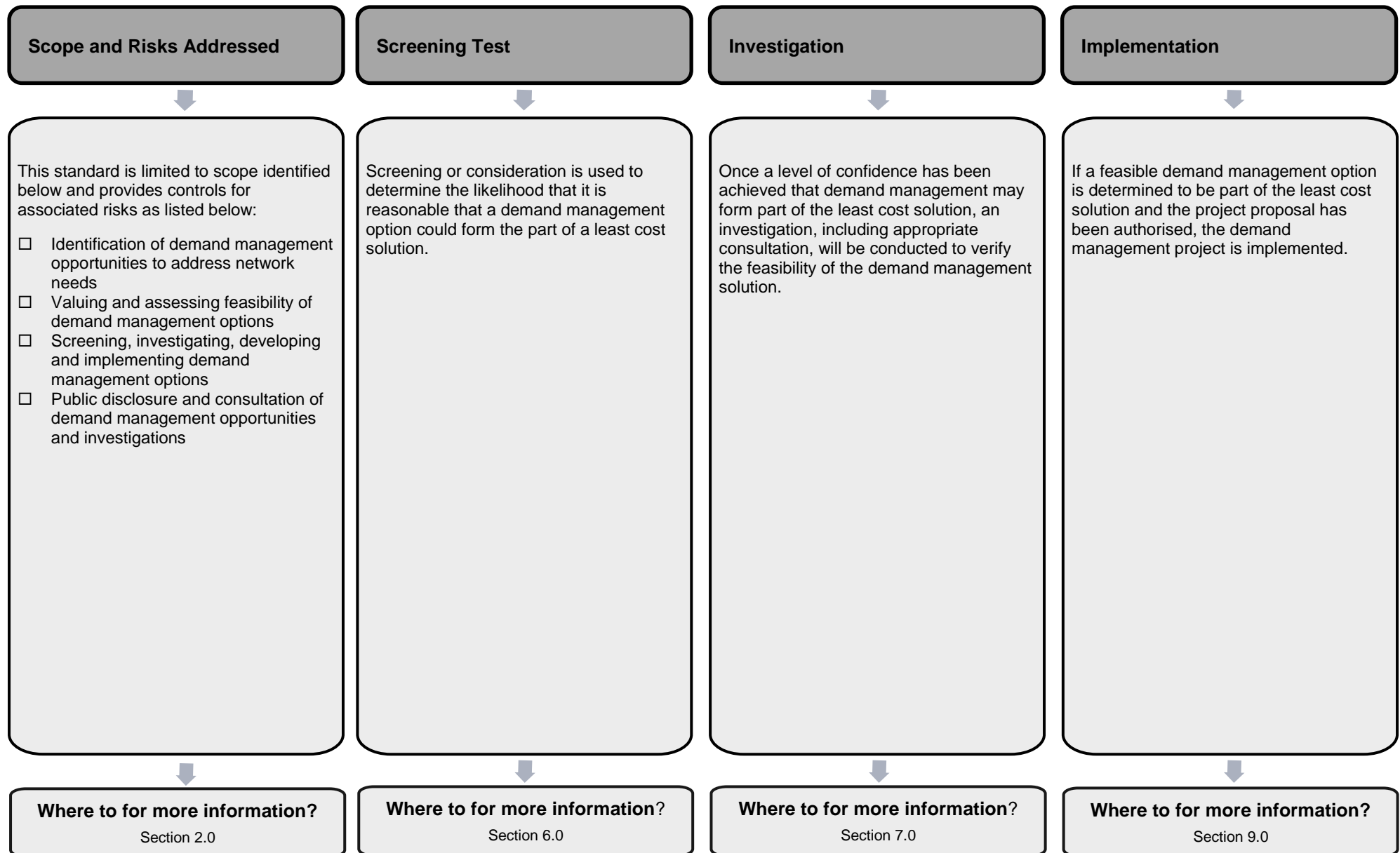
KEYPOINTS

This standard has a summary of content labelled "KEYPOINTS FOR THIS STANDARD". The inclusion or omission of items in this summary does not signify any specific importance or criticality to the items described. It is meant to simply provide the reader with a quick assessment of some of the major issues addressed by the standard. To fully appreciate the content and the requirements of the standard it must be read in its entirety.

AMENDMENTS TO THIS STANDARD

Where there are changes to this standard from the previously approved version, any previous shading is removed and the newly affected paragraphs are shaded with a grey background. Where the document changes exceed 25% of the document content, any grey background in the document is to be removed and the following words should be shown below the title block on the right hand side of the page in bold and italic, for example, Supersedes – document details (for example, "Supersedes Document Type (Category) Document No. Amendment No.").

KEY POINTS OF THIS STANDARD



Network Standard NIS420 Demand Management

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1.0 PURPOSE

The guiding principles for the development of our demand management standard are:

- Compliance with our demand management obligations under the Electricity Supply Act 1995 and the National Electricity Rules;
- To provide equitable treatment in comparing both demand management and supply side options in our network planning processes.
- To maximise net economic benefit;
- That processes are transparent, consistent and repeatable; and
- To appropriately consult with parties interested in demand management and the general public.

2.0 SCOPE

This standard outlines the company's consideration of demand management (DM) options when planning investments. Specifically, this document covers:

- Identification of demand management opportunities to address network needs;
- Valuing and assessing feasibility of demand management options;
- Screening, investigating, developing and implementing demand management options;
- Use of DM for risk management in advance of the investment trigger date; and
- Public disclosure and consultation of demand management opportunities and investigations.

This standard does not cover broad-based DM programs (i.e. programs that do not target specific supply side investments, such as hot water load control) or DM innovation trials.

3.0 REFERENCES

3.1 General

All work covered in this document shall conform to all relevant Legislation, Standards, Codes of Practice and Network Standards. Current Network Standards are available on the company's internet site at www.ausgrid.com.au.

3.2 Ausgrid documents

- Company Form (Governance) - Network Technical Document Endorsement and Approval
- Company Procedure (Governance) - Network Technical Document Endorsement and Approval
- Company Procedure (Network) – Network Standards Compliance
- Company Procedure (Network) - Production / Review of Engineering Technical Documents within BMS
- Customer Installation Safety Plan
- Electrical Safety Rules
- Electricity Network Safety Management System Manual
- NS261 Requirement for Design Compliance Framework for Network Standards
- Public Electrical Safety Awareness Plan
- Public Lighting Management Plan
- Tree Safety Management Plan

3.3 Other standards and documents

- ENA Doc 001-2008 National Electricity Network Safety Code

3.4 Acts and regulations

- Electricity Supply (General) Regulation 2014 (NSW)
- Electricity Supply (Safety and Network Management) Regulation 2014
- Work Health and Safety Act 2011 and Regulation 2011

4.0 DEFINITIONS

Accredited Service Provider (ASP)	An individual or entity accredited by the NSW Government Trade & Investment in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014 (NSW).
Business Management System (BMS)	The company's internal integrated policy and procedure framework that contains the approved version of documents.
Demand management	Any initiative that reduces demand on the critical asset, or critical section of the network, by any means other than network investment. Demand Management activities include reducing customer demand (temporarily or permanently), incorporating a separate energy source downstream of the network constraint or by providing customer or network energy storage or power factor correction. When conducting an analysis, investigation or screening for a network need subject to the Regulatory Investment Test for Distribution, a demand management option is known as a 'non-network option'.
Demand side engagement register	Also known as the Register of Interested Parties, it may be found on the company's website. A facility where any interested party is able to register their details to receive information regarding the companies demand management activities and non-network option investigations.
Demand side engagement document	A public document produced and published by the company which details the process and requirements for stakeholder engagement. The demand side engagement document is a requirement of the Regulatory Investment Test for Distribution.
Document control	The company's employees who work with printed copies of document must check the BMS regularly to monitor version control. Documents are considered "UNCONTROLLED IF PRINTED", as indicated in the footer.
Network Standard	A document, including Network Planning Standards, that describes the Company's minimum requirements for planning, design, construction, maintenance, technical specification, environmental, property and metering activities on the distribution and transmission network. These documents are stored in the Network Category of the BMS repository.
Regulatory Investment Test for Distribution (RIT-D)	The regulatory investment test for distribution is a cost benefit test that electricity distribution network businesses must apply when assessing the economic efficiency of different investment options. The RIT-D must be applied in accordance with clause 5.17 of the National Electricity Rules.
Review date	The review date displayed in the header of the document is the future date for review of a document. The default period is three years from the date of approval however a review may be mandated at any time where a need is identified. Potential needs for a review include changes in legislation, organisational changes, restructures, occurrence of an incident or changes in technology or work practice and/or identification of efficiency improvements.

5.0 DEMAND MANAGEMENT STANDARD

5.1 General

Demand management (DM) options are considered as part of the sub-transmission and distribution planning processes and prior to approving augmentation, expansion, or replacement of network assets.

There are two possible pathways by which DM is considered in the network planning process:

1. **During individual project development.**

This is the method for consideration of DM in the distribution planning process. It may also apply for some individual sub-transmission projects that arise outside of the normal Area Planning cycle.

2. **As part of the integrated consideration of options in Sub-transmission Area Plan Reviews.**

For all Sub-transmission Area Plan Reviews, DM options are considered as part of the integrated development of strategies to address the network needs.

5.2 Demand management consideration thresholds

Demand management options are considered as part of the sub-transmission and distribution planning processes, and prior to approving augmentation or condition driven projects.

For projects where the estimated net present capital cost of the least expensive credible option is greater than five million dollars, the Regulatory Investment Test for Distributors (RIT-D) process as detailed in NER Chapter 5 Part B is followed to assess demand management solutions.

For remaining lower cost projects, demand management solutions are assessed where considered to be potentially cost effective. Where demand management options are considered, a simplified assessment approach may be used.

6.0 DM SCREENING TEST

The screening test consists of an analysis of the drivers behind the emerging network need, determination of the extent to which demand is driving investment and the demand management requirement. This requirement is described as the approximate size, cost and nature (for example time of day, seasonality) of the demand management options that would be required to manage the load at risk in advance of the need date or to defer the proposed investment for one or more years.

The screening test is the basis by which the company determines whether DM is potentially viable. Demand management options would normally be considered economic if the net present value of the option including DM is equal to or greater than the net present value of the preferred network option. However, in determining if demand management is feasible, other factors may be considered, such as approximate size (MVA/MWh) relative to the existing load, time of day and season, and duration and frequency required.

Where screening identifies that a DM option may be viable the finding of the screening test is recorded. The record provides a summary including:

- demand reduction requirement (in MVA and/or MWh);
- number of years of deferral and load at risk management considered;
- DM budget available; and
- results of the DM assessment.

The method for recording the outcome of the screening test depends on the pathway by which DM was considered. These are summarised in the following table:

Table 1 – DM documentation pathways

Situation	Method for recording screening test outcome
Individual project	In a separate project specific document
Area Plan Reviews with integrated consideration of DM Options	Within the Area Plan where the cost of the DM project is estimated and included in the Area Plan project list (with relevant supply-side investments deferred or removed from the project list as appropriate).
RIT-D Consideration	Where the screening test finds a deferral to be viable, a non-network options report is published as per Section 7. Where demand management is not found to be feasible, a notice is published as per the requirements in 5.17 of the National Electricity Rules. Publication is on the company's website.

7.0 INVESTIGATION

Where the screening test identifies that a DM option is likely to be viable a detailed investigation of DM options is completed. The investigation determines the possible demand management options that might exist in the study area and likely cost to the company of each of the identified options. Demand management investigations are based on previous experience, existing knowledge, field visits, discussions with specific customers, DM providers and stakeholders, and community consultation.

To allow time for the investigation and development of DM options, the investigation is initiated sufficiently prior to the forecast investment decision date to allow for a proper assessment.

Community consultation is via a publicly advertised Non-Network Options report. This report seeks to uncover demand management solutions that are not known to the company. The content of the Non-Network Options report includes:

- Description of the network need and credible options;
- Amount of demand reduction (kVA/MWh) required;
- Time of day, season and year(s) required;
- DM budget available;
- Timeframe for implementation; and
- Information on how to submit a proposal.

The Non-Network Options report:

- conforms to the requirements of the template;
- is approved by the Manager – Demand Management & Forecasting before release;
- is issued so that information is received in time to develop options and inform the investment decision;
- allows sufficient time for submissions;
- is advertised using appropriate media channels to communicate to relevant DM providers, stakeholders, customers and their representatives, and the broader community;
- is notified directly to all contacts on the Demand Management Engagement Register via e-mail; and
- is published on the company's website.

Where the project is subject to the Regulatory Investment Test for Distribution, the Non-Network Options report will, at a minimum, comply with the requirements in 5.17 of the National Electricity Rules. These requirements include the provision for an allowance of 3 months in which to make submissions.

At the close of accepting information, all respondents are contacted to acknowledge receipt of their submissions.

Note that, until the investigation is concluded, submissions from the public are considered even if received outside the advertised consultation period.

8.0 ASSESSMENT

As stated in Network Standard - NIS419 Area Planning, for each set of options developed to address a network need, a consideration of a demand management alternative is included.

Similarly as stated in NIS436 Distribution Planning a demand management option is considered for all projects initiated by Distribution Planning with an estimated cost greater than \$800,000.

An economic assessment of all project options (including feasible DM options) is done in accordance with the Economic Appraisal network standard NIS424. The assessment also considers the technical feasibility and reliability of the non-network options. Where a network

solution and a DM solution are assessed as having an equivalent economic value, the DM solution is preferred.

Generally deferral of network expansion options is for one year increments; however, in some cases it may be cost effective to defer for a single season (i.e. six months) where there are network constraints in both summer and winter seasons. Deferrals can be for multiple years where DM options are cost effective and the demand reduction requirements are achievable. The use of a DM solution to manage the risk of unserved energy in advance of the network need date is also considered for one or more years.

The outcomes of the investigation and assessment are documented in a Demand Management Investigation Report. This report comprises:

- A description of the network need and supply side options;
- A summary of the public consultation process;
- The results of the evaluation of all non-network options considered; and
- Recommendations on the feasibility of options considered.

Where the project is subject to the Regulatory Investment Test for Distribution, a Draft Project Assessment Report and/or a Final Project Assessment Report are prepared and published in accordance with the requirements in 5.17 of the National Electricity Rules.

The Draft Project Assessment Report and/or Final Project Assessment Report or Demand Management Investigations report are published on the company's website. Parties who made submissions in the consultation and those registered on the Demand Side Engagement Register are notified of the publication of the report.

9.0 IMPLEMENTATION

If a feasible demand management option is determined to be part of the least cost solution, it is developed into a demand management project proposal. This consists of a business case and implementation plan with clear deliverables including:

- demand reduction in MVA/MWh, time of day and seasonality;
- detailed project costs within +/-10%;
- planning consents obtained;
- agreements with counterparties; and
- an assessment of risks.

Once the project proposal is authorised, in accordance with the relevant financial commitment delegations, a demand management project is implemented.

The demand management implementation strategy may include a range of implementation options, including Requests for Proposals, standard offers, marketing programs and direct customer negotiations depending on the demand management options being implemented.

The changes to the supply side strategy enabled by the authorised demand management program are incorporated into the relevant project development and approvals. This may include deferral or avoidance of supply side projects, or changes to the project scope.

10.0 RECORDKEEPING

The table below identifies the types of records relating to the process, their storage location and retention period.

Table 2 – Recordkeeping

Type of Record	Storage Location	Retention Period*
Approved copy of the network standard	BMS Network sub process Standard – Company	Unlimited
Draft Copies of the network standard during amendment/creation	HRPM Work Folder for Network Standards (Trim ref. 2014/21250/180)	Unlimited
Working documents (emails, memos, impact assessment reports, etc.)	HRPM Work Folder for Network Standards (Trim ref. 2014/21250/180)	Unlimited

* The following retention periods are subject to change (e.g. if the records are required for legal matters or legislative changes). Before disposal, retention periods should be checked and authorised by the Records Manager.

11.0 AUTHORITIES AND RESPONSIBILITIES

General Manager, Asset Management and Operations has accountability for approving the initial issue and substantial revisions to this standard.

Manager, Asset Investment has accountability for approving minor revisions to this standard and endorsing the initial issue and major revisions of this standard.

Managers have accountability for ensuring that employees under their control comply with this standard.

Content Coordinator has accountability for:

- identifying relevant stakeholders for this standard;
- providing access to this standard to these stakeholders;
- in collaboration with these stakeholders, maintaining the accuracy of the content in this standard;
- coordinating the regular review of this standard in accordance with 'Company Procedure – Production and Review of Network Standards';
- reviewing related procedures to ensure they are in keeping with the requirements of this standard.

12.0 DOCUMENT CONTROL

Content Coordinator : Demand Management & Forecasting Manager

Distribution Coordinator : Engineering Information and Services Manager