

ANNEX XV

NETWORK-DRIVEN DSM

1. DESCRIPTION OF TECHNICAL SECTOR: DEFINITIONS

(a) Description of Technical Sector

The focus of Task XV: Network-Driven DSM is on identifying and developing the most appropriate and cost-effective DSM measures to relieve electricity network constraints and/or provide network operational services. The term ‘constraint’ is intended to include all types of network problems including capacity limitations, voltage fluctuations, reliability issues, etc.

Task XV will identify the most appropriate and cost-effective DSM measures to relieve electricity network constraints. All types of constraint will be addressed, including capacity limitations, voltage fluctuations, reliability issues, etc. The Task will identify and develop a wide range of DSM measures which can be used to relieve network constraints, whether these constraints are time-related (eg occurring at times of the network system peak) or location-related (eg associated with particular lines or substations) or both. Such network-driven DSM measures are often more cost-effective, and may also have lower environmental impacts, than network augmentation (ie building ‘poles and wires’).

In addition to relieving network constraints, DSM can also provide services for electricity network system operators, achieving peak load reductions with various response times for network operational support. Task XV will also cover DSM activities which provide network operational services.

Network-driven DSM measures include:

- distributed generation, including standby generation and cogeneration;
- energy efficiency;
- fuel substitution;
- load management, including interruptible loads, direct load control, and demand response;
- power factor correction;
- pricing initiatives, including time of use and demand-based tariffs.

(b) Definitions

Task Experts

Each Participant in Task XV (ie country) nominates one or more persons as its Task Expert. Task Experts contribute their knowledge to the progress of the Task and are responsible for carrying out any research work within their country which is required for the Task. A Participant may nominate more than one Task Expert, each with different knowledge and/or skills relevant to Task XV.

Experts Meetings

All the Task Experts meet regularly at Experts Meetings to review and assess the progress of the work completed by the Operating Agent and by the group of Task Experts.

2. OBJECTIVES

The objectives for the Network-Driven DSM Task are:

- to identify a wide range of DSM measures which can be used to relieve electricity network constraints and/or provide network operational services;

- to further develop the identified network-driven DSM measures so that they will be successful in cost effectively achieving network-related objectives;
- to investigate how existing network planning processes can be modified to incorporate the development and operation of DSM measures over the medium and long term;
- to develop 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources;
- to communicate and disseminate information about network-driven DSM to relevant audiences.

3. MEANS

The Workplan for the Network-Driven DSM Task comprises five Subtasks.

- Subtask 1: Worldwide Survey of Network-Driven DSM Projects.
- Subtask 2: Assessment and Development of Network-Driven DSM Measures.
- Subtask 3: Incorporation of DSM Measures into Network Planning.
- Subtask 4: Evaluation and Acquisition of Network-Driven DSM Resources.
- Subtask 5: Communication of Information About Network-Driven DSM.

3.1 Subtask 1: Worldwide Survey of Network-Driven DSM Projects

Subtask Objective

To identify a wide range of DSM measures which can be used to relieve electricity network constraints and/or provide network operational services.

Subtask Deliverable

A report listing and summarising network-driven DSM projects implemented around the world.

Activity 1-1: Network-Driven DSM Projects in Participating Countries

The Task Experts will carry out a survey of the network-driven DSM projects implemented in their respective countries, using an information collection instrument developed by the Operating Agent. The information collected about each project will include: details about: the objectives of the project; the network-driven DSM measures employed; the market segments addressed; the regulatory regime under which the project was implemented; the level of success of the project; the cost of the project; and the impact of the project in terms of MW or MVA reduced. As the results of the survey are received, the Operating Agent will include them in a database of information about network-driven DSM measures (see Activity 5-2).

Activity 1-2: Network-Driven DSM Projects in Other Countries

The Operating Agent will carry out a similar survey of network-driven DSM projects implemented in other countries. Information sources for this survey will include Information the INDEEP database developed by the IEA DSM Programme, internet searches and personal contacts.

Activity 1-3: Identification of Network-Driven DSM Measures

The Operating Agent will review the information contained in the database of network-driven DSM projects to identify the DSM measures which have been employed in the projects. The list of identified measures will be circulated to the Task Experts for their comments and feedback before it is finalised.

3.2 Subtask 2: Assessment and Development of Network-Driven DSM Measures

Subtask Objective

To further develop the identified network-driven DSM measures so that they will be successful in cost effectively achieving network-related objectives.

Subtask Deliverable

A report listing and summarising successful network-driven DSM measures and the specific network problems they address.

Activity 2-1: Value Proposition for Network-Driven DSM

This activity will draw on the work undertaken in IEA DSM Programme Task XIII: Demand Response Resources. Task XIII is examining the multiple value propositions for demand response in the electricity market, including relief of transmission and distribution constraints. The Operating Agent for the Network-Driven DSM Task will work with the Task Experts to build on the Task XIII work to clearly identify the value proposition for network-driven DSM measures, including the specific network problems which these measures can successfully address.

Activity 2-2: Effectiveness of Network-Driven DSM Measures

The Operating Agent will analyse the information contained in the database of network-driven DSM projects to determine the factors which result in a network-driven DSM measure being successful in cost-effectively achieving the network-related objectives identified in Activity 2-1. Examples of factors which may contribute to a measure being successful include: the regulatory regime in which the measure is implemented; characteristics of the project proponent, such as their ability to access the end-users targeted by the measure; and the existence or lack of government policies which support the measure being implemented. The list of factors developed by the Operating Agent will be circulated to the Task Experts for review.

Activity 2-3: Further Development of Network-Driven DSM Measures

The Operating Agent will work with the Task Experts to further develop the network-driven DSM measures to improve their effectiveness in achieving network-related objectives. The result of this development process will be a concise description of each measure, a list of the network problems it can address, and details about how the measure should be implemented for it to be most effective. The Task Experts will be encouraged to circulate drafts of these descriptions to relevant people in their respective countries seeking comments about the practicality of the measures. This will serve as a 'reality check' in relation to each of the measures.

3.3 Subtask 3: Incorporation of DSM Measures into Network Planning

Subtask Objective

To investigate how existing network planning processes can be modified to incorporate the development and operation of DSM measures over the medium and long term.

Subtask Deliverable

A report on ways in which network planning processes can be modified to incorporate DSM measures as alternatives to network augmentation.

Activity 3-1: Interaction between Network-Driven DSM, Electricity Markets and Regulatory Regimes

This activity will draw on work undertaken in IEA DSM Programme Task XIII: Demand Response Resources. Task XIII is defining the market structures and alternative scenarios for demand response participation in each participating country. The Operating Agent for the Network-Driven DSM Task will work with the Task Experts to build on the Task XIII work to describe in detail how network-driven DSM measures interact with the electricity market structures and regulatory regimes existing in each participating country. Particular consideration will be given to the impact of different types of regulatory regimes on the economic and financial viability of network-driven DSM measures. This information will be used to identify the most effective ways to implement network-driven DSM measures in electricity markets structured in different ways and under different types of regulatory regimes.

Activity 3-2: Identification of Network Planning Processes

The Task Experts will carry out a survey of the network planning processes implemented in their respective countries, using an information collection instrument developed by the Operating Agent. As the results of the survey are received, the Operating Agent will include them in a database of information about network planning processes (see Activity 5-2).

Activity 3-3: Options for Modifying Network Planning Processes

The Operating Agent will work with the Task Experts to develop options for modifying network planning processes to incorporate DSM measures as alternatives to network augmentation. The result of this development process will be a concise description of each option, including its advantages and disadvantages, and suggestions as to how the option could be implemented in network planning processes. The Task Experts will be encouraged to circulate drafts of these descriptions to relevant people in their respective countries seeking comments about the practicality of the options. This will serve as a 'reality check' in relation to each of the options.

3.4 Subtask 4: Evaluation and Acquisition of Network-Driven DSM Resources

Subtask Objective

To develop 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.

Subtask Deliverable

A report on 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.

Activity 4-1: Survey of Evaluation and Acquisition Procedures for DSM Resources

The Task Experts will collect information about how DSM resources are evaluated, acquired and implemented in their countries, using an information collection instrument developed by the Operating Agent. The information collected will include: methodologies for evaluating the likely demand reduction and cost of proposed DSM options; and details of procedures for acquiring DSM resources, such as direct purchase, standard offers, requests for proposals, calls for expressions of interest, etc.

Activity 4-2: Development of 'Best Practice' Procedures

The Operating Agent will assess the information collected in Activity 4-1 and develop 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.

3.5 Subtask 5: Communication of Information About Network-Driven DSM

Subtask Objective

To communicate and disseminate information about network-driven DSM to relevant audiences, including representatives of electricity network businesses, government agencies and electricity end-users.

Subtask Deliverables

- A Task Newsletter.
- Information databases about network-driven DSM projects and measures.
- Regional workshops about network-driven DSM held in Europe, North America and Asia Pacific.

Activity 5-1: Prepare and Circulate a Task Newsletter

Information about the progress of the Network-Driven DSM Task will be provided to the Task Experts through a regular newsletter.

Activity 5-2: Establish Information Databases about Network-Driven DSM

The Operating Agent will establish and update databases containing relevant information about network-driven DSM projects and measures, and network planning processes, and will make these available to the Task Experts through a secure web site. Twelve months after the conclusion of the project, public access will be provided to these databases.

Activity 5-3: Conduct Regional Workshops

At the conclusion of the project, the Operating Agent will organise and conduct regional workshops about network-driven DSM in Europe, North America and Asia Pacific. The workshops will be relatively small, but will be targeted at relevant audiences, including representatives of electricity network businesses, government agencies and electricity end-users.

The purpose of the workshops will be to present the results of the work carried out in Task XV and to seek comments about the practicality of the results. This will serve as a 'reality check' in relation to the results. Comments received from workshop participants will be summarised in the final report from Task XV.

4. RESULTS

The following products will be developed in the Task XV. Further details about each of these products will be made available as the work of the Task is progressively completed.

Subtask 1: Worldwide Survey of Network-Driven DSM Projects

1. A report listing and summarising network-DSM projects implemented around the world.

Subtask 2: Assessment and Development of Network-Driven DSM Measures

2. A report listing and summarising successful network-driven DSM measures and the specific network problems they address.

Subtask 3: Incorporation of DSM Measures into Network Planning

3. A report on ways in which network planning processes can be modified to incorporate DSM measures as alternatives to network augmentation.

Subtask 4: Evaluation and Acquisition of Network-Driven DSM Resources

4. A report on 'best practice' principles, procedures and methodologies for the evaluation and acquisition of network-driven DSM resources.

Subtask 5: Communication of Information About Network-Driven DSM

5. A Task Newsletter.
6. Information databases about network-driven DSM projects and measures.
7. Regional workshops about network-driven DSM held in Europe, North America and Asia Pacific.

5. TIME SCHEDULE

This Annex will enter into force on 18 October, 2004, and shall remain in force until 30 April, 2006. Within the limits of the term of the Agreement, this Annex may be extended by two or more Participants in Task XV, acting in the Executive Committee, and shall thereafter apply only to those Participants.

6. RESPONSIBILITIES OF THE OPERATING AGENT

In addition to the obligations enumerated in Article 5 of this Agreement, the Operating Agent shall:

- (a) Manage and coordinate the successful completion of the Task XV Subtasks and the work of the different Task Experts in accordance with the Task XV Work Plan.
- (b) Provide semi-annual reports to the Executive Committee on the progress and results of the work performed under the Task XV Work Plan.
- (c) Provide to the Executive Committee within three months after completion of all work under the Task XV Work Plan, a Final Management Report for its approval.
- (e) Use its best efforts, in collaboration with the Participants, to avoid duplication with activities of other related programmes and projects implemented by, or under the auspices of the Agency or by other bodies.
- (e) Market and disseminate information about Task XV to raise and maintain interest in, and understanding of, the Task and the IEA DSM Programme.

7. RESPONSIBILITIES OF THE TASK EXPERTS

Each Task Expert shall:

- (a) Undertake about two person-months of work during the 18 month duration of Task XV.
- (b) Contribute their knowledge to the progress of Task XV.
- (c) Carry out any research work within their country which is required for Task XV, including identifying and providing information on both the network-driven DSM measures and electricity network planning processes implemented in their country.
- (d) Where participation in Task XV involves several organisations in their country, coordinate contributions by these organisations to the work of Task XV.
- (e) Attend up to four Experts Meetings and participate actively in these meetings.
- (f) Analyse and comment on draft versions of work carried out by the Operating Agent and other Task Experts.
- (g) Comment on draft versions of Task Status Reports and the Final Management Report.
- (h) Contribute to organising regional workshops held in their region, including organising an appropriate venue and inviting potential workshop participants.
- (i) At the conclusion of Task XV, write a memorandum to the Operating Agent describing and analysing lessons learned from their country's participation in Task XV.

8. MEETINGS

Experts Meetings will be held up to four times during the 18 month duration of Task XV on a rotational basis in one of the countries participating in Task XV.

9. FUNDING

The Task XV Budget is set at EUR 228,200. This amount will fund the Operating Agent's labour and expenses in managing and coordinating the successful completion of the Task XV Subtasks and in accomplishing its other obligations as Operating Agent.

Each Participant in Task XV will contribute an equal share of the Task XV Budget.

If the number of Participants changes, the value of each Participant's share of the Task XV Budget will be adjusted accordingly by the Executive Committee, acting by unanimity of the Participants in Task XV. New Participants shall pay a full equal share of the Task XV Budget.

The Operating Agent shall send invoices to the Participants at the commencement of the Task and nine months after the commencement. Payments from each Participant must be received by the Operating Agent no later than 60 days after the Participant's receipt of the Operating Agent's invoice.

If necessary, an increase in the Task XV Budget may be agreed upon by the Executive Committee, acting by unanimity of the Participants in Task XV.

In addition to its share of the Task XV Budget, each Participant shall bear all the costs of its own participation in Task XV, and the costs it incurs in carrying out its obligations under this Annex, including necessary travel costs.

10. INFORMATION AND INTELLECTUAL PROPERTY

The Participants and the Operating Agent shall have the right to publish all information provided to, or arising from Task XV, except for proprietary information. This right will commence 12 months after the completion of Task XV.

11. OPERATING AGENT

Energy Futures Australia Pty Ltd, acting through the Commonwealth of Australia, is designated as Operating Agent.

12. CONTRACTING PARTIES WHICH ARE PARTICIPANTS

The contracting parties in Task XV are the following:

The Commonwealth of Australia

Le Ministère de l' Industrie, des Postes et Télécommunications et du Commerce Extérieur (France)

The Ministry of Industry and Energy (Spain)

U.S. Department of Energy (United States).