

Annex XIX

MICRO DEMAND RESPONSE AND ENERGY SAVING

1. Description of Technical Sector

The domestic and small and medium enterprise (SME) sectors consume up to half of the electricity generated in developed countries, and therefore the potential for these sectors to deliver energy savings needs to be well understood if national targets for energy reduction are to be met. Previous work conducted under Task XI concluded that End Use Monitoring and Feedback (EUMF), Time of Use (TOU) pricing and Demand Side Bidding (DSB) have the potential to deliver valuable demand profile changes and financial benefits. More-over, it was demonstrated that relatively small amounts of demand flexibility can have large benefits in reducing peak capacity requirements. Therefore, this Task will focus on defining and evaluating the business case for delivering Energy Savings and Demand Response products in order to ensure that the potential benefits of demand flexibility within the residential / SME sectors can be realised.

2. Objectives

The specific objectives of Task XIX are to:

- Define demand response and energy saving products to meet System Operators, Supplier, Government and Customer requirements;
- Identify, develop and define packages of demand response and energy saving service products for residential and / or SME customers, based on energy end use monitoring and feedback, time of use pricing and demand control to meet the above requirements;
- Develop mechanisms to deliver demand response and energy saving service products;
- Evaluate how Energy Saving Service Provider / Demand Aggregator businesses can provide demand response and energy saving service products for residential and / or SME customers;
- Develop Energy Saving Service Provider / Demand Aggregator routes to market for residential and / or SME customers;
- Make an overall assessment of common ground and technologies to be shared with smart metering infrastructure;
- Estimate incremental costs of implementation of product delivery systems;
- Quantify the business case for the provision of demand response and energy saving products.

3. Means

The objectives shall be achieved by the Participants in the following Subtasks:

(a) Subtask 1: Demand response and energy saving products

This Subtask will define the demand response parameters required by System Operators, Suppliers and Balance Responsible parties. The Subtask will also determine the energy savings that could be achieved through the application of demand response and energy end use monitoring and feedback.

(b) Subtask 2: End use demand changes

This Subtask will identify specific demands which could be influenced by demand change motivating mechanisms identified in Subtask 3. The technical architectures for collecting and estimating end use demand information and delivering control motivators to change demand will be outlined.

(c) Subtask 3: Demand response and energy saving delivery mechanisms

This subtask will define mechanisms for motivating and delivering energy savings and identify metering, disaggregated data and control mechanisms for motivating and delivering demand response by residential / SME customers.

(d) Subtask 4: SME costs and benefits

This Subtask will determine the costs and benefits for delivering energy saving and demand response services for SME customers using disaggregated demand information, metering and control. The implementation methodologies for delivering the benefits and viable business will be estimated together with the potential for savings.

(e) Subtask 5: Residential customer costs and benefits

This Subtask will determine the costs and benefits for delivering energy saving and demand response services for residential customers using disaggregated demand information, metering and control. The implementation methodologies for delivering the benefits and viable business will be estimated together with the potential for savings.

(f) Subtask 6: Business case estimation

This Subtask will determine the customer financial instruments and reward mechanisms to achieve commercially viable Energy Savings Service Provider / Demand Aggregator businesses delivering CO2 savings and equivalent, network and generation capacity provision, by modifying demands of residential and SME customers. The potential for demand response and energy saving measures to be accredited for meeting Government, Regulator and supplier energy saving targets and obtaining financial support will be evaluated.

4. Results

The principal deliverables for Task XIX will be as described below:

- A report defining the requirements for micro demand response and energy saving products for residential and / or SME customers. This report will describe the demand response parameters and energy saving that need to be met by micro demand response and end use monitoring and feedback, and identify the end use demand changes that can deliver these requirements. The report will also describe the mechanisms and technologies required for the delivery of micro demand response and energy saving.
- A report describing the costs and benefits of demand response and energy saving to residential and / or SME customers. The report will also provide a detailed assessment of the business case for the provision of demand response and energy saving products for residential and / or SME customers.

5. Time Schedule

This Annex shall enter into force at such time as the Executive Committee, acting by unanimity of those Contracting Parties which have communicated to the Executive Director a Notice of Participation in this Annex, determines that there is sufficient participation to perform Task XIX, taking account of both cost-sharing and task-sharing elements of the Annex. This Annex shall remain in force until 30 June 2010. Within the limits of the term of the Implementing Agreement, this Annex may be extended by two or more Participants in Task XIX, acting in the Executive Committee, and shall thereafter apply only to those Participants.

6. Specific Obligations and Responsibilities of the Participants

Each Task Expert shall:

- (a) Undertake about two person-months of work during the expected 15 month duration of Task XIX.
- (b) Contribute their knowledge to the progress of Task XIX.
- (c) Carry out any research work within their country which is required for Task XIX.
- (d) Where participation in Task XIX involves several organisations in their country, coordinate contributions by these organisations to the work of Task XIX.
- (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.

7. Specific Obligations and Responsibilities of the Operating Agent

In addition to the obligations enumerated in Article 6 of this Implementing Agreement, the Operating Agent shall:

- (a) Manage and coordinate the successful completion of the Task XIX Subtasks and the work of the different Task Experts in accordance with the Task XIX Work Plan.
- (b) Provide reports to the Executive Committee on the progress and results of the work performed under the Task XIX Work Plan every six months.
- (c) Provide to the Executive Committee within three months after completion of all work under the Task XIX 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 XIX to raise and maintain interest in, and understanding of, the Task and the IEA DSM Programme.

8. Funding

The Task XIX Budget is set at EUR 337,845 based upon at least eight participating countries. This amount will fund the Operating Agent's labour and expenses in managing and coordinating the successful completion of the Task XIX Subtasks and in accomplishing its other obligations as Operating Agent. Each Participant in Task XIX will contribute an equal share of the Task XIX Budget

If the number of Participants is less than eight, the value of each Participant's share of the Task XIX Budget will be EUR 42,231 and the overall budget of Task XIX will be reduced and the programme of work revised accordingly. Any revision to the programme of work will be agreed upon by the Executive Committee, acting by majority of the Participants in Task XIX.

The Operating Agent shall send invoices to the Participants at the commencement of the Task and thereafter at the thirteenth month. Payments from each Participant must be received by the Operating Agent no later than 30 days after the Participant's receipt of the Operating Agent's invoice.

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

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

9. Information and Intellectual Property

The principal results and outputs of this Task will remain confidential to the Participants for a period of 12 months after the completion of the Task, unless all Participants agree to an earlier release of information.

The Task is not anticipated to lead to the development of any new Intellectual Property. The ownership of any Intellectual Property that may arise shall be established in accordance with the terms set out within this Implementing Agreement.

10. Operating Agent

EA Technology Limited, acting through the United Kingdom, is designated as Operating Agent.

11. Participants in the Task

The Contracting Parties which are Participants in this Task are the following:

The National Technology Agency (TEKES), Finland

Agence de l'Environnement et de la Maîtrise de l'Energie, France

The Ministry of Development, Greece

The Bureau of Energy Efficiency, Ministry of Power, India

The Ministry of Science and Technology, Spain

Department for Energy and Climate Change (DECC), United Kingdom