

## *Annex VIII*

### DEMAND-SIDE BIDDING IN A COMPETITIVE ELECTRICITY MARKET

#### **1. Description of Technical Sector: Definitions**

##### *(a) Description of Technical Sector.*

Investigation of techniques for the introduction of demand-side bidding products into the electricity market.

##### *(b) Definitions.*

DSB

Demand-Side Bidding

#### **2. Objectives**

The aim of the Task can be stated in general terms as follows:

To evaluate and promote Demand-Side Bidding as a means to improve the global environment.

This can then be interpreted as a set of specific objectives:

To evaluate current DSB schemes, analyse for generic features, strengths and weaknesses, and provide guidelines for the development of new schemes and enhancements to existing schemes.

#### **3. Means**

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

##### *(a) Subtask 1: Project scoping*

The objective of this Subtask is to reach a common definition of Demand-Side Bidding including the distinction between the bidding of total demand into the market alongside generation, and the bidding of demand reductions below previously forecast levels. It will include a consideration of the time scales over which DSB operates and the period of notice that a customer might be given in a request to reduce load.

The Participants shall achieve this objective through correspondence and a meeting of Experts. Subtask 1 shall be largely task shared.

*(b) Subtask 2: Survey of organisations*

The objective of this Subtask is to gather further information about policies on competition and environment, market structures, and trading arrangements. This will include also the views on current or possible DSB schemes and how these fit into the market.

The Participants shall achieve this objective by surveying government agencies, the Regulator, and market operators, as well as electricity generators, distributors, suppliers, and traders. Subtask 2 shall be largely task shared.

*(c) Subtask 3: Survey of customers*

The objective of this Subtask is to gather further information about electrical loads available for DSB, the level of load decrements that might be feasible, what financial values the customers would put on the lost load, and what incentive payments would be needed to make participation in DSB attractive.

The Participants shall achieve this objective by surveying electricity customers, suppliers, and traders for information on customer reactions to current or possible DSB schemes.

*(d) Subtask 4: Study of technologies for domestic, commercial and industrial sectors*

The objective of this Subtask is to study the technologies for the domestic, commercial, and industrial sectors, in order to determine which technologies can be controlled in ways suitable for use in DSB schemes. For each technology, it would be important to distinguish those for which a load reduction would save energy, those which defer the energy consumption with no overall change in total consumption, and those for which total energy consumption might be increased. This information could be linked to the structure of the electricity markets so as to confirm the extent to which the load reductions of a DSB scheme might be expected to lead to the use of lower-cost or more-efficient generation.

This study will also cover the means of monitoring the offered loads or load reductions to confirm that they are delivered by the customer as bid. The costs of this monitoring will be estimated, so as to ensure that they are commensurate with the benefits provided by the DSB scheme. Subtask 4 shall be performed by the Operating Agent funded on a cost shared basis by the participants.

*(e) Subtask 5 : Analysis of Results from Survey and Technology Study*

The objective of this Subtask is to analyse the results of the survey and technology study as they become available. It will draw out conclusions about the potential for DSB in each situation. It will evaluate the existing mechanisms to determine to what extent they meet their objectives, to identify the critical success factors, and to understand the causes of any shortcomings. Subtask 5 will be mostly cost shared and

carried out by the Operating Agent in consultation with the Experts.

*(f) Subtask 6: Creation of new DSB proposals*

The objective of this Subtask is to develop guidelines for the creation of DSB schemes that correct the past failings, or which increase or extend the availability of the benefits. These could take the form of "best practice" guides for the setting up of DSB schemes. This work will build on the background information gathered in Subtasks 1 to 5 in order to ensure that new proposals are suitable for the different market mechanisms and regulatory structures. Subtask 6 shall be mostly cost shared and carried out by the Operating Agent in consultation with the Experts.

*(g) Subtask 7: Preparation of final report*

The objective of this Subtask is to document and record all the previous Subtasks bringing together the experiences of the different countries and ensuring that proposed DSB schemes would benefit suppliers, customers, and others in the market, whilst at the same time contributing to the policy goals of the governments. Subtask 7 shall be mostly cost shared and carried out by the Operating Agent in consultation with the Experts.

#### **4. Results**

The products of work performed in this Annex will be designed for use by national and regional governments, utility regulators, and electricity transmission, distribution and supply companies.

Results of the joint activity will include:

*(a) Subtask 1:*

A report on project scoping conclusions

*(b) Subtask 2:*

A report of findings and conclusions

*(c) Subtask 3:*

A report providing the collated results from the national surveys

*(d) Subtask 4:*

A study report on available technologies

*(e) Subtask 5:*

An interim report with analysis of results from Subtasks 3 and 4.

*(f) Subtask 6:*

Guidelines for the development or improvement of DSB schemes

*(g) Subtask 7*

Final report covering Subtasks 1 to 6

## **5. Time Schedule**

This Annex shall remain in force until 31st October 2001. Within the limits of the term of the Agreement, this Annex may be extended by two or more Participants, acting in the Executive Committee, and shall thereafter apply only to those Participants.

## **6. Specific Obligations and Responsibilities of the Participants**

In addition to the obligations enumerated in Article 7 of the Agreement:

*(a)* Each Participant shall provide the Operating Agent with detailed reports on the results of the work carried out for each Subtask;

*(b)* Each Participant shall participate in the editing and reviewing of draft reports of the Task and Subtasks.

## **7. Specific Obligations and Responsibilities of the Operating Agent**

In addition to carrying out the specific responsibilities enumerated in Articles 5 and 7 of this Agreement, the Operating Agent shall prepare, review and distribute the results mentioned in paragraph 4 above.

## **8. Funding**

### *(a) Common Fund*

A common fund shall be established by the Executive Committee and shall be included in the annual Programme of Work and Budget for the purpose of funding the obligations of the Operating Agent under this Annex.

### *(b) Task Costs*

The Budget of the Operating Agent, for carrying out the management of Subtasks 1 and 2 of the Annex is set at US \$63,942. This amount is covered by a direct agreement between the participants in the Introductory Task Shared Work Plan and the Operating Agent.

The overall Budget of the Operating Agent, for carrying out the management of Subtasks 3, 4 and 5 of the Annex, and the expenditure for the first financial year (1st April 1999 to 31st March 2000) that the Annex is in operation, is set at US \$170,376 at April 1999 prices.

For Subtasks 6 and 7 of this Annex, the Budget is to be set by the Executive Committee, acting by unanimity of the Participants in this Annex. If significant changes in price levels or the scope of activities under the Annex occur, the Executive Committee, acting by unanimity of the Participants in this Annex, shall consider whether to adjust the Programme of Work to the available funds or increase the Budget.

### *(c) Sharing of Task Costs*

The Budget shall generally be funded by the participants through a standard contribution of five per cent of the Budget plus a pro rata contribution based on a countries' percentage contributions to the Budget of the Agency, where pro rata percentages are applied to the portion of the Budget which remains to be funded after the standard contribution are made. However, this formula may be modified by the Executive Committee acting by unanimity of the Participants in the Task. The contribution of the European Communities and Associated Contracting Parties shall be determined by the Executive Committee, acting by unanimity of the Participants in this Annex.

### *(d) Payment terms*

The Operating Agent shall send invoices to the Participants at the beginning of each financial year of the Task. 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.

### *(d) Changes in Numbers of Participants*

If the number of Participants changes, the shares of contributions to the costs will be adjusted accordingly by the Executive Committee, acting by unanimity of the Participants. New Participants shall pay the full share of the costs beginning with the project year in which they become Participants.

### *(e) Individual Financial Obligations*

In addition to the contributions described in sub paragraph (c) above, each Participant shall bear the all the costs it incurs in carrying out its obligations under the Annex.

*(f) Task Sharing Requirements*

The level of effort to perform the work specified in this Annex is estimated for each participant as follows:-

Subtasks 1, 2	27 person-days over 7 months
Subtasks 3, 4, 5	30 person-days over 9 months
Subtasks 6, 7	not yet known.

**9. Operating Agent**

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

**10. Participants in the Task**

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

- The Technology Development Centre (TEKES) (Finland)
- The Ministry of Development (Greece)
- The Netherlands Agency for Energy and the Environment (NOVEM) (The Netherlands)
- The Norwegian Water Resources and Energy Administration (NVE) (Norway)
- The Ministry of Industry and Energy (Spain)
- The Swedish National Energy Administration (STEM) (Sweden)
- The Department of Trade and Industry (United Kingdom)
- EA Technology Ltd (United Kingdom)