STANDARD SUMMARY PROJECT FICHE
2003 Phare National Programme

1. Basic Information

1.1 CRIS Number: BG2003/004-937.06.02

1.2 Title: "Creation of operating means for Transmission System Operator in relation to the administration of a competitive electricity market”.

1.3 Sector: Energy

1.4 Location: Bulgaria

2. Objectives

2.1 Overall Objective(s):

- Creation of conditions for the participation in the electricity market of all non-residential customers in a competitive market;
- Establishing technical conditions for the operation of the Transmission System Operator (TSO) in administration of bilateral contracts and structuring and operating a Balancing Market (BM).

2.2 Project purpose:

- Development of a methodology on load profiling for eligible customers as to their participation in the open market and development, procurement and commissioning of specialised software and hardware for the TSO.

2.3 Accession Partnership and NPAA priority

The following AP and NPAA priorities will be addressed by the project:

Accession Partnership:

- Economic criteria - Make progress on restructuring of the energy sector;
- Energy – Make preparation for participation in the internal market for electricity; create an independent transmission system operator (electricity)

NPAA:

- Chapter 14. Energy, 14.2. Electricity, 14.2.1. - Establishing of a competitive electricity market
2.4 Contribution to National Development Plan

- Establishment of a market-oriented, efficient and competitive energy sector adjusted to meet the requirements of the EU for the internal market in electricity;
- The project will contribute to the reliable operation and functioning of the balancing power market, as well as ensure full service to the market liberalized part and create conditions for a gradual introduction of the spot market (Power Exchange);
- The provisions of European Directive 96/92 and its amendments shall also be taken into consideration.

2.5. Cross Border Impact

As a Member of SETSO Task Force, NEK (National Electricity Company), respectively TSO, participates in all activities related with the creation of a Regional Electricity Market (REM) integrated within the EU Internal Electricity Market. In this regard, the proposed by NEK Project will contribute for creating a national competitive market, which is the first step and the basic assumption for creation of REM and achievement of free cross-border electricity trade. SETSO TF Activities are described in more details in Annex 5.

3. Description

3.1 Background and justification

A new Energy Law is under preparation and may be expected to come into force in the first half of 2003. It will introduce new concept about power market, moving from a model of a “Single Buyer” to a model of a bilateral contracts and a balancing market. The new Energy Law will regulate the new relations between the market participants in a new market environment and will define a new role and responsibilities of the TSO and the Regulatory commission.

Adoption of a new Energy Act shall establish an adequate institutional framework and legislative mechanism toward introducing market principles in the energy sector.

Amendments to the secondary legislation (Tariff Ordinance, Open Access Ordinance, Technical Rules) also are in progress.

Adaptation and amendments of the Tariff Ordinance are in regard with the transmission tariff and determination of its components (introduction of methodology for calculation of the expenses for ensuring a cold reserve, expenses for covering the transmission losses and the own expenses of the TSO).

Market Rules as a key document for regulation of the power market which shall be in conformity with the new Energy Law are also in a process of development.

All forthcoming changes in the legislative framework are in accordance with the European Directive 96/92 and its amendment.

The creation of respective legislative and institutional framework is only the one part of the task toward establishment of a competitive power market. The second task is the development of programs and tools for realization of the directions in the Law.
Both sub-projects – “Development of a methodology for load profiling” and “Development, procurement and commissioning of specialized software and hardware for the TSO” shall contribute to the following:

- Small industrial customers without digital meters shall have the possibility to participate in the competitive market under transparent and non-discrimination conditions
- TSO shall have a tool for quickly and reliably organization of the settlement process in the balancing market with growing number of participants in each following year, for control and management of the financial flows, as a precondition for establishment of a spot-market.

The implementation of the new Energy Act and its decrees according to European Directive 96/92 will impose unbundling of NEK (National Electricity Company) and separation of the system management and transmission activities from trading of electricity. A Market Operator (MO) will be established as a specialized part of TSO. The MO shall administrate BM and shall be responsible for the settlement of market participants. The effective operation of the MO needs initial investments for specialised software and hardware for the BM.

The chosen power market model (Bilateral contracts and Balancing market) assumes measuring of the generation/consumption of each player for each settlement period. Since some of the eligible customers have many little sub-sites where digital meters are not installed and the requirement for measuring per 15/30/60 minutes could not be realized, so typical load profiles with the expected loads for every settlement period should be apply there. In that case the project shall ensure an opportunity of all non-residential customers to participate in the competitive electricity market.

3.2. Linked activities:

**BG9411-03-01-L001 - Amendments to the Draft Energy Law**
This activity was run in 1996 to identify and define the legislative provisions required for the Energy Law.

**BG9508-01-03 Assistance with the establishment of an Energy Regulatory Authority (ERA)**
Defining responsibilities and activities of ERA and its proper setting of the Bulgarian system administration. Results of this project were taking into consideration in physical establishment of SERC (State Energy Regulatory Commission).

**Activity BUL 4101 – Assistance with the preparation of an Open Access Ordinance**
The project aims to define the number of regulations required to be ensure equitable and transparent access to the transmission and distribution networks of generators and customers.

**Activity BUL 4102 – Market Design and Market Rules for the Bulgarian Electricity Sector**
According to Activity BUL 4102 a market model for the Bulgarian power market was suggested by the consultants and discussed by the Bulgarian experts and a draft market rules were developed. The detailed Work Plan provides the needs of a special software program for settlement and pricing. The Project is ongoing.
Activity REM 1301 ? 1402 – Establishment of a Regional Electricity Market (REM)

Following the first South East Europe Electricity Regulation Forum held in Athens in June 2002 a Regional Market Facilitation Group was formed. The responsibility of this group is to develop a REM with a global vision and to prepare the necessary market rules to allow for the opening of the market in 2005. This Work Group is benefit from the technical assistance provided by SEETEC Project. The Project is ongoing.

3.3. Results:

- Operative Methodology for defining typical load profiles for non-residential customers including input data, required measurements, calculation procedures and output format;
- Submitted Instructions for applying of a load profiling methodology for the settlement of market participants. The elaborated methodology should be approved by SERC as an appendix to the Market Rules;
- Put in operation of a specialized software and hardware for:
  - Acquisition, checking, processing and storage of electric meter data for each period of settlement;
  - Acquisition, ranking and storage of offers and bids for the Balancing Market;
  - Application of merit orders for the acceptance of balancing energy sources;
  - Calculation of imbalance prices and settlement;
  - Information, invoicing.

3.4. Activities:

- **Activity 1:** Development of a methodology for load profiling of eligible customers in reference to their participation in the open market (12 man-months):
  - Overview of the load profiling practices in the electricity markets in other countries;
  - Allocation of the types of customers in several groups according to the load characteristics and development of a methodology for defining their load profiles taking into account variable external factors (for instance temperature, typical days of the week, etc.);
  - Pilot determination of the load profiles of a selected group of customers.

- **Activity 2:** Development, procurement and commissioning of specialised software and hardware for the BM operator (24 man-months):
  - Determination of the requirements and the technical specifications for the procurement of the required equipment;
  - Development of algorithms for the software operation according to the Market Rules;
• Delivery, installation and test operation of the software and hardware;
• Training of the TSO specialists to operate with the software and hardware.

3.5. Lessons learned:

During the execution of the linked activities (listed in p. 3.2) it has been found that the rules of the operation of the market are not something fixed forever. Market rules require frequent amendments to be effected thereto.

The specification to be issued should provide for maximum flexibility of the software to be implemented. Such flexibility is needed in order to enable us to follow closely any and all changes in the market environment.

4. Institutional Framework

The institution – recipient of the project is the Ministry of Energy and Energy Resources (MEER). The coordination of the implementation of the project will be carried out by the “European Integration and International organisations and programs” Directorate, “International organisations and programs” (IOP) Department which has the relevant administrative potential.

➢ The beneficiary institution of the project is NEK. NEK is responsible for the technical implementation of the project. A Project Implementation Unit (PIU) will be adequately staffed with 2 qualified full-time experts. The PIU is responsible towards the CFCU at the Ministry of Finance and MEER for the operational management of the project. The implementation of the project will be realized in close cooperation with qualified experts from NEK, MEER and SERC.

➢ A Steering committee, consisting of a Chairman (MEER), a Secretary (MEER), members – experts from NEK, MEER and SERC and an observer of the EC Delegation, will be set up, having the following responsibilities and tasks:
   • Approval of a draft terms of reference;
   • Observation of the implementation of the project to be in compliance with the Terms of Reference;
   • Sets up working groups consisting of Bulgarian experts from NEK, MEER, and SERC;
   • Ensures the materials and data base access necessary for the project implementation’
   • Proposes to the Minister of MEER a draft decision on the approval of the interim and final results of the project.
5. Detailed Budget

<table>
<thead>
<tr>
<th>Activity</th>
<th>Phare Support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Investment Support (1)</td>
</tr>
<tr>
<td>1. Load Profile Methodology Development</td>
<td>-</td>
</tr>
<tr>
<td>2. Technical specifications, software algorithms and training</td>
<td>-</td>
</tr>
<tr>
<td>Supply contract</td>
<td>Software and Hardware</td>
</tr>
<tr>
<td>Total</td>
<td>0.8</td>
</tr>
</tbody>
</table>

* The national co-financing (0.4 MEURO) will be done from the National Budget.

6. Implementation Arrangements

6.1 Implementing Agency

The project will be implemented under the Decentralised Implementation System (DIS) and the new Practical Guide to Phare, ISPA and SAPARD contract procedures (PRAG).

The Implementing Agency is the Central Financing and Contracting Unit (CFCU) at the Ministry of Finance. CFCU manages the programme and is responsible for administrative and financial management of the projects, which cover the tendering, contracting, accounting, payments and reporting as well as submission of documents to be endorsed by the Commission.

The Commission transfers funds to NF in accordance with the Memorandum of Understanding (MoU) signed between EC and the Government of Bulgaria.

The institution – recipient of the project is the Ministry of Energy and Energy Resources (MEER).

The beneficiary institution of the project is NEK.

6.2 Twinning – no

6.3 Non-standard aspects - no
6.4 Contracts

- Service Contract with 2 lots:
  - **Lot 1** for development and implementation of load profiles as well as a pilot determination of the load profiles of a selected group of customers – 0.3 MEURO and
  - **Lot 2** for a total amount of 0.8 MEURO for the following activities:
    - Preparation of Technical specifications for delivery of a specialized software and hardware - 0.2 MEURO;
    - Adaptation of the software toward the Market Rules requirements and installation of the equipment and commissioning – 0.4 MEURO;
    - Training of the TSO specialists to run the software and hardware for the purposes of the BM - 0.2 MEURO.

- Supply Contract for delivery and installation of a software and hardware equipment for the operation of the BM Operator – 1.2 MEURO, including the co-financing.

7. Implementation Schedule

- 7.1 Start of tendering/call for proposals - 02.2004
- 7.2 Start of project activity - 10.2004
- 7.3 Project Completion - 07.2006

8. Equal Opportunity

Men and women have equal rights to participate in the implementation of the project. There are no restrictions with regard to ethnical origin, religious or political allegiance.

9. Environment

The implementation of the project will not have a hazardous environmental impact.

10. Rates of return

The investment component of the project is an integral part of the institutional building project and therefore no rates of return can be calculated.

11. Investment criteria

11.1. Catalytic effect:

Phare’s support is an integral part of the institutional building project which would otherwise have taken place at a later date.
11.2. Cofinancing:
The national co-financing (0.4 MEURO) will be done from the National budget through the National Fund.

11.3. Additionality:
Phare grants will not displace other financiers especially from the private sector or IFIs.

11.4. Project readiness and Size:
The investment component of the project will be ready for contracting after the completion of the technical assistance activities within this project.

11.5. Sustainability:
The investment will be sustainable in the long term, i.e. beyond the date of accession. It will comply with EU norms and standards and will be in line with EU sector policy acquis. It should not have adverse effects on the environment and is financially sustainable, NEK will pay for future maintenance and operating costs.

11.6. Compliance with state aids provisions
Investments respect the state aids provisions.

12. **Conditionality and sequencing**
Adoption of the New Energy Act is the basic precondition for starting the Project.

The project activity 2 is divided into two phases. The first phase is technical assistance for preparation of Technical specifications. The second investment phase can only start after the completion of the first phase.

**ANNEXES TO PROJECT FICHE**

1. Logical framework matrix in standard format.
2. Detailed implementation chart.
3. Contracting and disbursement schedule by quarter for full duration of programme (including disbursement period).
4. Reference to feasibility/pre-feasibility studies.
5. The role of SETSO Task Force.
## ANNEX 1

### PHARE LOGFRAME

<table>
<thead>
<tr>
<th>LOGFRAME PLANNING MATRIX FOR</th>
<th>Programme name and number</th>
<th>Contracting period expires:</th>
<th>Disbursement period expires:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total budget: € 2.3 million</td>
<td>Phare budget: € 1.9 million</td>
</tr>
</tbody>
</table>

### Overall objective

1) Creating conditions for the participation in the electricity market of all non-residential customers;

2) Establishment of technical conditions for the operation of the TSO – administration of bilateral contracts and structuring and operating a balancing market

### Objectively verifiable indicators

1) Load profiling for medium and small size customers and their reading;

2) Productive software and hardware for the TSO operations

### Sources of Verification

1) Reports on the performance of the TSO and SERC;

2) Annual reports of the European Commission on the levels of implementation of the Directive 96/92 requirements

### Project purpose

1) Development of a methodology on load profiling for eligible customers as to their participation in the open market;

2) Development, procurement and commissioning of specialised software and hardware for the BM operator

### Objectively verifiable indicators

1.1) SERC approves a methodology of profiling special types of customer according to the demands curve in 2004;

1.2) TSO starts to apply load profiles for settlement purposes in 2005;

2) TSO starts running the software and hardware for market administration purposes in 2005

### Sources of Verification

1.1) SERC publishes a supplement to the Market Rules laying down a methodology of formation and application of load profiles;

2) TSO publishes the required information on the electricity market operation and market participants

### Assumptions

1.1) Gradual opening of the market for all non-residential;

1.2) Use of the existing information on the load characteristics of non-residential customers

2.1) Established Electricity Market Rules
<table>
<thead>
<tr>
<th>Results</th>
<th>Objectively verifiable indicators</th>
<th>Sources of Verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1) Methodology of defining typical load profiles for non-residential customers including input data, required measurements, calculation procedures and output format; 1.2) Instructions on the application of a load profiling methodology for the settlement of market participants;</td>
<td>1.1) SERC approves the proposed methodology as a supplement to the Market Rules;</td>
<td>1) Development of load profiles for a selected (pilot) group of customers;</td>
<td>1) Customers with sites included in the pilot group submit physical nominations on their load;</td>
</tr>
<tr>
<td>2.1) Productive software for:</td>
<td>2) TSO starts to use the software and hardware in its regular operation.</td>
<td>2) Report by the TSO on the results of the productive implementation of the software and hardware</td>
<td>2) Implemented and operating system for acquisition and storage of metering data for the market participants</td>
</tr>
</tbody>
</table>
| - acquisition, checking, processing and storage of electric meter data for each period of settlement;  
- acquisition, ranking and storage of offers and bids for the Balancing Market;  
- application of merit orders for the acceptance of balancing energy sources;  
- measurement of balancing energy used and imbalance price settlement;  
- information, invoicing. |                                                                                                  |                                                                                         |                                                                           |
<table>
<thead>
<tr>
<th>Activities</th>
<th>Means</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1) Overview of the load profiling practices in the electricity markets in other countries;</td>
<td>1.1) Technical Assistance Contract – Lot 1;</td>
<td>1.1) Effective cooperation with other institutions – distribution companies and eligible customers;</td>
</tr>
<tr>
<td>1.2) Allocation of the types of customers in several groups according to the load characteristics;</td>
<td>2.1) Technical Assistance Contract – Lot 2;</td>
<td></td>
</tr>
<tr>
<td>1.3) Pilot determination of the load profiles of a selected group of customers;</td>
<td>2.2) Supply contract</td>
<td>2.1) Adequately equipped training centre for the TSO staff</td>
</tr>
<tr>
<td>2.1) Development of software algorithms in conformance with the electricity market rules governing its structure and operation;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2) Determination of the requirements, specifications and procurement of the required hardware;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3) Implementation and test operation of the software and hardware;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4) Training of the TSO specialists to run the software and hardware</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Preconditions**

- The New Energy Act adopted.
- SERC approves the Technical and Commercial rules for the structure and operation of the electricity market;
- MEER approves the organizational structure of the Transmission System Operator.
## ANNEX 2

### DETAILED IMPLEMENTATION CHART

Creation of operating means for Transmission System Operator in relation to the administration of a competitive electricity market

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tendering for Service Contract - Lot1 and Lot2</td>
<td>x x x x x x</td>
<td>x</td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Technical assistance (Lot1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development and implementation of load Profile Methodology</td>
<td>x x x x x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task completion (Lot1)</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Technical assistance (Lot 2):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Development of Technical specifications for software and hardware delivery</td>
<td>? ? ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Supervision, training, etc.</td>
<td></td>
<td></td>
<td>x x x x x x</td>
</tr>
<tr>
<td>Tendering for Supply contract</td>
<td>x x x x x x x x x x x x x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project completion</td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>
# ANNEX 3

## CUMULATIVE QUARTERLY CONTRACTING SCHEDULE IN MEuro

<table>
<thead>
<tr>
<th>Projects Sub-Projects</th>
<th>Expected Contractual Commitments (Quarters)</th>
<th>Budget Allocation (Phare Funds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
<td>2005</td>
</tr>
<tr>
<td><strong>Service Contract Lot 1:</strong> Development and implementation of load profiles as well as a pilot determination of the load profiles of a selected group of customers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Service Contract Lot 2:</strong> Preparation of Technical specifications for delivery of a specialized software and hardware; adaptation of the software toward the Trading Rules requirements and installation the equipment; training</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Supply Contract:</strong> Delivery and installation of a software and hardware equipment for the operation of the BM Operator:</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>• Phare funds</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>• Co-funding</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total (Phare funds)</strong></td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total (Phare and co-funding)</strong></td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
## CUMULATIVE QUARTERLY DISBURSEMENT SCHEDULE IN MEuro

<table>
<thead>
<tr>
<th>Projects Sub-Projects</th>
<th>Disbursement (Payment) Schedule (Quarters) in MEURO</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
<td>2005</td>
</tr>
<tr>
<td><strong>Service Contract Lot 1:</strong> Development and implementation of load profiles as well as a pilot determination of the load profiles of a selected group of customers</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Service Contract Lot 2:</strong> Preparation of Technical specifications for delivery of a specialized software and hardware; adaptation of the software toward the Trading Rules requirements and installation the equipment; training</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
| **Supply Contract:** Delivery and installation of a software and hardware equipment for the operation of the BM Operator:  
  - Phare funds  
  - Co-financing | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.4 | 0.8 | 0.8 | **0.8** |
| **Total (Phare funds)** | 0 | 0 | 0 | 0.2 | 0.4 | 0.5 | 0.5 | 0.9 | 1.7 | 1.9 | **1.9** |
| **Total (Phare funds and co-financing)** | 0 | 0 | 0 | 0.2 | 0.4 | 0.5 | 0.5 | 1.3 | 2.1 | 2.3 | **2.3** |
REFERENCE TO FEASIBILITY / PRE-FEASIBILITY STUDIES

BG9411-03-01-L001 - Amendments to the Draft Energy Law
BG9508-01-03 Assistance with the establishment of an energy regulatory Authority
Activity BUL 4101 – Assistance with the preparation of an Open Access Ordinance
Activity BUL 4102 – Market Design and Market Rules for the Bulgarian Electricity Sector
Activity REM 1301 ? 1402 – Establishment of a Regional Electricity Market
ANNEX 5

PREPARATION OF THE "ATHENS PROCESS":

THE ROLE OF SETSO TASK FORCE

1. SETSO TF CREATION

During an initiation meeting preliminary to the first "Southeast Europe Electricity Regulatory Forum" (SEEERF), which took place in Athens on June the 12th, 2002 and involved ETSO, SUDEL and UCTE, the TSOs and companies representing Southeast Europe (SEE) countries proposed to set up a joint ETSO/SUDEL Task Force under the umbrella of ETSO, named "Southeast Europe TSOs" (SETSO) with a reinforcement of expertise from ETSO. The proposal so presented was approved in two subsequent meetings both by the ETSO Steering Committee and by the SUDEL Enlarged Executive Committee respectively on June 25th and 27th. From then on, the SETSO Task Force represents the TSOs of the SEE Region for the creation of a Regional Electricity Market (REM) integrated within the EU Internal Electricity Market (IEM). On this basis, the SETSO TF takes part in the meetings of SEEERF, recently renamed "Athens Process", and represents the TSOs point of reference for the European Commission (EC) and the Council of European Energy Regulators (CEER).

Members of the SETSO TF are the representatives from the TSOs and companies from the SEE Region. Therefore, the SETSO TF includes the participation of one member from each of the following countries: Albania, Austria, Bosnia-Herzegovina, Bulgaria, Croatia, FR of Yugoslavia (both Serbia and Montenegro), FYROM, Greece, Hungary, Italy, Romania, Slovenia and Turkey plus the extraordinary contribution from EKC-Serbia, due to its remarkable knowledge of the SEE network. All the TF members have the same rights regardless of the current membership status of their countries in ETSO, SUDEL or UCTE.

The Convenor of the TF is Antonio Serrani (GRTN-IT), member of the ETSO SC and Vice President of SUDEL, which he is required to regularly report to. SETSO TF Vice Convenor is Aristides Tassoulis (HTSO-GR), former Convenor of the SUDEL Market Facilitation WG.

2. SETSO TF OBJECTIVES AND ROLE

As reported in the conclusions of the mentioned joint meeting among ETSO, SUDEL and UCTE, held in Athens on the 12th of June 2002, the SETSO TF activity will be based on the ETSO experience, widely matured within the field of Cross Border Trade and Network Access and Congestion Management, and will start from the significant results achieved from the SUDEL WG "Market Facilitation". More specifically, the main operational objectives the TF is charged can be summarised as follows:

(1) The study and implementation of a temporary ad-hoc "Cross Border, Tariffs" mechanism for SEE region, based on physical flows rather than on commercial flows, able not to introduce any pancaking and to provide an inter-TSO compensation procedure to cover all the network costs arising from the cross border physical flows, in compliance with the position papers from CEER,
the principles highlighted from the Florence Forum and the temporary CBT mechanisms presently adopted within ETSO;

(2) The development of methodologies and technologies for Network Access (NA) and Congestion Forecast (CF), based on transparent and non discriminatory principles, by implementing ETSO procedures for the cross border transmission capacities calculation, by merging and improving procedures for system security checking based on data exchange of calculations, existing and used within the 1st and 2nd UCTE zones, and by determining common rules and format for data publication;

(3) The study, development and implementation of ETSO procedures for Congestion Management (CM), based on transparent and non discriminatory principles, by determining the most appropriate principles to be applied for the congestion resolution within the SEE Region network:

(4) The monitoring of the extension to SEE Countries and the subsequent implementation of the ETSO designed information system, namely Electronic Highway (EH), to guarantee the reliability and rapidity of data exchanges among TSOs Control Centres, in collaboration with UCTE, SUDEL and Donors organisations;

(5) The assistance and support to the single TSOs in the current transition phase of restructuring and reorganisation of the whole power sector, to co-operate in building conveniently the SEE REM. and the monitoring of the national Grid Codes implementation for the operation of national electricity markets, in compliance with the EU technical standards;

(6) Together with all the other actors, the achievement of the most efficient co-operation among the parties, by optimising mutual linkages and by avoiding possible overlapping tasks and duplicates.

3. SETSO TF ACHIEVEMENTS

So far, the SETSO TF met three times: in Rome on July the 26th, in Athens on October the 1st, in Belgrade on November the 5th, 2002. Hereafter, a brief summary of the most significant achievements is reported in a chronological way:

- The TOR document was shortly finalised, after discussions had during the 1st meeting in Rome, and was approved by both the ETSO SC and the SUDEL EC respectively in Prague on September the 13th, 2002 and in Pamporovo (BG) on November the 21st, 2002;

- A detailed list of comments on SEE Memorandum of Understanding and Strategy Paper documents was composed and made available to the EC, as requested, following contributions collected by email within the TF;

- In accordance with the organisational structure agreed within the approved TOR, two Sub Groups were created for handling more closely the most demanding technical activities of SETSO TF;

- The "Network Access. Congestion Management and Power Flows" (NACMPF) Sub Group was established in common with the former "Ring Flows" SG within SUDEL WG "Interconnection" and is mostly composed of experts already active in the mentioned SG. The NACMPF SG was internally given a two-branch structure, in compliance with the current and temporary operation of the SEE Electric System in 1st and 2nd UCTE Zone
and due to the peculiarity of the issues to be addressed within the two areas: the appointed Co-Convenors were Mr. W. HaimbI (APG-Verbund, AUT) and Ms. S. Mijailovic (EKC-FRY), respectively with reference to the 1st and 2nd UCTE zone, and Ms. B. Dekleva (ELES-SI) for issues more operationally oriented: while the first two Co-Convenors are required to report to the SETSO TF, the last one is going to report to the SUDEL WG "Interconnection". The mentioned organisational structure was closely agreed between ETSO and SUDEL with the aim to optimise human resources and time management and not to overlap tasks.

• The NACMPF SG met the first time in Wien on November 26th and defined the TOR document by merging competencies coming from both ETSO and SUDEL sides. Concerning activities, the SEE TSOs agreed to start the weekly network data exchange for Weekly Ahead Congestion Forecast (WACF) on February the 1st, according to UCTE/SUDEL operational procedures; also, under the umbrella of UCTE/SUDEL, the preliminary and virtual calculations concerning the reconnection of the two UCTE zones are about to be performed and a report in this respect is going to be shortly finalised: finally, two surveys via questionnaire were decided to be undertaken with the aim to investigate firstly the Data Publication and Transparency on the SEE TSOs Web Sites together with the relevant possibility to co-ordinate that ones with the central ETSO Web Site, and secondly the current status of State Estimation, NTC calculations and Congestion Forecast within SEE Region;

• The "Cross Border Tariffs" (CBT) Sub Group defined its membership and is about to finalise the TOR document: Mr. S. Brkic (HEP-CR) was appointed as SG Convenor and a first SG meeting is expected by February 2003. The proposal of a temporary SEE CBT mechanism, to be submitted to all the involved parties, is desirably supposed to be drafted in a few months and the relevant guidelines could be hopefully presented during the next SEEERF-Athens Process meeting in March 2003;

• The "Confidentiality Agreement among ETSO Members and associated Members and the non-ETSO Members of TF SETSO-regarding confidentiality rules for the exchange of information among TSOs within ETSO and SETSO", already agreed among the TF members and signed on the ETSO side, is expected to be signed by all the interested TSOs during the next TF meeting in Rome on January the 17th;

• An informative questionnaire, based on a formerly used ETSO format, was agreed to be filled-in, in order to work out a survey on the SEE electricity sector evolution and TSOs organisation; a first report will be finalised by the next TF meeting in Rome on January the 17th.
NEEDS ASSESSMENT

2003 Phare National Programme

Regarding: “Creation of operating means for Transmission System Operator in relation to the administration of a competitive electricity market”

In relation with the finalization of the negotiating process between Bulgaria and EC on Chapter 14 “Energy” and implementation of the European Directive 96/92 and its amendments a New Energy Act is expected to come into force during the first half of 2003. It will introduce a new concept on power market, moving from a single buyer model to a model of bilateral contracts and a balancing market. The new Energy Act will regulate the new relations between the market participants in a new market environment and will define a new role and responsibilities of the TSO and Regulatory Commission.

The implementation of the New Energy Act and its Regulations according to European Directive 96/92 will impose the unbundling of NEK (National Electricity Company) and separation of the system management and transmission activities from the trading of electricity. An Electricity Market Operator (EMO) will be established as a specialized part of TSO. The EMO shall administrate BM and shall be responsible for the settlement of market participants. The implementation of these activities does not envisage any profit, so financing of the EMO will be realized by the TSO budget, provided from transmission tariff. As a non-profit institution TSO will have no possibility to pay back for loans and this is the reason why our project is seeking financing from Phare Programme.

The Board of Directors of NEK approved the following organizational structure of the Electricity Market Operator, which will be an accounting unbundling unit in the structure of NEK until the legal separation in 2005:

The proposed project “Creation of operating means for Transmission System Operator in relation to the administration of a competitive electricity market” contains two project tasks:

- “Development of a methodology on load profiling for eligible customers as to their participation in the open market”;
- “Development, procurement and commissioning of specialized software and hardware for the TSO”.

![Organizational Structure Diagram]
An essential precondition for the successful realization of the second task is the development of Technical Specifications with the assistance of a consultancy team. The Technical Specification shall specify requirements regarding the specialized software and hardware for the MO. Detailed investigations of the software market have to be done and also the experience of other countries in power market management has to be taken into consideration. According to our preliminary survey of software markets leading world producers of power market software are Alstom, ABB, IRM, APX and Caminus.

Regarding the total amount of 2.3 MEURO for realization of the two project tasks, we consider that it corresponds to the expenses described below:

- **Technical Assistance Contract (Lot 1 – 0.3 MEURO) for:**
  - *Overview of the load profiling practices in the electricity markets in other countries;*
  - *Allocation of the types of customers in several groups according to the load characteristics and development of a methodology for defining their load profiles taking into account variable external factors (for instance temperature, typical days of the week, etc.);*
  - *Pilot determination of the load profiles of a selected group of customers.*

- **Technical Assistance Contract (Lot 2 – 0.8 MEURO) for:**
  - *Preparation of Technical Specification for delivery of a specialized software and hardware;*
  - *Supervision on the adaptation of the software toward the Market Rules requirements and installation the equipment; training of TSO specialists.*

- **Supply Contract (1.2 MEURO - including 0.4 MEURO national co-financing) for:**
  - *Delivery, installation and test operation of the software and hardware.*

After development of Technical Specification and investigations of the software market, the amount for conclusion of a Supply Contract (1.2 MEURO) could be corrected.

**ANNEXES TO NEEDS ASSESSMENT**

1. Detailed breakdown of Software and Hardware Costs.
### Annex 1: Detailed breakdown of the Software and Hardware Costs

<table>
<thead>
<tr>
<th>Item</th>
<th>Category</th>
<th>Units</th>
<th>Unit Price, Euro</th>
<th>Total Price, Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hardware including:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Database server</td>
<td>1</td>
<td>100 000</td>
<td>100 000</td>
</tr>
<tr>
<td>B</td>
<td>Application server</td>
<td>1</td>
<td>40 000</td>
<td>40 000</td>
</tr>
<tr>
<td>C</td>
<td>WEB server</td>
<td>1</td>
<td>30 000</td>
<td>30 000</td>
</tr>
<tr>
<td>D</td>
<td>PC Workstation</td>
<td>4</td>
<td>7 500</td>
<td>30 000</td>
</tr>
<tr>
<td>E</td>
<td>Storage network attached storage (NAS)</td>
<td>1</td>
<td>60 000</td>
<td>60 000</td>
</tr>
<tr>
<td>F</td>
<td>LAN including Cabling system, Switches, routers and hubs, Firewalls</td>
<td>1</td>
<td>100 000</td>
<td>100 000</td>
</tr>
<tr>
<td>G</td>
<td>UPS</td>
<td>4</td>
<td>3 000</td>
<td>10 000</td>
</tr>
<tr>
<td>H</td>
<td>Other peripheral devices</td>
<td></td>
<td></td>
<td>30 000</td>
</tr>
<tr>
<td>2</td>
<td>Software – different packages for</td>
<td></td>
<td></td>
<td>800 000</td>
</tr>
<tr>
<td></td>
<td>Scheduling - Energy, transmission rights, and ancillary services with automated validation and real-time evaluation;</td>
<td>1</td>
<td>800 000</td>
<td>800 000</td>
</tr>
<tr>
<td></td>
<td>Transmission Administration – Contracts, commercially significant constraints; continuous evaluation, curtailment management and notification;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acquisition, checking, processing and storage of electric meter data for each period of settlement;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Acquisition, ranking and storage of offers and bids for the Balancing Market;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Application of merit orders for the acceptance of balancing energy sources;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Imbalances (Calculation of imbalance prices and settlement), penalty structures, grid usage and uplift charges, and dispute resolution;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Associated settlement and billing functions, invoicing, checking and permanently calculation of the financial obligation of the participants towards BM, links with bank guarantees and deposits accounts, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Web Site Portal - Public information, participant alerts, portal solutions, grid information, and tariff publication and operational protocol documentation;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Security - Encrypted communications;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The SW should be design to cover the Green Energy certificates trade when it starts in Bulgaria.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Grand total, appr.</td>
<td></td>
<td></td>
<td>1 200 000</td>
</tr>
</tbody>
</table>
Annex 2

Structure of the Information Flows Exchange for Market operation

- **Market Participants**
  - IP – Independent Producers;
  - EC – Eligible Customers;
  - MO – Market Operator

- **EMO**
  - Trading, accounting....

- **WEB**

- **Despatching**

- **Measuring**

- **NEK**
  - Trading, accounting....

- **BANK**

- **TSO**
### Annex 3

#### Market Operators Budget Overview

<table>
<thead>
<tr>
<th>Name</th>
<th>State</th>
<th>Description</th>
<th>Year</th>
<th>Amount/Local Currency</th>
<th>Amount/Currency</th>
<th>Internet address</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>2000</td>
<td>AUD 20 734 009</td>
<td>€ 12 363 750</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2001</td>
<td>Mil. Peso 15 637</td>
<td>$ 6 824 868</td>
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