1. Basic Information

1.1 CRIS Number (year 1):

1.2 Title: Improvement of the Conditions for Cross Border Electricity Trade in Turkey in Compliance with the Best Practice in EU

1.3 Sector: Energy

1.4 Location: The Republic of Turkey, Turkish Electricity Transmission Corporation (TEIAS)

1.5 Duration: 18 months

2. Objectives

2.1 Overall Objective

The overall objective is to fully integrate the Turkish Electricity Market to the EU Internal Electricity Market.

2.2 Project Purpose

The purpose of the project is to improve the conditions for the functioning of cross-border electricity trade in Turkey by removing administrative and legislative obstacles.

2.3 Accession Partnership and NPAA Priority

AP – Chapter 4 (Priorities)

Short term:

- Ensure the establishment of a competitive internal energy market, in compliance with the electricity and gas directives.

- Support the creation of a gradually integrated regional energy market as a part of wider European energy market. Remove restrictions on the cross-border trade in energy and third party access.

Medium term:

- Restructure energy utilities and open up energy markets in conformity with the acquis, further strengthen administrative and regulatory structures.

The NPAA (Chapter 14) specifies in the field of energy:
• **PRIORITY 14.1:** Full alignment with the internal energy market

• **Task 14.1.2:** Remove restrictions on the cross-border trade in energy

• **Task 14.1.3:** Ensure the establishment of a competitive internal energy market, in compliance with the electricity and gas directives.

### 2.4 Contribution to National Development Plan

The “Preliminary National Development Plan” which has been prepared by the State Planning Organization, depicts as follows as regards electricity sector reform:

“The Electricity Market Law was enacted on 3 March 2001 with a view to forming a market having rules as transparent as possible to gain the confidence of the investors and envisaged to be regulated by an independent Energy Market Regulatory Authority (EMRA). The Law aims to set up a structure where the private sector could operate freely by allowing competition in the sector, and thus to establish a reliable and stable market by compensating financial shortcomings in the public sector. Under the Electricity Market Law, the new fields of activity are defined by removing the public monopoly over the sector, and the deepening of the market is envisaged. In this context, the new fields of activity have been created in the sector, namely, generation, distribution, wholesale and retail sale, and imports/exports, each of which are subject to licensing by EMRA. However, the public monopoly continues in the field of transmission.”

The Preliminary National Development Plan also refers to the activities for fully integrating the Turkish electricity market to the EU internal electricity market as “in line with the ultimate aim of interconnecting national electricity market to the EU internal energy market, activities are underway to enable the synchronous parallel operation of Turkish power system with the UCTE system”.

### Reference to the Multi Annual Programme (MAP)

For the year 2005, “Support for activities ensuring the enhancement of a competitive internal energy market in compliance with the Electricity Directive” has been adopted as Objective 5 and “continued support for preparatory activities facilitating cross-border trade in energy” as Objective 3 for the energy sector in the Multi Annual Programme.

### 2.5 Cross Border Impact

The connection of Turkish power system to the UCTE (Union for the Coordination of Transmission of Electricity) network, which is still underway, will ensure the integration of Turkish power system at first to the Southeast Europe Electricity market and then to the EU internal electricity market as it was also envisaged by the MoU on Regional Energy Market in Southeast Europe and its Integration into the European Community which was signed on December 8, 2005.

Such integration will create the proper conditions for cross border electricity trade and have impacts not only on the local electricity market but also on the entire EU internal electricity market.
Furthermore, such integration will contribute to establishing a well functioning electricity transmission system and electricity market operation and management structure in Turkey.

Therefore, the improvement of the operation and maintenance performance of Turkish electricity transmission system and organization of the electricity market operation and management structure in accordance with the best practice in EU are the main objectives of this project.

3. Description

3.1 Background and Justification

The willingness to encourage private investment and to harmonise with EU legislation led the government to enact the Turkish Electricity Market Law, which came into force on 3 March 2001 (Law No. 4628). The Law concentrates mainly on defining the sector’s new structure and the status of the power sector actors, including restructuring and unbundling of utilities. The Electricity Market Law envisages the establishment of an autonomous Energy Market Regulatory Authority (EMRA), governed by the Board.

Energy Market Regulatory Authority has started to work immediately after the appointment of its Board on 19 November 2001. The studies for the preparation of the necessary secondary legislation are mostly completed and also issued by the EMRA through consultation with the all parties in the market.

The unbundling of Turkish Electricity Generation and Transmission Corporation (TEAS) by separating its generation, transmission and wholesale functions was completed by 1 October 2001 and new public utilities; Electricity Generation Corporation (EUAS), Turkish Electricity Transmission Corporation (TEIAS) and Turkish Electricity Contracting and Trade Corporation (TETAS) were established and started to work by this date together with the existing public utility, Turkish Electricity Distribution Corporation (TEDAS).

TEIAS is the state owned transmission company serving as the transmission system operator and the market operator. Holding the ownership of all transmission assets, TEIAS is responsible to take over the ownership of all state-owned transmission facilities; preparation and execution of transmission investment plans; operating, repairing and maintaining the national transmission system; providing transmission services on a non-discriminatory basis; safeguarding system access rights; preparing generation capacity projections; operation of the wholesale electricity market; procurement of ancillary services; preparation of transmission and connection tariffs; and execution of international interconnection studies. In addition, TEIAS is also authorized to draft secondary (regulations) and tertiary (communiqûé) legislations related to its above listed responsibility areas and get approval from Energy Market Regulatory Board. The restructuring of TEIAS to ensure its adaptation to the new market conditions is still underway.

These responsibilities also indicate that, TEIAS; as the transmission system operator and market operator, is the backbone of the electricity market and has the main responsibility of providing services for a well functioning and uninterrupted transmission system in which an available infrastructure is established and being upgraded dynamically, operation, maintenance and reparation services are being provided in accordance with the instructions which are prepared by itself.
TEIAS has to perform its tasks, conscious that any failure in the operation of the transmission system as a consequence of loss of any transmission line or any transformer substation will cause some generators and wholesalers to earn more income and on the other hand for some generators and wholesalers to lose income, implying a distortion of competition in the electricity market.

The interconnection of Turkish power system with the Union for the Coordination of Transmission of Electricity (UCTE) power system which is the one of the main goals of Turkey, took place in agenda for long years starting from first 400 kV link with Bulgaria was commissioned in 1975, that afterwards, the second 400 kV link with Bulgaria was completed in September 2002. Additionally, a Memorandum of Understanding was signed on 28 March 2002, in Ankara, for the construction of Babaeski–Filippi 400 kV connection line between Greece and Turkey, which is the third line between Turkey and UCTE countries, and projected to be completed by the end of 2006. The necessary funds for the construction of the Turkish segment (about 50 km) were secured through a World Bank loan.

After the application of Greece Public Power Company (PPC), on behalf of former Turkish Electricity Generation and Transmission Corporation, TEAS (then TEIAS) to UCTE for membership and interconnection on March 21st, 2000, the UCTE Steering Committee took a decision on April 26th, 2000 to consider and evaluate all possibilities for the synchronous interconnection of the Turkish power system to the UCTE power system. Within this context, for the purpose of determining the technical conditions under which the Turkish power system may be synchronized with the UCTE power system, a project titled “Complementary Technical Studies for the Synchronization of the Turkish Power System with the UCTE Power System” has been adopted and financially supported by the European Union through Pre-Accession Financial Programme 2003. The aim of the Project is to ensure the determination of power exchange capacity between the Turkish Power System and the UCTE Power System, identification of the technical risks and possible counter-measures, and monitoring the Turkish Power System by the UCTE, as required by the UCTE procedures. For the commencement of the project under the coordination of UCTE, following the submission to the European Commission Delegation in Turkey and getting the approval, the Service Contract was signed in Brussels on September 28, 2005 between UCTE and Central Finance and Contracts Unit (CFCU) and the kick off meeting in order to start the studies was held in Istanbul on November 8, 2005 with the participation of respective TSO’s.

The two Athens Memorandums, in which both of them Turkey was the adhering party, was renamed as Energy Community of Southeast Europe (ECSEE) and the adhering parties to ECSEE are obliged to align their national legislations with the relevant EU acquis, and to facilitate the establishment of the well functioning regional energy market through their well functioning transmission systems operating in compliance with UCTE rules and regulations on the other hand.

In this respect, the full integration of the Turkish electricity market into the EU Internal Electricity Market requires not only alignment of the national legislation concerning the electricity market with the relevant EU acquis but also the synchronous parallel operation of the Turkish power system with the European electricity transmission network, the UCTE network in full compatibility with the UCTE technical standards and requirements.
Therefore, the above mentioned complementary technical studies will constitute the first phase of the integration process with UCTE power system by indicating the requirements for the establishment of adequate technical infrastructure in Turkish power system.

In parallel to the determination of the technical conditions for the synchronized interconnection, improvement of the frequency control performance of the Turkish Power System to the level required by the UCTE, was also necessary and constitutes the second phase for the commencement of synchronized parallel operation of the Turkish Power System with the UCTE power system. Therefore, the Project titled as” Improvement of the Frequency Performance of the Turkish Power System in Accordance with the UCTE Criteria” (the 2004 Project) was approved to be supported within the 2004 Pre-Accession Financial Cooperation Programme between Turkey and EU. In order to commence the project activities, the Operational Agreement was signed between CFCU and TEIAS. At the present stage, TEIAS has completed the procurement of the necessary test equipment to carry out the tests and Terms of Reference document has been prepared and submitted to CFCU for review.

The connection of Turkish power system to the UCTE network may have impacts not only on the local power systems but also on the entire UCTE system. This project, in this respect, will ensure the compliance of the frequency control performance of the Turkish power system with the UCTE criteria which will enable Turkey to be safely interconnected to the UCTE system via tie lines between Turkey and Bulgaria as the first step and between Turkey and Greece, as the second step, without any negative impact on the other power systems. Such physical interconnection constitutes an essential step towards achieving the full integration of the Turkish energy market into the EU internal energy market.

The establishment of the adequate technical infrastructure and the improvement of the frequency control performance of Turkish power system are the prerequisites for the interconnection with UCTE system and participation to the regional market, but for ensuring the well functioning of both national and regional power systems, improvement of the operation and maintenance performance of the Turkish transmission system has great importance and constitutes the third important phase. Because, ensuring the uninterrupted supply of electricity is directly dependent on the operation and maintenance performance of the transmission system. Additionally, the operation and maintenance performance of the transmission system has direct impact on the establishment of the competitive and fair electricity market at national and regional level.

As it is well-known, operation and maintenance performance of a transmission system operator is directly dependent on the design characteristics implemented in the relevant transmission system, transmission system operator’s technical and administrative capabilities and documentation capacity in which comprehensive regulations are developed and implemented.

At the present stage, TEIAS does not have any experience in live maintenance of the transmission system and respective equipment.

These facts and responsibilities undertaken in the electricity market have lead TEIAS to propose an in-depth review of the transmission system of Turkey and TEIAS’s performance in this respect by experienced bodies in this field in EU.

Existing legislation on the electricity market in Turkey determines the provisions mostly for the functioning of the internal market. There are provisions only for electricity import and export in
the existing legislation but the rights such as the rights for the eligible customers to choose their suppliers from outside of Turkey are not included.

Therefore, new arrangements on the existing electricity market legislation have to be done to include the provisions for cross-border exchange of electricity as being the part of a regional electricity market.

In parallel with these legislative arrangements additionally the arrangements related with the market operation and market management structure have to be done. It is very clear that, all these arrangements have to be in compliance with the provisions of EU internal market and best practices in EU.

In addition to the establishment of compatible technical infrastructure, improvement of the frequency control performance and the operation and maintenance performance of Turkish transmission system in compliance with the UCTE rules and regulations, the new arrangements are to be completed on the electricity market legislation and the market operation and market management structure, involving the cross border electricity trade in compliance with the EU internal market, which will be last phase to become a part of the regional market.

Taking into consideration these requirements, TEIAS decided to propose the project titled as “The Improvement of the Conditions for the Functioning of Cross Border Electricity Trade in Turkey in Compliance with the Best Practice in EU” consisting of two different tasks: one for the improvement of the operation and maintenance performance of Turkish electricity transmission system and the other one for the new arrangements on the existing Turkish electricity market legislation and the market operation and management structure to commence cross border electricity trade.

All the above mentioned studies have to performed and completed in a timely manner to ensure the physical synchronous interconnection with UCTE power system and to initiate the cross border electricity trade also in a timely manner.

On the basis of the European Transmission System Operators (ETSO) proposal, the second Athens Process Forum delivered its firm commitment for a period of six months on a virtual test basis (‘dry-run simulation’) in order to introduce the Cross Border Trade (CBT) mechanism in Southeast European countries on January 1st 2004. As an adhering party, although sharing the objectives of the “Athens Memorandum on the establishment of the Regional Electricity Market in South Eastern Europe and its integration into the European Community Internal Electricity Market”, Turkey is not included in this “virtual trial” as well as real trial process, since Turkish Power System is not synchronously operated with the remaining part of the region. Therefore, TEIAS is in urgent need to establish synchronous interconnection with UCTE, improve its operation and maintenance performance and make necessary arrangements in its existing electricity market legislation, market operation and market management structure in compliance with the best practice in EU.

3.2 Sectoral Rationale

Not applicable.
3.3 Results

3.3.1 Project

The improvement of the conditions for the functioning of cross border electricity trade in Turkey in compliance with the best practice in EU.

3.3.1.1 Purpose

The purpose of the project is to improve the conditions for the functioning of cross-border electricity trade in Turkey by removing technical, administrative and legislative obstacles.

3.3.1.2 Results/Outputs

The activities, described in section 3.4, which shall be carried out under the project, are expected to lead to the following results:

1. The operation and maintenance performance of the Turkish electricity transmission system improved and the necessary equipment defined.

2. Existing legislation, market operation and management structure modified in conformance with the best practices in EU.

3.4 Activities/Inputs

The Project consists of two tasks one of which is improving the technical performance of the Turkish transmission system regarding the existing infrastructure, operation and maintenance capabilities and the other one is making new arrangements on the existing Turkish electricity market legislation, market operation and management structure to reach an appropriate level of services to be ensured for the whole regional market participants regarding the cross border electricity trade.

Task 1: Improvement of the Operation and Maintenance Performance of Turkish Transmission System.

Within the scope of this task the following activities will be performed:

• Investigation and evaluation of the existing infrastructure of the Turkish transmission system including the design characteristics which affects the operation and maintenance performance of a transmission system operator.

• Investigation and evaluation of the existing operation and maintenance performance of TEIAS including the regulations and instructions, in this respect.

• Comparison of the outcomes obtained with the best practice in EU.
• Determination of the recommendations regarding above mentioned issues including the live maintenance to be implemented by TEIAS.

• Identification of the equipment necessary for the live maintenance.

• Training relevant TEIAS staff on these issues both in one of the EU countries having the best practice and on site in Turkey.

Task 2: Development and/or Improvement of Legislative Framework and Administrative Capacity in Turkish Electricity Market Regarding the Cross Border Electricity Trade.

Within the scope of this task, the following activities will be performed:

• Review and evaluation of the existing Turkish electricity market legislation regarding the legislation on cross border trade of electricity in EU internal market.

• Investigation and evaluation of the existing market operation and management structure in Turkey.

• Comparison of the outcomes obtained with the respective EU legislation, market operation and management structure, and the implementations in EU countries.

• Determination of the recommendations on the above mentioned issues including the arrangements on the existing Turkish electricity market legislation, market operation and management structure.

• Training of the relevant TEIAS staff on the market operation and management systems, cross border electricity trade transactions.

3.5 Linked Activities

There are a number of linked activities supported by the European Commission, the World Bank or internally pursued which are completed, planned or underway:

3.5.1 EU Activities

• The European Commission, with a view to creating a regional energy market, brought forward proposals for the creation of a regional electricity market in Southeast Europe in March 2002. In November 2002, a Memorandum of Understanding called as “the Athens Memorandum” was signed in order to open up the signatory countries’ electricity markets, afterwards the Athens Process was driven to expand in order to include gas markets into the regional energy market integration by the second Athens Memorandum in December 2003, for further integration of both energy sectors into the EU internal electricity market. The Athens Process, now ECSEE, aiming to ensure long-term viability and better integration of the system, to increase reliability of supply and to create opportunities for investments, involves opening of access for cross border trades in electricity and gas sectors. Hereby, the process is supported by Turkey who has signed two Memorandum of Understandings.
“Feasibility and Evaluation Study of the Electricity Interconnection of Turkey with Greece, Balkan Pool and UCTE” partially financed by TEN; completed.

“Stability Study for the Synchronously Interconnected Operation of the Electricity Networks of UCTE/CENTREL, Bulgaria and Romania”, financed by TEN; completed.

Euro Mediterranean regional project “Euro Mediterranean Energy Forum- Support to the Ad Hoc Groups” financed through MEDA Programme; for supporting the three Ad Hoc groups, Energy policy, Economic Analysis and Interconnections which were created according to the action plan of Euro Mediterranean Energy Forum, to achieve their objectives; in progress.

Euro Mediterranean regional project “MEDRING”, for the technical and economical assessment of the interconnection of the electricity transmission networks of the Mediterranean countries, financed through MEDA Programme; in progress.

“Complementary Technical Studies for the Synchronization of the Turkish Power System with the UCTE Power System” project supported within the 2003 Pre-Accession Financial Cooperation Programme between Turkey and the EU; for determining the technical conditions under which the Turkish power system may be synchronized with the UCTE power system; in progress.

Improvement of the Frequency Performance of the Turkish Power System in Accordance with the UCTE Criteria” project supported within the 2004 Pre-Accession Financial Cooperation Programme between Turkey and EU; for improving the frequency control performance of the Turkish power system to the level required by the UCTE for the commencement of synchronized parallel operation of the Turkish power system with the UCTE network; in progress.

3.5.2 World Bank Activities

National Transmission Grid Project. Financed from the World Bank loan in the amount of USD 230 million. Covers restructuring of the sector and also the construction of transmission facilities, including the Turkish part of the 400 kV Turkey-Greece interconnection line; in progress.

A new “Renewal and Extension of Turkish National Load Dispatch System Project “ was signed in 2001 between TEIAS and Siemens, which is financed from World Bank loan in the amount of USD 20 million. Siemens has established new SCADA System which includes hardware and software in the National Control Centre. It is completed in 2004.

3.5.3 Internal Activities

The following projects were carried out by TEIAS in collaboration with TUBITAK-BILTEN (The Scientific and Technical Research Council of Turkey – Information Technologies and Electronics Research Institute):

System Studies for interconnection of Turkish Electric System to The Balkan Countries and UCTE; completed.


The TUBITAK-BILTEN project revealed that the frequency control performance of Turkish power system can be improved to the level required by UCTE through the realization of a more detailed and comprehensive study involving the optimization of the system as a whole and dynamic performance analysis for each unit of the selected power plants that will participate in frequency control operation.

3.6 Lessons Learned

The past experience of UCTE with previous system extensions (such as to CENTREL and former Yugoslavia) proved that, prior to any system extension, detailed studies have to be conducted in order to eliminate possible negative impacts of the new interconnection on the security of systems in the vicinity as well as the entire UCTE system. On the other hand, Turkey was obliged by the ECSEE to align her national legislation with relevant EU legislation and to facilitate the establishment of a well functioning regional energy market through a well functioning transmission system operation in compliance with UCTE rules and regulations. In this respect, the studies for the interconnection with the UCTE power system were accelerated and as a preliminary step, static and stability studies under the “Complementary Technical Studies for the Synchronization of the Turkish Power System with the UCTE Power System” were commenced to ensure the determination of power exchange capacity and identification of the technical risks and counter-measures, which are of vital importance for defining the technical conditions under which the Turkish power system may be synchronized.

As mentioned above, the projects collaboratively carried out by TEIAS and TUBITAK in relation with the “System Studies for Interconnection of Turkish Electric System to The Balkan Countries and UCTE”, are “Study of Situation Determining for Primary Frequency Control and System Frequency Performance Tests, in 2002” and “Primary Frequency Control Performance Tests and the Statistical Analysis of Line Frequency, in 2003”. These studies pointed out that the frequency control performance of the Turkish power system could be improved to the level required by UCTE with the help of a more detailed and comprehensive study. Therefore, following the initiation of the process for the establishment of adequate technical infrastructure, studies in connection with the “Improvement of the Frequency Performance of the Turkish Power System in Accordance with the UCTE Criteria” Project, was also necessary to improve the quality of the frequency control performance. These two projects constitute two substantial pillars to enable Turkey to be safely interconnected to the UCTE system and an essential step on the way of achieving full integration of the Turkish energy market into EU internal energy market. In this respect, in order to ensure well functioning national and regional power systems, the project aiming to improve the operation and maintenance performance of the Turkish transmission system was envisaged.

Furthermore, in order to benefit from the synchronous interconnection, the electricity market legislation should be modified to include enough reference to cross border electricity trade.

4. Institutional Framework

TEIAS performs its activities under the organizational structure composed of a head office situated in Ankara and the regional units such as 19 regional transmission networks, construction
and management directorates and one central (national) and 8 regional load dispatch centre directorates. The current organizational chart of TEIAS is given as Annex 4.

The results of the project will not affect the existing institutional framework as described above.

The beneficiary of the project is the TEIAS, and the project is planned to be performed under the supervision of the Steering Committee composed of General Manager, Deputy General Manager, Head of Electricity Market Services & Financial Settlement Department, Head of Transmission Networks Operation & Maintenance Department, and the coordination of the groups headed by the heads of relevant departments which follow up the Project Implementation activities. Composition of the coordination groups is presented in the scheme in Annex 5.

4.1. Twinning:

4.1.1 Twinning contact person

The contact person for the Twinning Covenant and contact details:
Mr. Halil ALIŞ, Deputy General Manager of TEIAS, İnönü Bulvarı No:27 Ankara, Turkey.
Tel: +0090-312-222 81 91
Fax: +0090-312-215 98 04

4.1.2 Introduction/Background on the Twinning and Training Package

The project will be implemented in the form of a Twinning contract between Turkey and a Member State/Member States. The overall duration of the project is envisaged to be 23 months with activities to take place during the 18 months. The Twinning partner(s) will manage all aspects of execution in close cooperation with the TEIAS. The Twinning partner(s) will provide a Resident Twinning Advisor (RTA) and also secure a pool of short-term experts, who will be called upon whenever necessary to contribute to the achievement of the mandatory results and especially for the purpose of advisory services and training according to the work plan.

The EU Twinning advisors will work together with the staff of the beneficiary institution under the overall direction of the beneficiary institution and the Project Steering Committee. In addition to providing the twinning partner with adequate staff and other resources to operate effectively, the senior management of the beneficiary institution is expected to be involved in the development and implementation of policies and institutional change required to deliver the project results.

Member State may form a consortium which will cover a wide range of qualified senior experts gathered from public administrations or mandated bodies from up to two Member States and provide the harmonisation of national approaches within this consortium.

4.1.2.1 Expert input:
1. PL (Project Leader):
The PL should be a high ranking official with broad knowledge of all processes in the field of transmission system and market operation that the project deals with, who will continue to work and devote some of his/her time to conceive, supervise and co-ordinate the overall thrust of the Twinning project.

a) Qualifications:

- Broad long-term knowledge of all processes in the field of legislation that the project is dealing with;
- Overall appreciation of the problems and solutions in the sector;
- Capable of unblocking any problems at highest level;
- Good leadership skills.

b) Tasks:

- Overall project co-ordination;
- Mobilizing short term experts;
- Executing administrative issues (i.e. signing reports, administrative order etc.).

2. Resident Twinning Advisor (RTA):

a) RTA background

RTA expert on transmission system and market operation will provide advice and technical assistance to the TEIAS in improving operation and maintenance performance and modification of management structure for 18 months. The RTA is expected to co-ordinate to all project activities. He will be located at the TEIAS, Ankara. He/she has to be a person with significant experience as a manager and should have a capacity for initiating new projects.

The RTA must be highly qualified in the field of transmission system and market operation and good management skills.

b) RTA Qualifications

- Minimum of 5 years experience in the transmission system at managerial/expert etc. level.
- Familiar with TSO’s in EU countries with particular emphasis on institutional set-up and implementation.
- Experience in project management,
- Experience in the participation of a legislative process,
- Advanced university degree,
- Knowledge of written, oral and inter-personal communication skills in English;
• Good communication skills and experience in developing, coordinating and conducting training programmes;
• Experience in managing a large team of experts;

c) RTA tasks

• To design a work plan for the implementation of the programme and to assist the process of drawing up a contract;
• Assist in the preparation of all strategic project documents [inception study, sector strategy/policy/plan, quarterly monitoring reports, final project report, training manuals etc.]
• To ensure continuity of implementation through: the execution of the day to day management; working on a daily basis with the TEIAS staff to implement the project;
• To plan and coordinate outputs;
• Together with the Project Leader: to nominate and mobilize the short term experts;
• To supervise the short term experts;
• To ensure proper quality of outputs;
• To provide detailed reports on the impact of the project.

3. Short-term experts

a) Experts’ qualifications
Minimum of 3 years professional experience in their respective field,

• University degree in a relevant subject;
• Professionally qualified and have the appropriate experience in the area and subjects that they are selected for.
• Good written and oral command of English (or other community language);
• Proven contractual relation to public administration or mandated body;
• Capacity to integrate into a large expert team;
• Willingness to work in a different cultural environment.

b) Experts’ tasks

• To contribute to the project with specialist knowledge in the field of transmission system operation and market operation and management,
• To provide assistance to RTA on implementing the project activities.

5. Budget (Indicative)

<table>
<thead>
<tr>
<th>Project Components</th>
<th>EU Support</th>
<th>National Co-Financing</th>
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<tr>
<td>Investment Support</td>
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<td>Total(€)</td>
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These prices are currently estimated according to the counselling services.

6. Implementation Arrangements

6.1. Implementing Agency

The CFCU will be the implementing agency and will be responsible for all procedural aspects of the tendering process, contracting matters and financial management, including payment of project activities. The Director of the CFCU will act as Program Authorising Officer of the project. His contacts are:

Mr. Muhsin ALTUN
Programme Authorising Officer
Central Finance and Contracts Unit
Tel: +90 312 472 37 00
Fax: +90 312 472 37 44

6.3 Non-standard aspects

Not applicable.

6.4 Contracts

Twinning covenant 1.380.000 EUR

7. Implementation Schedule

<table>
<thead>
<tr>
<th>Twinning</th>
<th>Start of tendering</th>
<th>Start of project activities</th>
<th>Project completion</th>
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<tr>
<td></td>
<td>3rd quarter 2006</td>
<td>2nd quarter 2007</td>
<td>3rd quarter 2008</td>
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8. Equal opportunity

Equal opportunity principles and practices in ensuring equitable gender participation in the project will be guaranteed. Male and female participation in the project will be based on the relevant standards of the EU. The main criteria for staff recruitment will be appropriate qualifications and experience in similar projects, not sex or age. Both men and women will have equal opportunities and salaries.
9. Environment
Not applicable, since this project deals only with the improvement of technical infrastructure, operation and maintenance performance of transmission system and does not require major modifications at the existing physical structure of the transmission system.

10. Rates of return
Not applicable

11. Investment criteria
11.1 Catalytic Effect
This project will provide a fresh impetus for the improvement of technical infrastructure and operation and maintenance performance, development and implementation of legislations and rules for cross-border trading. The activities will focus on the determination of system requirement, comparison with EU countries, development of required solutions and training of TEIAS staff, investigation and analyses of existing legal frameworks regarding cross-border trade of electricity in Turkey and in EU countries. This would directly improve the establishment of a competitive internal energy market, in compliance with the electricity and gas directives.

11.2 Co-Financing
Not applicable.

11.3 Additionality
This project is not a substitute for grant funding from other public or private sector sources.

11.4 Project readiness and size
Not applicable

11.5 Sustainability
Through the training component of the project, a pool of well-informed, knowledgeable and experienced national staff and energy sector experts will be created who can carry on future training activities on cross-border electricity trade and improvement of technical infrastructure operation and maintenance performance.

11.6 Compliance with state aids provisions
Not Applicable

12. Conditionality and Sequencing
Not applicable
ANNEXES TO THE PROJECT FICHÉ

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. Current organization chart of TEIAS
5. Project organisation.
6. Reference List of Relevant Laws and Regulations
7. Reference List of Relevant Strategic Plans and Studies
### Logical Framework Planning Matrix

<table>
<thead>
<tr>
<th>Programme name:</th>
<th>The Improvement of the Conditions for the Functioning of Cross Border Electricity Trade in Turkey in Compliance with the Best Practice in EU.</th>
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<td>November 2005</td>
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<th>Phare contribution (MEUR)</th>
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| Sheet no. | 1 |

### Intervention logic

#### Overall objectives:
- To fully integrate the Turkish electricity market to the EU Internal Electricity Market.

#### Objectively verifiable indicators
- Commercial and physical electricity exchanges take place between Turkey and EU Member States

#### Sources of verification
- Reports of EMRA
- Annual reports of TEIAS
- Annual reports of UCTE
- Reports of DGTREN

#### Assumptions
- Modified law approved by the Parliament
- Modified secondary legislation approved and issued by EMRA
- Satisfactory operation of synchronized parallel interconnection with UCTE power system

### Project purpose:
- To improve the conditions for the functioning of cross border electricity trade in Turkey by removing administrative and legislative obstacles.

#### Objectively verifiable indicators
- Modified legislation is in place
- Revised maintenance and operation instructions and procedures is in place
- Uninterrupted supply of electricity ensured in addition to the decrease in rates of failure due to the modifications on design characteristics which effect the operation and maintenance performance of the transmission system

#### Sources of verification
- Periodical Maintenance Reports of TEIAS
- Operation Reports of TEIAS
- Maintenance and operation instructions
- Annual Report of EMRA
- Annual report of TEIAS
### Intervention logic

**Results:**

1. The operation and maintenance performance of Turkish electricity transmission system improved and necessary equipment to be procured by TEIAS identified.

   - *TEIAS is capable live maintenance*
   - *System failures have been substantially reduced*

2. Existing legislation, market operation and management structure modified in conformance with the best practice in EU.

   - *Administrative and legislative infrastructure modified to include the relevant issues for cross border electricity trade*

<table>
<thead>
<tr>
<th>Intervention logic</th>
<th>Objectively verifiable indicators</th>
<th>Sources of verification</th>
<th>Assumptions</th>
</tr>
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<tbody>
<tr>
<td>Results:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>The operation and maintenance performance of Turkish electricity transmission system improved and necessary equipment to be procured by TEIAS identified.</td>
<td>Reports of National Load Dispatch Centre Progress Reports Operation Reports Periodical Maintenance Reports Failure Reports Stock Reports Procurement Documents Budget and Cost Reports Investment Reports</td>
<td>Technical capability of TEIAS is improved</td>
</tr>
<tr>
<td>2.</td>
<td>Existing legislation, market operation and management structure modified in conformance with the best practice in EU.</td>
<td>Reports of EMRA Annual report of TEIAS</td>
<td>Administrative capacity of TEIAS is improved</td>
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</table>
**Intervention logic**

**Objectively verifiable indicators**

**Sources of verification**

**Assumptions**

<table>
<thead>
<tr>
<th>Activities: Activities associated with result 1</th>
<th>✓ Maintenance periods redefined</th>
<th>Periodical Maintenance Reports</th>
<th>Parallel activities timely completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1. Investigation and evaluation of the existing infrastructure of the Turkish transmission system including the design characteristics which affects the operation and maintenance performance of a transmission system operator.</td>
<td>✓ The number of people in maintenance groups predetermined</td>
<td>Operation Reports</td>
<td>Enough number of TEIAS technical personnel trained</td>
</tr>
<tr>
<td>1.2. Investigation and evaluation of the existing operation and maintenance performance of TEIAS including the regulations and instructions, in this respect.</td>
<td>✓ Revised maintenance and operation instructions and procedures are in place</td>
<td>Failure Reports</td>
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<tr>
<td>1.3. Comparison of the outcomes obtained with the best practice in EU.</td>
<td>✓ Stock expenses reduced due to the usage of standard design and brands.</td>
<td>Maintenance and operation instructions</td>
<td></td>
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<tr>
<td>1.4. Recommendations about above mentioned subjects including the know-how of the live maintenance prepared.</td>
<td>✓ Evaluation reports prepared by trained TEIAS personnel.</td>
<td>Stock Reports</td>
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<tr>
<td>1.5. Training relevant TEIAS staff on these issues both in one of the EU countries having the best practice and on site in Turkey.</td>
<td></td>
<td>Procurement Documents</td>
<td></td>
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<td>Budget and Cost Reports</td>
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<td>Investment Reports</td>
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<td>Training timesheets</td>
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<td>Training certifications</td>
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</table>
### Activities associated with result 2

2.1 Review and evaluation of the existing Turkish electricity market legislation regarding the legislation on cross border trade of electricity in EU internal market.

2.2. Investigation and evaluation of the existing market operation and management structure in Turkey.

2.3. Comparison of the outcomes obtained with the respective EU legislation, market operation and management structure, and the implementations in EU countries.

2.4. Determination of the proposals on the above mentioned subjects including the arrangements on the existing Turkish electricity market legislation, market operation and management structure, interconnector capacity allocations and loss calculations.

2.5. Training of the relevant TEIAS staff on the market operation and management systems, cross border electricity trade transactions.

| ✔ Amended legislation in compliance with the best practice in EU is in place | ✔ Evaluation reports prepared by trained TEIAS personnel | Amendments on the relevant legislation is amended |
| Annual Report of EMRA Annual report of TEIAS Training timesheets Training certifications | Enough number of relevant TEIAS staff is trained |
ANNEX No: 2  
DETAILED IMPLEMENTATION SCHEDULE OF ACTIVITIES

<table>
<thead>
<tr>
<th>Year</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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**Twinning**

1. Improvement of operation and maintenance performance of transmission system

2. Modification of administrative and legislative framework regarding cross border trade
ANNEX No : 3
COMMITMENT AND DISBURSEMENT SCHEDULE (in €)

<table>
<thead>
<tr>
<th></th>
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<tr>
<td>Disbursed</td>
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Annex 5

COORDINATOR OF PROJECT
(TASK-1 & TASK-2)

<table>
<thead>
<tr>
<th>TASK 1</th>
<th>TASK 2</th>
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<tbody>
<tr>
<td>HEAD OF RELEVANT DEPARTMENT</td>
<td>HEAD OF RELEVANT DEPARTMENT</td>
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<tr>
<td>TECHNICAL RESPONSIBLE</td>
<td>TECHNICAL RESPONSIBLE</td>
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<tr>
<td>WORKING GROUP</td>
<td>WORKING GROUP</td>
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</tbody>
</table>
Annex 6

Reference List of Relevant Laws and Regulations

- Electricity Transmission System Security of Supply and Quality Regulation No. 25639 dated November 10, 2004

Annex 7
Reference List of Relevant Strategic Plans and Studies

1- 8th Five Year Development Plan (2000-2005) of Turkey (prepared by State Planning Organization)