

Standard Summary Project Fiche

IPA DECENTRALISED NATIONAL PROGRAMMES

Project number: TR 07 02 07

TWINNING NO: TR 07 IB EN 02

1. Basic information

1.1 CRIS Number

1.2 Title

Institution Building on Air Quality in The Marmara Region

1.3 Sector

Environment

1.4 Location

Turkey/ Marmara Region

Implementing arrangements

1.5 Implementing Agency

The Implementing Agency for the project will be the Central Finance and Contracts Unit (CFCU) that will be responsible for all procedural aspects of the tendering process, contracting matters and financial management (including payments) of the project activities. (see ANNEX-3)

Mr. Muhsin ALTUN
Programme Authorizing Officer
Central Finance and Contracts Unit
Phone: +90 -312- 295 49 00
Fax: +90 -312- 286 70 72
E-mail: muhsin.altun@cfcu.gov.tr
Address: Eskişehir Yolu 4.Km. 2.Street. (Halkbank Kampüsü)
No:63 C-Blok
06580 Söğütözü/Ankara Türkiye

1.6 Beneficiary (including details of SPO)

Official Contact Details of SPO:
Musa DEMİRBAŞ
General Director
Ministry of Environment and Forestry
Söğütözü Cad. No:14/E Beştepe/ANKARA /TURKEY
Tel:+ 90 312 207 65 33
Fax: + 90 312 207 65 35
e-mail:mdemirbas@cevreorman.gov.tr

1.7 Overall cost

: 7,080 M Euro
1,900 M Euro for Twinning (institutional building)
5,180 M Euro for Supply (investment)

1.8 EU contribution

: 5,785 M Euro

1.9 Final date for

: 2 years after the date of signing the FA

contracting

1.10 Final date for execution of contracts : 4 years after the date of signing the FA

1.11 Final date for disbursements : 5 years after the date of signing the FA

2. Overall Objective and Project Purpose

2.1 Overall Objective:

The overall objective of the project is to improve the environmental conditions in Turkey by implementation and enforcement of the EU environmental acquis in the frame of ambient air quality.

2.2 Project purpose:

Framework conditions are established for efficient, effective and transparent implementation of the AQFD requirements in the Marmara Region which will serve as a model for Turkey to implement those requirements

2.3 Link with AP/NPAA / EP/ SAA

The Accession Partnership(AP):

The Accession Partnership 2003 sets out the principles, priorities, intermediate objectives and conditions decided by the European Council and Republic of Turkey.

In the short term those priorities for environment are:

- adopt a programme for transposition of the acquis.
- develop a plan for financing investment, based on the estimations of costs of alignment and realistic sources for public and private finance.
- begin to transpose and implement the acquis related to the framework legislation, legislation on nature protection, water quality, Integrated Pollution Prevention Control and waste management.
- implement and enforce the environmental impact assessment directive.

In the medium term the priorities for Environment are;

- complete the transposition of the acquis and strengthen the institutional, administrative and monitoring capacity to ensure environmental protection, including data collection.

integrate sustainable development principles into the definition and implementation of all other sectoral policies.

Council Decision of 23 January 2006 on the principles, priorities and conditions contained in the Accession Partnership with Turkey (2006/35/EC) Annex Turkey: 2005 Accession Partnership

In the short term those priorities for environment are:

- Adopt a revised programme for transposition and implementation of the acquis.
- Develop plan for financing investment.
- Continue to transpose and implement the acquis related to the framework legislation, international environmental conventions, and legislation on nature protection, water quality, Integrated Pollution Prevention Control and waste management. Implement and enforce the amended environmental impact assessment directive.
- Pursue the integration of environmental requirements into other sectoral policies.
- Develop a plan to strengthen administrative capacity, implementation and enforcement of environmental legislation.
- Pursue the development of transboundary water cooperation, in line with the water framework directive and international conventions to which the EC is a party

In the medium- term the priorities for Environment are;

- Continue alignment on the acquis and strengthen the institutional, administrative and monitoring capacity to ensure environmental protection, including data collection.
- Integrate sustainable development principles into the definition and implementation of sectoral policies.
- Ensure full transposition and progressive implementation and enforcement of the strategic environmental assessment directive, as amended.
- Adopt and implement a national waste management plan.

The National Programme (NP):

In the National Programme for the Adoption of the Acquis dated July 2003, Under Environment Chapter Priority 22.3. “Improving Air Quality” title, it is stated that;

“ Air Quality has been designated as a priority. Considering that beginning to transpose and implement the acquis is a short term priority and completing the transposition of the acquis and strengthening institutional, administrative, and monitoring capacity, including data collection, to ensure environmental protection are medium term priorities in the 2003 Accession Partnership Document.

There is a need for eliminating the differences between Turkish and the EU air quality legislation. In this framework, The Ministry of Health (MoH) contributes to harmonization efforts carried out by the Ministry of Environment and Forestry (MoEF)”.

Regarding to this priority, project entitled “Support to Turkey in the Field of Air Quality,

Chemicals and Waste Management Project TR03-IB-EN-01 Component-1 Air Quality” has been initiated in 2004 and completed at the end of 2006 to strength of the administrative capacity for harmonizing and implementing Air Quality Directive (96/62/EC). (ANNEX-4-3)

2.4 Link with MIPD

“Main Priorities” under headline “Transposition and implementation of the acquis” for Environment includes that “Adoption of a revised programme for transposition and implementation of the acquis; Transposition of framework legislation, international environmental conventions, and legislation on nature protection, water quality, air quality, Integrated Pollution Prevention Control and waste management, environmental impact and strategic impact assessment, chemicals and GMOs, climate change.”

2.5 Link with National Development Plan

The Eighth Five-Year Development Plan Strategy has been prepared within the framework of the Long-term Strategy and is the basic document setting out Turkey’s approach for the solution of its main medium-term economic and social problems. Thus, the main objectives and priorities of Turkey are based on the medium-term strategy set forth by the Eighth Five-Year Development Plan Strategy.

The European Commission also requested from Turkey in October 2001, as with other candidate countries, to prepare a Preliminary National Development Plan (pNDP) covering the period 2004-2006 which would be treated as an annex to the NPAA and would establish a strategic framework for programming pre-accession financial assistance for Turkey’s economic and social cohesion with the EU. Subsequently, this has also been underlined in the Regular Reports on Turkey’s Progress Towards Accession in 2002 and 2003. In these documents, it was stated that the pNDP would be a step in the process of preparing the development plan as required for Objective 1 regions in the EU member states. Moreover, it was indicated that the pNDP would need to be in conformity with the planning and programming documents and should be applicable in the EU and should be updated in line with the developments in Turkey’s strategy for economic and social cohesion with the EU.

Turkey’s first pNDP is prepared to form the basis for the use of the financial assistance towards economic and social cohesion to be provided by the EU within the framework of Turkey-EU relations, during the 2004-2006 period. The legal bases of the preaccession financial assistance for Turkey are Council Regulation (EC) No 390/2001 of 26 February 2001 and Council Regulation (EC) No 2500/2001 of 17 December 2001.

It is aimed that during the pNDP period, pre-accession financial assistance shall be used in an effective way and establishment of the necessary infrastructure shall be initiated for the utilization of structural funds after accession. The pNDP attempts to set out a strategic framework towards formulating an economic and social cohesion policy for the country and achieving convergence to the EU, taking into account, inter alia, the issues put forward in Regular Reports on Turkey’s Progress Towards Accession and Accession Partnerships.

In this context /frame work, regarding “Air Quality” under in pNDP Strategy, it is defined as; “The feasibility study dated 2002 revealed that the majority of existing air quality measurement stations

need to be supported in terms of infrastructure, equipment, measurement methods and personnel”.

2.6 Link with national/ sectoral investment plans

EU Integrated Environmental Approximation Strategy (UCES) covering the period 2007-2023 contains the information on pertaining to the technical and institutional infrastructure, the environmental improvements that are required to be performed as well as the mandatory arrangements which are necessary to establish complete harmonization for compliance with EU Environmental Acquis Communautaire and the effective implementation of the legislation which are the two pre-conditions for Turkey to join European Union. This main strategy document is the basic source of the project proposal named as “Institution Building on Air Quality in the Marmara Region”

In the preparation of UCES, outputs from the following documents were made use of; “National Environmental Strategy and Action Plan” that was prepared as a basis beforehand and the “Integrated Approximation Strategy Project” that was realized with the EC funds and the “Environmental Heavy Cost Investment Planning Project”. Furthermore, care was taken to make sure that the strategy paper was prepared in line with the Development Plan, Annual Programs, and the strategies and policies of the National Program.

Under the Air Quality title of UCES (ANNEX 4-4) is mentioned that Air Quality Framework Directive and its daughter directives have priority in the investment stage. The monitoring equipment, measurement systems and quality assurance systems must be installed for the implementation. The responsible institutions on the subject are the Ministry of Environment and Forestry and the Ministry of Health. In the establishment of the limit values, especially with the utilization of the best techniques to be applied in the industrial facilities the costs related with changing the production processes will be covered by the industrialists.

In accordance with the project for the planning of the heavy cost environmental investments, it is foreseen that in total 206 air quality measurement stations have to be installed in Turkey in general. From these stations 123 of them will be in intensive residential areas, 40 will be in the areas where the industry is intensive, 12 will be in the areas where the traffic is intense and 31 will be located in the rural areas. This number will be finalized as a result of the preliminary work to be conducted. Until year 2012 it is required for the preliminary work for the whole of Turkey must be concluded and the monitoring system must be established. The total cost forecasted for the establishment of the monitoring system is 11 million Euros. The total cost of the preliminary studies for air quality is 6 million Euros.

Furthermore under the chapter for Air Quality of UCES- Table (ANNEX 4-4) cost calculations for the following elements were made and these will be considered as additional costs; establishment of the calibration laboratories, establishment of the national calibration center, establishment of the monitoring network management center, national data center, formation of the emission inventories, preparation of the clean air plans, preparation of the action plans, implementation of the plans and programs for the improvement of the air quality, informing the public, reporting and the related personnel costs. In accordance with the project for the planning of the high cost environmental investments, it is foreseen that in total 206 air quality measurement stations have to be installed in Turkey in general. From these stations 123 of them will be in intensive residential areas, 40 will be in the areas where the industry is intensive, 12 will be in the areas where the traffic is intense and 31 will be located in the rural areas. This number will be finalized as a result of the preliminary work to be conducted. Until year 2012 it is required for the preliminary work for the whole of Turkey must be concluded and the monitoring system must be established. The total cost forecasted for the

establishment of the monitoring system is 11 million Euros. The total cost of the preliminary studies for air quality is 6 million Euros. In accordance with UCES, it is foreseen that total cost will come up to 37 Million Euro between the period of 2007-2023 for air quality investment needs including the establishment of the monitoring system, the maintenance cost, and operating costs and preliminary assessments.

3. Description of project

3.1 Background and justification:

Background:

In the past, some indicative air quality measurements and investigations were already done in Turkey. A National network system has been built up for measuring SO₂ and PM₁₀ parameters by the MoEF and Refik Saydam Hygiene Centre (RSHC). The air quality management system in Turkey involves several ministries which are MoEF and MoH and national institutions which are, The Scientific and Technological Research Council of Turkey (TUBITAK), RSHC and furthermore several municipalities and to some extent universities.

The air quality in the country in general is measured by using the semi-automatic measurement devices that belong to the Ministry of Health. The collected data are evaluated and reported to the related authorities by the Ministry of Health, Refik Saydam Centre of Hygiene. The fully automated air quality measurement stations were established in 81 provinces by the Ministry of Environment and Forestry. The national network of the MoEF measures only two parameters, namely the components of sulphur dioxide (SO₂) and particulate matter (PM₁₀). Gölbaşı Reference Laboratory as a related institution of the MoEF is responsible for the evaluation of the air quality data and management of the National Air Quality Network. The preparation of new measuring techniques, approval of measuring devices and methods, calibration and basic metrology at international level and establish a national measurement system and provide services to the laboratories within this system in terms of calibration, training, consultancy and other mechanisms are in the responsibility of the National Metrology Institute (UME) which is semi-autonomous institute under TÜBİTAK.

With the purpose of harmonization of EC legislation on air quality to a framework legislation a Twinning Project named “Support to Turkey in the field of Air Quality, Chemicals and Waste Management” was started in year 2004, and with the first component of this Project, the Air Quality, it is aimed to transpose Air Quality Framework Directive to our National Air Quality Legislation and to the activities for measuring the air quality, and the transposition of the provisions of the Large Combustion Plants Directive to our legislation. The project is completed in 2006 Draft By-law on Air Quality Assessment and Management (BAQAM) and to limit emissions arising from large combustion plants, Draft By-Law on Large Combustion Plant prepared. Those drafts were submitted for the approval to the related authorities of the Turkey.

In addition, strengthening of the qualification of the administration and of the technical structures in the administration (Know – How –Transfer) and strengthening of the quality management and preparation of the accreditation of the two laboratories - Refik Saydam Hygienic Center (RSHC) and Gölbaşı were achieved under the project. Parallel to the Twinning project, there was an investment component of the project, which supplied Refik Saydam Hygienic Center (RHSC) with 8 measurement stations for the city of Ankara, a calibration laboratory, transfer standards etc. In

connection with emission and ambient air network measurements, the laboratory and MoEF staff which participated in the trainings became aware of the need for maintenance and calibration procedures. Furthermore, Strategy For The Implementation And Enforcement of The By-Law On Air Quality Assessment and Management was prepared. Full text of Strategy document is in available in ANNEX-4.2.

The Draft By-law on Air Quality Assessment and Management covers four daughter directives (99/30/EC, 2000/69/EC, 2002/3/EC and 2004/107/EC) besides Air Quality Framework Directive, 96/62/EC. The new draft by-law sets the implementation calendar for implementation and harmonization of 13 pollutants that are defined under the framework directive and the daughter directives. By-law also aims to strengthen the monitoring, sanctioning and institutionalization in the area of controlling the pollution and air quality. BAQAM will be taken into force until end of 2007.

In case the new air quality limit values which are indicated in BAQAM, are exceeded. A strategy is required to reduce ambient air pollution concentrations. In this framework, Strategy For The Implementation and Enforcement of the By-Law on Air Quality Assessment and Management requires a new structure both at the national and regional level. Some new working units are needed to fulfil the new tasks. These working units and their responsibilities are explained in Strategy document in ANNEX-4-2

There is a need for a clear-cut assignment of the responsibilities for the execution of air quality directives to institutions. Clear-cut assignment also will support well-functioning air quality assessment and management as well as clean air policies in Turkey. An important step had been done into this direction by the renovation of the Turkish Environment Law. An amended Environment Law has passed in the parliament in May 2006, in which the responsibilities of ministries and institutions involved in air quality were redefined.

The Environment Law introduces methods about the determination, monitoring and measurement of air quality and air quality limit values and measures to be taken to prevent exceeding of limit values. Also, The Environment Law determines the MoEF as the primary responsible authority for environmental issues, such as increasing public awareness and providing access to related information. In this regard, the capacity of MoEF should be increased for the implementation of AQFD.

Justification:

The MoEF should coordinate the existing facilities of the related authorities (governor and provincial directorate of MoEF), of the municipalities and the RSHC and establish the infrastructure in a region to ensure the quality of the data, to build up an emission data base and to introduce a model to be able to provide a preliminary assessment (and later the yearly assessments), prepare clean air and alarm plans and introduce measures to improve the air quality where necessary and inform the public.

UCES Document defined comprehensive coordination role for the Ministry of Environment and Forestry in Air Quality for adaptation and implementation of EU Directives

The project with headline “Environmental Heavy Cost Investment Planning Project” was launched in the framework under 2002 European Union Financial Cooperation Programme and finished by the end of 2005. Among others, the consequences of implementation of the air quality framework

directive were evaluated and estimated in terms of necessary investment costs.

Furthermore, UÇES and other EU funded projects, the Twinning Project in Air Quality addressed new project proposal which will give opportunity to establish necessary capacity for the implementation of EU Acquis in Air Quality in a region. Particularly, Strategy Paper prepared under Twinning Project (ANNEX-4-2) has revealed the necessities of Turkey in field of air quality and determined related technical and financial requirements in regional base . Results of the project will be the example and experience for the other regions to implement the EU Air Quality Framework and Daughter Directives.

In the framework, for the adaptation of theoretical studies into practice, Marmara Region was chosen. based on the experience in Turkey, such an air quality management plan according to the requirements by the EU legislation should first be performed in the “Marmara” region serving as a model region for Turkey. In addition, the gaps in this rather incomplete system need to be filled in Marmara region. The system should be built in the region fulfilling all the technical and administrative requirements of the AQFD and the reporting requirements of the LCPD.

The Marmara Region has developed extremely rapidly over the last twenty years and as a result it become one of the most industrialized and highly polluted area. The population in the region is estimated to be approximately 20 million. Istanbul, Kocaeli and Bursa, like other highly developing countries, are the “prior cities” for Turkey and have received the majority of the growth. The growth has been realized with little or no planning. The rapid industrialization, high population growth and low urban infrastructure have huge effects on the air pollution in the region.

In this regard, the “Marmara Project” is a good model for monitoring of all sources of air pollution such as industry, traffic and heating. In this framework, it is essential to establish a comprehensive air quality-monitoring network for defining the scale of the air pollution problem and minimizing the problem. For Turkey, it is not easy to overcome bottlenecks in the implementation of AQFD requirements in such a huge area without EU expertise. The project will bring a new assessment and management approach in line with EU Ambient Air Quality Directives for solving air pollution problem and its potential effects on human health. Furthermore, this project will give a chance to use the existing infrastructure with equipments (10 air quality measurement stations in Istanbul and 2 stations in Bursa) and to benefit from human resources training. This project would also enable the decision makers and local authorities to evaluate the effectiveness of air pollution minimization strategies and clean air plans / action plans.

For this purpose Regional Centre for Clean Air includes Regional Ambient Air Network, Regional Calibration Laboratory (RCL), Regional Data Centre (RDC) and Regional Maintenance Centre(RMC). RCL should ensure the use of the national calibration standard in the respective regional network. RDC also need to be established in the region, which transmits the data to the National Data Centre. RMC should be established for maintenance of equipment and to provide system operating properly.

In Regional Ambient Air Monitoring Center, 21 Turkish experts from different disciplines will take responsibility in monitoring network operation, regional calibration laboratory, regional data center, analytical laboratory, regional unit for analysis and modeling action (ANNEX 5-5). They should be situated in Istanbul together with the Resident Twinning Advisor.

The MoEF offices in Istanbul and the other 10 provinces (Kocaeli, Bursa, Balıkesir, Sakarya, Çanakkale, Yalova, Tekirdağ, Edirne, Kırklareli, Bilecik) should participate the project. The

meetings regularly held to execute the project with the responsible persons from the MoEF in Ankara, the MoEF provincial offices and municipalities in the Marmara region. Most of the activities will take place in the region. The project enables to fulfill the AQFD in the region and will be a model for the other regions.

In addition to the administrative requirements; in order to increase the technical capacity of the ambient air quality monitoring system in the Marmara region, 39 air quality measurement stations have to be installed and to ensure the fulfilment of the Framework Directive 96/62/EC and its daughter directives. From these stations 19 of them will be established in intensive residential areas, 7 will be established in the areas where the industry is intensive, 9 will be established in the areas where the traffic is intense and 4 will be located in the rural areas. These distribution is given in ANNEX-4-1- (Table-1, Table-2, Table-3). The details of the equipments in Air Quality Monitoring Network is also given in ANNEX 5-3 .

The staffs from the departments of the MoEF that are responsible from control, management and monitor of the air quality in Ankara, will attend in whole steps of implementation of the project

Investment costs for Regional Ambient Air Network including Regional Data Centre and Regional Maintenance Centre, Calibration Laboratories RCL and particle determination and Analytical Laboratories, Basic Emission Data Base and first preliminary assessment for the region in Marmara region is totally equal to 5,180 M Euro (ANNEX-5-2). The Regional Centre for Clean Air in İstanbul with building and staff will be secured by the MoEF before the project starts. The operating costs will be timely started with the project. But, the full laboratory equipment of this centre will be established by this project.

The proposed project concerning Institutional Building including Technical Assistance in Air Quality in Marmara region should be carried out under the supervision and patronage of the MoEF as the main administrative body for the air quality issues. This work needs to be carried out in cooperation with the municipalities of the selected region (Istanbul/Bursa for the Marmara region), the RSHC, the Gölbaşı Reference Laboratory and TUBITAK. The Provincial Directorates of the MoEF in the region, metropolitan municipalities, universities, chambers etc. are the other beneficiaries of the project.

Such a project would need to be started in 2008 and be ended at latest in 2012 in order to provide for the implementation of its results (Clean air plans, action plans) in the remaining zones and agglomerations of Turkey by 2015.

The total budget of the Marmara Project is estimated to be 7, 080 M Euro including for institutional building 1,9 M Euro (under Twinning –ANNEX 5.4)and for investments 5,180 M Euro. The quarter percentage of the investment costs that means 1,295 M Euro will be provided from the national budget of Turkey. The contribution of the EU to investment cost will be 3, 885 M Euro.

Services:

The cost modelling of preliminary assessment for the region and also basic emission data base are taken into account under the supply component of the project. But, the training for the modelling are planned from the private companies under the supply component which is estimated around 200,000 Euros which should be able to be split up into three parts since three different kind of models have to be considered (street modelling, point and area source modelling and the big EURAD model) so it may be that three different companies could be employed.

The same is true for the investment part for the models (it should be able to be split into three parts). And also the trainings should be bought from the companies which do the corresponding model calculations. In addition 100 thousand Euros should be available for the training of the emission data bases.

3.2 Assessment of the project impact, catalytic effect, sustainability and cross border impact

Air quality management plan according to the requirements of the EU Legislation will be performed in the ‘Marmara’ region as a model region in Turkey. It is essential to introduce a comprehensive system, to build up a Regional Centre for Clean Air, which includes a regional ambient air network. The network will also include a Regional Calibration Laboratory, Regional Data Centre and Regional Maintenance Center.

This project will bring positive effects in terms of providing the necessary communication between the authorities and defining responsibilities in the region. MoEF (Provincial Directorates of MoEF) will be responsible from the coordination and communication among the authorities. Implementation Chart of the project is given in Figure-1 in ANNEX-3. As seen from the figure, many of the stakeholders in the region will take part in the project. This project will create a chance for the implementation of AQFD in a huge industrial area, such as Marmara region and will provide a catalytic effect with regards to the implementation of the AQFD throughout Turkey.

For sustainability of such a comprehensive system;

For equipments

- Education Programme for the staff should be organized

- Manuals should be prepared for the further usage of equipments.

- Maintenance of these equipments and measurement stations should be ensured

- Necessary mechanism by project team should be established for expenditures of the equipments and stations

For basic emission data

- Maintenance of the measurement stations should be supplied.

- Data Quality Assurance System should be established.

For the usage of models

- Education Programme for the staff should be organized

- Guidelines should be prepared

For the monitoring of air pollutants

- Clean air plans, alarm plans, action plans should be prepared

- Awareness of the public should be increased by the way of media, brochure etc.

For each item listed above workshops and seminars should be organized for increasing awareness.

3.3 Results and measurable indicators:

The results expected from the project are as follows;

- 1- For the implementation of AQFD and daughter directives in a regional level Regional Ambient

Air Quality Monitoring System was established and operated.

Measurable indicators are;

1.1- 39 (At least) air quality measurement stations and necessary equipment and calibration laboratory were established by the end of 2011.

1.2- 30 Turkish Experts were trained for management/ operation of regional ambient monitoring network by the end of 2011.

1.3- Equipment, emission data base and model results were delivered, 30 staffs were trained by the end of 2011.

1.4- Regional Calibration Centre, Regional Data Centre and Regional Maintenance Centre were established until the end of 2011.

2- For the implementation of the AQFD and daughters directives requirements the development of the institutional and technical capacity was ensured.

Measurable indicators are;

2.1- 40 staffs from MoEF (regional, Gölbası, RCCA) and RSHC were trained on data analysis, source analysis, modelling, emission data base, reporting by the end of 2011

2.2- 30 MoEF (regional/ Gölbası, RCCA,RSHC) staffs were trained in Data Quality Assurance by end of 2011

2.3- 40 MoEF (Regional/Golbası, RCCA), RSHC staffs were trained in and assigned to ambient air quality monitoring network by the end of 2011

2.4- 10 MoEF staffs were trained in modeling work by the end of 2011

2.5- Both MoEF and RSHC each undertake review in 2008 and again at the end of 2011 to assess improvement

2.6- Clean air plans, action (alarm) plans were adopted by the end of 2011.

3-. Awareness of priority groups and decision makers were raised.

Measurable indicators are;

3.1- 5 Workshops and 10 seminars were done together with all stakeholders (provinces, municipalities, universities, chambers, NGOs, etc.) until the end of 2011

3.2- Web-site was prepared to share the activities of the project and to share measurement results a few months after the project started.

3.4 Activities:

The Project activities will be achieved under Twinning and Supply Contract separately. The following activities will be achieved under Supply Contract due to payment procedure.

For the implementation of AQFD and daughter directives in a regional level, Regional Ambient Air Monitoring System were established and operated. In order to achieve this result, the following activities are needed.

- 1.1-The procurement of a basic emission data base in the region and strengthening of the capacities in this field
- 1.2- The procurement of air dispersion modelling capacity.
- 1.3-The procurement of basic model results for the region as a basis for preliminary assessments, yearly assessments, clean air plans, alarm plans and measures for clean air and strengthening of the capacity to work in this field.
- 1.4 - The procurement of a regional emission data base which should be the basis for the continuous update carried out by the regional centre for clean air and for modelling and reporting purposes – considering topographic and meteorological conditions – considering the requirements of the IPPC and LCP Directives
- 1.5- The procurement of equipment for the regional network(calibration laboratory, measurement stations, computer (hardware and software)- preparations for the measurement of the wind field in this region (methods-equipment)
- 1.6-The procurement of missing equipment (e.g. calibration laboratory, stations, computers, etc.) in the region

Under Twinning Contract two main results to be achieved. Firstly, for the implementation of the AQFD and Daughters directives requirements, the development of the institutional and technical capacity is ensured

- 2.1- Identifying infrastructure for implementation of the AQFD and Daughter Directives requirements in the region
- 2.2-Evaluation of institutional and technical capacity (existing structure/equipments) for the implementation of the AQFD and Daughters requirements in the region.
- 2.3- Coordination and cooperation among stakeholders in the region for preparation of emission inventory
- 2.4-Preparation of technical specifications for equipments /hardware/software measurement stations etc.
- 2.5- Supporting MoEF and CFCU in procurement process of supply tender.
- 2.6-The running of existing models for the emission of point and area sources and the EURAD model for Turkey demonstrated for the region
- 2.7- Assistance of the Quality assurance methods for the field and laboratory activities of the Golbasi Laboratory , Refik Saydam Hygiene Centre (RSHC) and a New Regional Centre
- 2.8- Assistance of a network of the air quality assurance system in connection with the Ankara

Network (RSHC) and the National Network (Gölbasi / MoEF) and further existing municipality networks and TÜBİTAK as the provider of the primary standards (e.g. first national round robin test)

2.9-Implementing the AQFD including field , laboratory and office procedures review on the regional scale

2.10-Detailed training both in Turkey and in Member States

2.11-Dissemination workshops on practical implementation of AQFD

2.12-Increasing the personnel capacity of staff working in the region .

2.13- Draw up of clean air plans, action (alarm) plans for the selected area

2.14-Preparation of guidelines on Preliminary assessment and Clean Air Plans

2.15- Provision of assistance and training during the accreditation of laboratory.

Another important result under Twinning is to increase awareness of priority groups and decision makers. In order to achieve this result, the following activities are needed.

3.1-Sharing experiences of this region with neighbour provinces in other zones by workshops, seminars, published papers etc.

3.2-Training of trainers for national and local experts for the implementation of the AQFD throughout Turkey.

3.3- Assistance with public information in connection with clean air plans and action (alarm) plans.

3.4-Preparation of Website.

3.5-Preparation of brochure.

3.6-Introduction of Project activities on local TV Channels

3.5 Conditionality and sequencing

In 2007 it is planned to enter into force of the draft of Turkish legislation considering the AQFD and the Daughter Directives.

Regional Ambient Air Monitoring Network has to be established in the Marmara Region. Estimated staff resources required for a Regional Centre for Clean Air is to be composed of approximately 21 Turkish experts. (ANNEX-5-5). The Regional Centre for Clean Air in İstanbul with building and staff will be secured by the MoEF before the project starts. The operating costs will be timely started with the project.

Provincial Directorates of MoEF will have responsibilities for operating Regional Ambient Air Monitoring Network. Since, there is no national or regional environmental agency yet, this group should be acting under the supervision and patronage of the MoEF with the coordination of the MoEF branch in Istanbul and the MoEF branches in other provinces of the Marmara Region.

Support to the procurement of the equipment can be started based on an assessment of the existing stations, networks, capacity etc. in the region.

Coordination of quality assurance for the existing networks shall start with the help of the calibration laboratory of the Ankara network of RSHC. The other activities such as field procedures, laboratory procedures, and office procedures review on the regional scale and trainings will start accordingly.

The delivery date of laboratory equipments, measurement stations, computers and building will be in different time intervals. In this stage, it is very difficult to define the linkages between separate contracts.

Sustainability of such a comprehensive system (maintenance of laboratory equipments, measurement stations, computers etc.) and maintenance of the supplies should take into warranty of contractor for a certain period (such as 2 or 3 years). But for the following years, Regional Maintenance Centre work under Regional Centre for Clean Air will have responsibility for maintenance of equipment. MoEF will be responsible authority from the sustainability of Regional Ambient Air Monitoring System.

3.6 Linked activities

There is a need for strengthening of the institutional structure to ensure the full and effective implementation, monitoring and inspection of the existing legislation as well as the related EC Directives. Many of the EU funded projects have been completed in Ministry of Environment and Forestry. These projects provided a base for improving at institutional level.

“Air Pollution Measurement and Monitoring Systems”: It is a national project, which has been finalized in 2002. In this project, generally, locations and number of measurement stations were determined in 81 cities, and financial analysis was made according to EU requirements.

“Analysis of Environmental Legislation in Turkey”: This project was completed in 2002. An analysis of Turkish environmental legislation and the gaps according to EU legislation were given.

Within the framework of the MATRA Pre-Accession Projects Program (MAT02/TR/9/2), “Strengthening of the implementation of the Council Directive 96/62/EC and Council Decision 97/101/EC on ambient air quality assessment and management, and reciprocal information exchange in the RSCH, MoH, Turkey” Project has been carried out in the period of January 2003-December 2004. This project consists of the preparation for reporting of Turkish air quality information to EU, the development at institutional level of RSCH and MoEF in air quality, the preparation of preliminary assessment and basis air quality monitoring and policy, introduction of a quality system according to ISO17025 in the RSCH-air quality and research laboratory. Ankara Metropolitan Area and City of Kütahya preliminary assessments were made.

“Capacity Building (Human Resources Aspect) on the adoption of Integrated Pollution Prevention and Control Directive (IPPC-96/61/EC)”: The project was supported by the Dutch PSO Program. The objective of the project was to develop in-depth understanding of the IPPC

Directive and design an action plan for adoption and implementation in Turkey. The project was finalised in 2004.

”Integrated Harmonisation Strategy Project” project defined the programme through which the necessary changes in legislation and implementation will be achieved in Turkey. The strategy covers a period of 20 years, starting in 2003, in order to ensure that all long term investment needs are included. The strategy covers all nine sectors of the environmental acquis. The environmental approximation strategy was prepared at three levels: Firstly, a series of Directive Specific Implementation Plans (DSIP) was prepared. Secondly, a Sector Approximation Strategy (SAS) was prepared for each of the nine sectors including air sector. Finally, a single Integrated Approximation Strategy (IAS) for Turkey was prepared based on the nine sectors’ Approximation strategies. This project was completed in April 2004.

“Environmental Heavy Cost Investment Planning Project” The project was launched in the framework of 2002 European Union Financial Cooperation Programme and finished by the end of 2005. Among others, the consequences of implementation of the air quality framework directive were evaluated and estimated in terms of necessary investment costs. The inception report for the project has already been prepared.

EU-Twinning Project Air Quality, Chemicals, Waste, Component 1: “Air Quality” was completed in 2006. The main aims of the project were reached. The transpositions of the Council-Directive 96/62/EC (Air Quality Framework Directive) including the 4 Daughter Directives and the Directive 2001/80/ EC (Large Combustion Plant Directive) into Turkish Legislation were drafted and agreed. Under the Project the following studies were completed.

- Preparation of Draft regulation on ambient air quality assessment and management
- Preparation of Draft regulation on large combustion plants
- Designation of zones and agglomerations with a view of the ambient air quality assessment
- Determination of the number of stations necessary and regional network structure
- Preparation of a Strategy for the implementation and enforcement of the regulation on air quality assessment and management in Turkey
- Preparation of a Strategy paper on the implementation of the large combustion plant directive
- Establishing 8 measurement stations in Ankara by using the guidelines defined in directives
- Calculating the cost of ambient air quality monitoring
- Use of EURAD model for air quality forecast

The MATRA programme “IPPC Implementation in Turkey” was started in January 2006. The project purpose is to assist the Turkish Ministry of Environment and Forestry with the implementation of the IPPC Directive. More specifically, the project should lead to the preparation of a roadmap towards full implementation of the IPPC Directive in Turkey. The project will end in December 2007.

3.7 Lessons learned

In MoEF, all projects mentioned above; and particularly, the EU-Twinning-Project Air Quality, Chemicals, Waste, Component 1: “Air Quality” have highlighted a number of weaknesses such as;

- Weakness in collection of the data inventory,
- Absence of adequate planning documents and sectoral strategies resulting in weaknesses in needs analysis,

Currently, it is clear that effective implementation of the air quality strategy and legal programme will require;

- Reliable data collection system,
- Effective system and institutions for monitoring and reporting on emissions and environmental quality and inspection,
- Procedures and tools for raising environmental awareness of industry and public in order to secure understanding, cooperation and support of environmental measures,
- Institution procedures facilitating public participation and environmental management ,
- Administrative and judicial resource relation to (actual and threatened),
- Violation and Environment Law accompanied by appropriate systems of adequate and dissuasive fines and penalties including provision for liability under criminal jurisdiction for serious violations ,
- Training of staff and susceptible sector of society,
- Adequate funding of implementing and enforcement institutions

All the above remedial actions to avoid identified problems have been addressed in the project design and need to be addressed during the project implementation.

4. Indicative Budget (amounts in M Euro)

	TOTAL PUBLIC COST	SOURCES OF FUNDING										
		EU CONTRIBUTION				NATIONAL PUBLIC CONTRIBUTION						PRIVATE
		Total	% *	IB	INV	Total	Type of cofinancing (J / P) **	% *	Central	Regional	IFIs	
Activities												
Activity 1												
Twinning	1,9	1,9	% 100	1,9								
Supplies	5,180	3,885	% 75		3,885	1,295	J	% 25	1,295			
TOTAL	7,080	5,785				1,295						

** compulsory for INV (minimum of 25 % of total EU + national public contribution) : Joint cofinancing (**J**) as the rule, parallel co financing (**P**) per exception

* expressed in % of the Total Public Cost

5. Indicative Implementation Schedule (periods broken down per quarter)

Contracts	Start of Tendering	Signature of contract	Contract Completion
Twinning	4Q / 2007	3Q / 2008	2Q / 2011
Supplies	4Q / 2008	3Q / 2009	2Q / 2011
.....			

Duration of the project is min 30 months.

Twinning should in principle be ready for tendering in the 1ST Quarter following the signature of the FA .

6. Cross cutting issues (where applicable)

There are important cross-cutting issues with implementation of other relevant air pollution legislation (not just LCP and fuel quality, but also national emission ceiling....) which need to be properly addressed, as these legislation is taken in by TK in the following years. In addition, climate change which is an important EU policy is partly covered in the integrated “clean air“ programme (if we understood properly one of the pillars of this activity), almost as a side-issue to the air quality and fuel quality measures. Perhaps what is done and what is not done on CO2 (emission inventories, integration of both issues in air quality plans) within this work should be more explicitly spelled out.

6.1 Equal Opportunity

The component will comply with the European Commission’s equal opportunity policy.

6.2 Environment

The project itself is focused on the achievement of long-term improvements in Turkey in the environment sector. It will improve the environmental conditions in Turkey and some activities like transportation can also be improved in terms of environmental standards.

6.3. Minority and vulnerable groups

According to the Turkish Constitutional System, the word minority encompasses only groups of persons defined and recognized as such on the basis of multilateral or bilateral instruments to which Turkey is a party. This project has no negative impact on minority and vulnerable groups.

ANNEXES

ANNEX 1- Logical Framework Matrix in Standard Format

ANNEX 2- Amounts contracted and Disbursed per Quarter over the full duration of the project

ANNEX 3 - Institutional Framework

ANNEX 4- Reference to laws, regulations and strategic documents:

1- Tables Related to Marmara Region

2-Strategy for the implementation and enforcement of the regulation on air quality assessment and management in Turkey

3- National Programme for the Adoption of the Acquis (2003) (Only related parts)

4-EU Integrated Environmental Approximation in Strategy in Turkey (Only related parts)

ANNEX 5- 1-Details of Tasks Expected from the Team Leader, Resident Twinning Advisor and Short Term Experts

2-Investment Costs for Regional Ambient Air Monitoring Network in Marmara Region

3- Ambient Air Quality Monitoring and Non-Laboratory Computing and Communication Equipment And Laboratory Equipment – Also Basic Emission Data Base and Modeling for Marmara Region.

4-The Costs of Twinning

5-Estimated staff resources required for Regional Ambient Air Monitoring Network in the Marmara Region

ABBREVIATIONS

EU	European Union
EC	European Commission
MoEF	Ministry of Environment and Forestry
MoH	Ministry of Health
RSHC	Refik Saydam Hıfzısıhha Center of Hygienic
GRL	Gölbaşı Reference Laboratory
AQFD	Air Quality Framework Directive: (Directive 96/62/EEC)
TÜBİTAK	The Scientific and Technological Research Council of Turkey
BAQAM	By-Law on Air Quality Assessment and Management
MATRA	Funding Program of the Government of the Netherlands for Candidate
Countries	
LCP	Large Combustion Plant
IPPC	Integrated Pollution Prevention and Control
PM	Particulate matter
SO ₂	Sulphur di Oxides
UÇES	E U Integrated Environmental Approximation Strategy
RDC	Regional Data Centre
RMC	Regional Maintenance Centre
RCC	Regional Calibration Centre
RCCA	Regional Centre for Clean Air
CFCU	Central Finance and Contracts Unit

ANNEX 1: Logical framework matrix in standard format

LOGFRAME PLANNING MATRIX FOR INSTITUTION BUILDING ON AIR QUALITY IN THE MARMARA REGION	Programme name and number:	
	Contracting period expires : 2 years after the signature of the Financing Agreement	Disbursement period expires: 5 years after the signature of the Financing Agreement
	Total Budget: 7,080 M Euro	IPA budget: 5,785 M Euro

Overall Objective	Objectively verifiable indicators	Sources of Verification	
To improve the environmental conditions in Turkey by implementation and enforcement of the EU environmental acquis in the frame of ambient air quality.	Turkey will improve capacity to meet with the requirements of the environmental acquis by 2011	<ul style="list-style-type: none"> • Accession Partnership Chapter Environment • National Plan for the Adoption of the Acquis • EU Regular Reports for 2008, 2009 ,2010 and 2011 • State of Environment reports for 2009, 2010,2011 • 	
Project Purpose	Objectively verifiable indicators	Sources of Verification	Assumptions
To establish the Framework conditions for efficient, effective and transparent implementation of the AQFD requirements in the Marmara Region which will serve as a model for Turkey to implement those requirements	<p>Turkish version of AQFD and daughter directives came into force by the end of 2007</p> <p>Turkish version of AQFD, namely the By-law on Air Quality is applied in the Marmara region and disseminated throughout</p>	<ul style="list-style-type: none"> • EU Regular Reports • State of Environment reports • Turkish national statistics • Annual reports of MoEF, other relevant ministries and pilot project provinces • Budget and staffing allocations within the MoEF and other ministries 	By law on Air Quality will come into force

	<p>Turkey by the end of second quarter of 2011 with the help of the administrative and technical capacity built.</p>	<ul style="list-style-type: none">• Presence of trained staff and equipment on sites (at least 40 Staff for 39 measurement stations and calibration laboratory)• Accreditation of the methods, the laboratories are using for the measurement of the different components and the quality assurance .	
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Results	Objectively verifiable indicators	Sources of Verification	Assumptions
<p>1. For the implementation of AQFD and daughter directives in a regional level, Regional Ambient Air Quality Monitoring System were established and operated.</p> <p>2. For the implementation of the AQFD and Daughters directives requirements, the development of the institutional and technical capacity was ensured</p>	<p>1.1- 39 (At least) air quality measurement stations and necessary equipment and calibration laboratory were established by the end of 2011.</p> <p>1.2- 30 Turkish Experts were trained for management/operation of regional ambient monitoring network by the end of 2011.</p> <p>1.3- Equipment, emission data base and model results were delivered, 30 staffs were trained by the end of 2011.</p> <p>1.4- Regional Calibration Centre, Regional Data Centre and Regional Maintenance Centre were established until the end of 2011.</p> <p>2.1- 40 staffs from MoEF (regional, Gölbaşı, RCCA) and RSHC were trained on data analysis, source analysis, modelling, emission data base, reporting by the end of 2011</p> <p>2.2- 30 MoEF (regional/</p>	<ul style="list-style-type: none"> • Inception Report • Quarterly Report, Mission Reports, Final Reports • Payment receipts for equipment etc., certificates of training issued by supplier • Statistical data on emissions in the Marmara Region • Clean air plans, action (alarm) plans • Website, published reports. 	<ul style="list-style-type: none"> • Good cooperation and coordination among MoEF, governorships of the provinces and municipalities RSHC, Gölbaşı Labs, etc • Achieving the project target plans and activities regularly in line with the timetable • Build up the necessary personnel capacity in the region

Results	Objectively verifiable indicators	Sources of Verification	Assumptions
<p>3.Awareness of priority groups and decision makers were raised</p>	<p>Gölbasi, RCCA,RSHC) staffs were trained in Data Quality Assurance by end of 2011</p> <p>2.3- 40 MoEF (Regional/Golbasi, RCCA), RSHC staffs were trained in and assigned to ambient air quality monitoring network by the end of 2011</p> <p>2.4- 10 MoEF staffs were trained in modeling work by the end of 2011</p> <p>2.5- Both MoEF and RSHC each undertake review in 2008 and again at the end of 2011 to assess improvement</p> <p>2.6- Clean air plans, action (alarm) plans were adopted by the end of 2011.</p> <p>3.1- 5 Workshops and 10 seminars were done together with all stakeholders (provinces, municipalities, universities, chambers, NGOs, etc.) until the end of 2011</p> <p>3.2- Web-site was prepared</p>		

Results	Objectively verifiable indicators	Sources of Verification	Assumptions
	to share the activities of the project and to share measurement results a few months after the project started.		

Activities	Means	Cost	Assumptions
<p>1.1-The procurement of a basic emission data base in the region and strengthening of the capacities in this field</p> <p>1.2- The procurement of air dispersion modelling capacity.</p> <p>1.3-The procurement of basic model results for the region as a basis for preliminary assessments, yearly assessments, clean air plans, alarm plans and measures for clean air and strengthening of the capacity to work in this field.</p> <p>1.4 - The procurement of a regional emission data base which should be the basis for the continuous update carried out by the regional centre for clean air and for modelling and reporting purposes – considering topographic and meteorological conditions – considering the requirements of the IPPC and LCP Directives</p> <p>1.5- The procurement of equipment for the regional network(calibration laboratory, measurement</p>	<p>1 x Twinning</p> <p>1 x supplies</p>	<p>1,9 M Euro institution building</p> <p>5,180 M Euro investment</p>	<ul style="list-style-type: none"> • Preparation of proper working conditions and supplying the necessary equipments (building, room, computers etc.) for the success of the project • Good cooperation among MoEF , Gölbaşı Lab., RSHC ,TÜBİTAK and regional office of MoEF • Good cooperation and training activities among provinces to sustain effective working groups • Good cooperation

Activities	Means	Cost	Assumptions
<p>stations, computer (hardware and software)-preparations for the measurement of the wind field in this region (methods-equipment)</p> <p>1.6-The procurement of missing equipment (e.g. calibration laboratory, stations, computers, etc.) in the region</p> <p>2.1- Identifying infrastructure for the implementation of the AQFD and Daughter Directives requirements in the region</p> <p>2.2-Evaluation of institutional and technical capacity (existing structure/equipments) for the implementation of the AQFD and Daughters requirements in the region.</p> <p>2.3- Coordination and cooperation among stakeholders in the region for the preparation of emission inventory.</p> <p>2.4-Preparation of technical specifications for equipments /hardware/software measurement stations etc.</p> <p>2.5- Supporting MoEF and CFCU in procurement process of supply tender.</p> <p>2.6-The running of existing models for the emission of point and area sources and the EURAD model for Turkey demonstrated for the region</p> <p>2.7- Assistance of the Quality Assurance methods for the field and laboratory activities of the Gölbaşı</p>			<p>among stakeholders (e.g Chambers)</p> <ul style="list-style-type: none"> • Elaboration of qualified and willing staff in the region • Training and study tours regarded as key learning opportunities by the participants.

Activities	Means	Cost	Assumptions
<p>Laboratory , Refik Saydam Hygiene Centre (RSHC) and a New Regional Centre.</p> <p>2.8 Assistance of a network of the air quality assurance system in connection with the Ankara Network (RSHC) and the National Network (Gölbasi / MoEF) and further existing municipality networks and TÜBITAK as the provider of the primary standards (e.g. first national round robin test)</p> <p>2.9-Implementing the AQFD including field , laboratory and office procedures review on the regional scale .</p> <p>2.10-Detailed training both in Turkey and in Member States</p> <p>2.11-Dissemination workshops on practical implementation of AQFD</p> <p>2.12-Increasing personnel capacity working in the region .</p> <p>2.13-Draw up of clean air plans, action (alarm) plans for the selected area.</p> <p>2.14-Preparation of guidelines on Preliminary assessment and Clean Air Plans.</p> <p>2.15- Provision of assistance and training during the accreditation of laboratory.</p> <p>3.1-Sharing experiences of this region with</p>			

Activities	Means	Cost	Assumptions
<p>neighbour provinces in other zones by workshops, seminars, published papers etc.</p> <p>3.2-Training of trainers for national and local experts for the implementation of the AQFD throughout Turkey</p> <p>3.3- Assistance with public information in connection with clean air plans and action (alarm) plans.</p> <p>3.4-Preparation of Website</p> <p>3.5-Preparation of brochure</p> <p>3.6-Introduction of Project activities on local TV Channels</p>			

Pre conditions : The Regional Centre for Clean Air in İstanbul with building and staff will be secured by the MoEF before the project started.