

Project Title	Improving the Energy Efficiency in the Buildings (IEEB)
Cris Decision number	2011/022-985
Project no.	TR2011/0315.20
MIPD Sector Code	5. Energy
ELARG Statistical code	15
DAC Sector code	23082
Total cost (VAT excluded) ¹	3 333 500 EUR
EU contribution	3 000 000 EUR
EU Delegation in charge/Responsible Unit	EU Delegation in Ankara
Management mode	Decentralised: The CFCU will be 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 Programme Authorizing Officer (PAO) of the project. Mr. Muhsin ALTUN (PAO-CFCU Director) Central Finance and Contracts Unit Tel: +90 312 295 49 00 Fax: +90 312 286 70 72 E-mail: pao@cfcu.gov.tr Address: Eskişehir Yolu 4.Km. 2.cad. (Halkbank Kampüsü) No:63 C-Blok 06580 Söğütözü/Ankara TURKEY
Implementing modality	Project
Project implementation type	Grant
Zone Benefiting from the action	Turkey

¹ The total project cost should be net of VAT and/or of other taxes. Should this not be the case, clearly indicate the amount of VAT and the reasons why it is considered eligible.

1. Basic information

1.1 CRIS Number: TR2011/0315.20

1.2 Title: Improving Energy Efficiency in Buildings (IEEB)

1.3 ELARG Statistical code: ENERGY

1.4 Sector: Energy

1.5. Location: Turkey

Implementing arrangements:

1.6. Implementing Agency:

The Central Finance and Contracting Unit (CFCU) will be 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 Programme Authorizing Officer (PAO) of the project. The contact details of CFCU Director are given below:

Mr. Muhsin ALTUN (PAO- CFCU Director)

Central Finance and Contracting Unit

Tel: + 90 312 295 49 00

Fax: + 90 312 286 70 72

E-mail: pao@cfcu.gov.tr

Address: Eskişehir Yolu 4. Km. 2. Cad. (Halkbank Kampüsü) No: 63 C-Blok 06580 Söğütözü/Ankara TÜRKİYE

1.7 Beneficiary (including details of SPO): Ministry of Environment and Urbanisation (MoEU)

MoEU **SPO:**

Sedat KADIOĞLU

Deputy Undersecretary

Vekaletler Cad. No: 1 Bakanlıklar/Ankara /Turkey

Tel: 00903124240998 / 00903124181437

Fax: 00903124178719

E-mail: <mailto:skadioglu@csb.gov.tr>

1.8. ***Overall cost: 3 333 500 EURO**

1.9. EU contribution: 3 000 000 EURO

1.10. Final date for contracting: 2 years after the signature of the Financing Agreement

1.11 Final date for execution of contracts: 2 years after the last day of contracting deadline

1.12 Final date for disbursements: 1 year after the end date for the execution of contracts

2. Overall Objective and Project Purpose

2.1 Overall Objective:

The overall objective of the project is to improve the energy efficiency in Turkey to generate economic gains and to make a positive contribution for against climate change and the security of energy supply.

2.2 Project purpose:

The project purpose is to improve energy efficiency in buildings through better design of new buildings and retrofit of the existing ones.

2.3 Link with AP / NPAA / Progress Report

The Energy Chapter of the Accession Partnership 2008 emphasizes the need to “strengthen administrative capacity and continue alignment in the energy efficiency field, promote high-efficiency cogeneration, and develop renewable energy in transport, electricity and heating/cooling, including the setting of appropriate and ambitious targets and incentives,”

Therefore, the 2008 Turkish National Programme for the adoption of the Acquis (NPAA) envisages the institutional and capacity building requirements for MoEU under Energy Chapter in table 15.3.2 for legislative approximation and implementation. These requirements are all fully in line with the proposed activities of this particular project.

- Acquisition of qualified staff for the Unit responsible for preparing legislation in the field of energy performance in buildings and inspection of implementation. Following the establishment of a unit responsible for preparing legislation in the field of energy performance in buildings and inspection of implementations.
- Consultancy for the development of administrative capacity within the scope of Directive on Energy Performance of Buildings
- Consultancy for the development of a program on the “Implementation of legislation on energy performance in buildings in existing building stock and new buildings.
- Consultancy for the development of public awareness program between the Ministry and the Municipalities to increase the effective implementation of the legislation on energy performance in buildings
- Consultancy for determining “architectural and site planning criteria” within the context of integrating “passive measures” into architecture and city planning, for the effective implementation of legislation on energy performance in buildings

Regarding the Progress Report 2011 of Turkey under the chapter 4.15 (Energy), it has been stated that in case of energy efficiency further progress can be reported. It also underlines that efforts to increase energy efficiency could benefit from the development of strategies to increase further awareness. This project aims to align the Turkish legal framework regarding the energy efficiency of buildings with the EU Acquis.

2.4 Link with MIPD

As one of the key documents in the IPA structure of EU financial assistance the MIPD also prioritizes energy performance of buildings since, “the promotion of energy efficiency and renewable energies” is one of the key objectives and priorities for assistance under the Institution Building component.

Furthermore, in the MIPD 2011-2013, it is stated that, support in the Energy sector is also strongly contributing to the Europe 2020 strategy in the area of “Climate change, energy, transport” by supporting the reduction of greenhouse gases, increased use of renewable resources and the promotion of energy efficiency. It will also contribute to the priority area of competitiveness.

In the Energy sector, the first objective is increased capacity and better alignment in the energy efficiency field. This objective is one of the key priorities for Turkey, derived from the NPAA and DP and the strategies of the relevant laws concerning energy efficiency. The energy efficiency is also among the priority of the Accession Partnership.

2.5 Link with National Development Plan / Strategic Coherence Framework (where applicable)

In the 9th National Development Plan under the heading of “Improving the Energy and Transportation Infrastructure” it has been mentioned that along with the economic growth and population increase, significant increases were observed both in primary energy and electricity consumption. Also it aims to develop effective implementation mechanisms for increasing the energy efficiency.

The 9th development programme also puts utmost attention to the energy efficiency by stating that while meeting the energy demand; environmental damages will be kept at the minimum level and energy will be used in the most efficient and economical manner at all stages from generation to final consumption. Furthermore, the plan foresees that measures will be taken to control and reduce greenhouse gas emissions originating from transport, energy, industry and residential sectors in order to increase energy efficiency and realise energy savings.

In the Mid-Term Programme (2010-2012) under the Improving the Energy and Transportation Infrastructure heading it has been targeted that;

- The main objective of the energy policy is to meet the energy needs of an increasing population and a growing economy in a continuous and secure manner at a minimum cost
- Effective implementation mechanisms for increasing the energy efficiency will be developed.

2.6 Link with national/ sectoral investment plans (where applicable)

In 2010-2014 Strategy Plan of Ministry of Environment and Urbanisation (MoEU), under 3rd strategic goal it is indicated that; “measures will be taken to improve energy efficiency in buildings for public and private sector.”

According to The Turkey National Climate Change Strategy Document 2010-2020 (approved in 2010), Energy Certificates will be prepared for new and existing buildings. Additionally, energy efficiency potential in the buildings will be determined. For the public buildings, energy consumption is planning to be improved in long term.

3. Description of project

3.1 Background and justification:

Turkey’s greenhouse gas (GHG) emissions are growing rapidly; the primary focus on energy efficiency is driven by the imperative to address CO₂ emissions. According to the regular communication of Turkey to the UNFCCC, total GHG emissions rose from about 170 million tons of carbon dioxide (CO₂) equivalent in 1990 to about 373 mtCO₂ in 2007. Emissions from the energy sector have grown the fastest over this period, and the energy sector accounts for the majority (77 percent) of GHG emissions in the country. This increase in the emissions also presented in the Government’s **1st National Communication on Climate Change**. Moreover, according to 2009 data obtained from Ministry of Energy and Natural Resources (MoENR), Turkey’s total energy consumption was 80.6 million TEP in that year. The building sector had a share of 37% in final energy consumption with 29.8 million TEP.

Figures obtained from calculations made according to proper insulation criteria laid down in “TS 825 Heat Insulation Standards in Buildings” and “**Energy Performance of Buildings**” provides an energy saving potential of 30-50% in the buildings.

In order to prepare for the EU accession, Turkey aims to align its institutional framework and legislation with the EU acquis on energy efficiency.

In Turkey, in general, the focus of policies and legislation is on construction of new buildings and applying energy certification, rather than on rehabilitating existing buildings and urban areas for fostering energy efficiency. Energy certification for the new buildings will be obligatory after 1st of January 2011, but for the existing buildings the deadline is 2017. However, this shall not sufficiently solve the problem of high energy consumption and greenhouse gas emissions, since the building stock in Turkey consists for up to 80% of existing buildings.

Nevertheless, the **Energy Efficiency Strategy for Turkey** states that “*technical/financial assistance to final consumers through effective instruments- information, consulting, and soft loans - assisting final consumers in implementing the proper measures to achieve better efficiency*”. Therefore, realization and support of these kinds of capacity building and awareness projects are rather vital. Furthermore; The Government’s updated **Energy Strategy** and **Turkey’s Ninth Development Plan (2007- 13)** both aim to ensure efficiency, while keeping environmental effects at a minimum level. The Government is particularly focused on developing and scaling up energy efficiency investments in various parts of the economy - industry, municipal facilities, public and residential buildings, appliances and equipment, lighting and etc.

To achieve significant reductions of energy use in existing buildings, it is important to perform future large-scale retrofitting of buildings in a systematic and controlled manner. Also, refurbishment, if applied, will become a market for the whole construction sector. Within the scope of this project, **two retrofit implementations will be applied to the selected buildings to be financed by the national budget.**

Involvement of ministries, municipalities, other relevant organizations and professional chambers is crucial as stakeholders in activities related to awareness raising and dissemination of the implementation of EU directives. The municipalities, in that sense, are responsible from the approvals of construction permits and also accommodation permits for the buildings built in accordance to legislation requirements. Enhancing the implementation capacity of municipalities that are responsible for regulating construction projects will also be a determinant factor. Developing efficient municipal capacity is thus vital to improve energy efficiency in Turkey.

The Ministry of Environment and Urbanization (MoEU) prepared two important by-laws with Ministry of Energy and Natural Resources regarding the Energy Efficiency. First one is; “Foundations and methods concerning the distribution of heating and hot water expenditures at central heating hot water systems”. The main aim of this by-law is to reduce heat loss from buildings, to provide energy-effectiveness and to regulate principles and practical procedures accordingly. The second by-law “Energy Performance of Buildings” that entered into force on the date 05.12.2009. This by-law is the most comprehensive legislation in Turkey on energy performance in buildings, in parallel with EPBD of EU (Energy Performance of Buildings Directive 2010/31/EU). Energy Performance of Buildings (EPB) by-law covers the methods and principles related to the energy performance of heating, cooling, thermal insulation, hot water, electrical and lighting systems in dwellings, commercial and service buildings.

Recently the project ‘Strengthening the Capacity of The Ministry of Environment and Urbanisation (MoEU) for Improving the Energy Performance of Buildings’ has been completed. Two reports have been published: a Gap Assessment report and a Needs Assessment Report for the Ministry of Environment and Urbanisation relating to implementation of the EPB directive. Overall the needs report has identified 6 major need to be met which are also very much in line with the overall construction of this particular project. The main needs are; (i) Policy and legislative development, (ii) strengthen organization of institutions responsible for energy performance of buildings, (iii) capacity development of MoEU and other stakeholders, (iv) public Relations and Awareness, (v) financial Support and other incentives for improving energy efficiency in buildings, (vi) EU Assistance and international cooperation.

With these in mind, this project aims to address the gaps and needs regarding the current energy efficiency legislation and institutional framework for new and existing buildings in Turkey and to align these with the European policies and directives related to energy efficiency in buildings.

3.2 Assessment of project impact, catalytic effect, sustainability and cross border impact (where applicable)

The project will promote cost savings and energy efficient building designs which are optimizing the use of the available resources and can go beyond the obligatory EE requirements of new and existing building stock, while not compromising the aesthetical and functional aspects.

Through different technical assistance activities to improve and recognize the quality of audits and to improve municipal energy planning and in co-operation with other related donor initiatives in Turkey, the project is complementing the recently adopted, EU consistent legal requirements by emphasizing more market driven approaches.

Many other chain benefits described below can also be obtained by improving energy efficiency infrastructure through the activities planned in this project:

- Reduced energy costs to building owners or renters, avoiding “fuel poverty”, to lower the energy bill;
- Positive economic benefits from the created jobs related to improvement activities in EE in buildings and new systems and equipment;
- Reduce GHG and CO₂ emission caused by the energy usage in buildings and will also be able to have an active role in combating climate change on a global level.
- Economic benefits (additional turnover, profits and employment) for companies delivering retrofit equipment and construction firms and market opportunities for ‘green companies’ (such as renewable energy providers, architects, engineers, construction firms).

The project impact is also expected for all actors of concern (professional groups, homeowners, construction sectors, insurance companies etc.). The methodology to be developed in the project will provide clear knowledge of retrofit standards and necessities for the existing buildings. In addition, methodological guidance for energy retrofitting of buildings adapted to the different existing models in different regions and planning will increase the replication of projects. Increasing the living comfort due to lower expenditures on energy will increase the value of a dwelling.

For sustainability reasons, the results and activities will be used as a reference for further activities of MoEU. Especially for the awareness raising activities on EE which is one the

important outcomes of this project will make spill-over effects to the other related sectors and will create awareness in the target group regarding the energy efficiency in the building sector. Furthermore, renewable energy and natural sources will be use in selected existing buildings Moreover, long-term sustainability of the project will also be in the form of the newly developed systems and tools which will be developed and produced within the proposed activities and will stay functional and effective in the Ministry. On the other hand, the roadmaps, policy and strategy papers will form basis for future policy making and implementation processes. The retrofitted buildings will be a best practice in the area of energy efficiency of buildings and will act as a role model for future implementations.

Thus the project results are foreseen to have catalytic effects on application of energy efficiency in the building sector of the country, by setting up the standards and criteria on the subject. Moreover, Turkey will contribute to the goal of CO2 emission reduction due to the implementation of the energy retrofit.

3.3 Results and measurable indicators:

Results	Objectively verifiable indicators
Result 1: Systems, Tools for BEP and institutional capacity was developed by carrying institutional analysis and evaluation of the current situation	• Approved research Report on the topics of current situation for Turkey and EU countries and comparative studies, gap and needs reports are produced. • HR Strategy report for MoEU Prepared and Approved by Ministry • Future sustainable training programme in place • Research report on energy saving potential and financial supporting tools approved by Ministry • 25 technical staff of EE department trained as trainers on specific subjects on EE. • 150 technical staff of MoEU trained on EE of buildings. • 200 Local architects and engineers of 4 regions are trained in training programmes. • 200 brochures prepared and distributed, • 1 workshop organised with the participation of 60 people. • 1 Simulation Model prepared •
Result 2: Improved Policy and Legislation for implementing BEP	• 1 Proposal report for revision of BEP prepared for adaptation of most updated of EU legislation about energy efficiency • Revised Legislation approved by Ministry by the end of project for adaptation of new energy efficiency legislation of EU • New legislation started to used by ministry after promulgation in official gazette • BEP started to use (3500 users with in 2 years

	after finish of project)
Result 3: Retrofit projects and feasibility reports for existing two buildings prepared	• 3 workshop organized for selection of suitable sample of retrofits • Prepared and approved plan for 4 heat zones and 8 alternative retrofitting plans • 8 Feasibility studies completed for selection of suitable samples. • Works and Supply Tender dossiers in particular BoQ and Technical Specifications respectively inline with the EU standards for the 2 pilot projects prepared • 2 buildings reconstructed and energy performance measured (before and after)
Result 4: Awareness and Knowledge raised on EE in buildings and retrofit applications at central and local level	• 10 new projects awarded • Organized 4 workshops in 4 heat zones • 1.000 documents (guidelines, handbooks, brochures, etc.) for the relevant stakeholders (private sector, municipalities) were published and distributed to the target group • 1 Energy Efficient and Green Building Membership system has been developed and is available by means of web site portal • 1 Existence of an approved Final Report with main findings of the project • Organized Closing Conference for 250 people including stakeholders and relevant public institutions in Ankara for one day, ensuring that project results are multiplied and distributed • Existence of an approved and functional energy efficiency web-site and its access by users is maximised

3.4 Activities:

Result 1: Systems and Tools for BEP developed by carrying institutional analysis and evaluation of the current situation

Act.1.1: To make analysis and evaluation of the current situation (Taking stock);

A research will be carried out regarding the existing situation regarding all aspects of implementation of BEP and retrofit for existing buildings. Both the institutional, legislative situation and available systems and tools (including retrofit, building data etc) available will be assessed, compared with EU countries and gaps and needs will be identified. This study will build upon the recently undertaken gap and needs assessment reports prepared within the framework of the project “Strengthening the institutional and management capacity of the MoEU in the field of building energy efficiency sector”.

Act. 1.2 To conduct Training Needs Analysis (TNA)

A training needs analysis will be carried out for the MoEU and some other relevant stakeholders.

Act. 1.3 To produce inception report and work plan

An inception report and work plan will be drafted by the Technical Assistance Team in the first 2 months of the project with a detailed approach, work plan and stakeholder overview relevant for execution of this project.

Act. 1.4 To develop HR Strategy for implementation of BEP

An HR Strategy will be developed for the MoEU regarding the implementation of BEP. Important elements of the strategy to be elaborated are recruitment and retaining of staff (especially economists), defining responsibilities and tasks, career development and training plan.

Act. 1.5 To conduct training programmes for MoEU

At least 4 training programmes (modules) will be organized for each 3 days with the participation technical staff working in the central and provincial organisation of MoEU. Special focus will be given to the compliance with the energy efficiency standards during the design of the programmes. The modules will depend on the training needs analysis, but at least the following topics should be covered comprehensively:

- Energy Efficiency legislation,
- Energy Efficiency standards and best practices in the EU member states
- Renewable Energy Systems for Buildings,
- Project Cycle Management for EU Funded Projects,
- Calculation methodologies (BEP-TR, Energy Plus, SAP etc.)
- Green Building Design (LEEDS, BREAM etc.)
- Training of Trainers for energy labelling of new and existing buildings.

In total about 150 staff of central and provincial staff will be trained.

Act. 1.6 To organize of at least two study visits

Study visits of about 6 days will be organized to improve the expertise and know-how on energy efficiency, the usage of renewable energy in buildings, financial support mechanisms and best practices of retrofit projects [study visit to the selected countries which have solid experience on energy efficiency implementations in buildings with 6 EE staff of EE department for each trip.]

Act. 1.7 To organize regional seminars

At least 4 seminars in 4 regions of about 3 days will be organized for the EE and RE to integrate related stakeholders into the legislation revision process with the participation of 50 participants in each region of the relevant stakeholders (Municipalities, Provincial Branches of MoEU, Turkish building industry including local architects, building engineers, construction industry, planners and home owners) for each.

Act. 1.8 Participation of MoEU staff in international conferences and activities

Under this activity attendance of at least 10 staff in International Conferences will be promoted (for example, EU Sustainable Week, IEE, BUILD-UP etc.)

Act. 1.9 To develop building data inventory

To undertake an inventory on data availability in order to create a simple (sample) database on a representative typology of buildings in the 4 climate zones for development of a simulation model.

Act. 1.10 To develop simple energy performance simulation model

A model for buildings will be developed with use of sample technical data, energy performance and cost and other economic data (including econometric relations) and cost optimization. The model should contain at least a number of representative building typologies (residential and non residential) for each of the 4 climate zones in Turkey. The new simulation model will be published in the MoEU web-site.

Result 2: Improved Policy and Legislation Framework for implementing BEP

Act. 2.1. To conduct research and workshops on energy saving potential and financial supporting tools

This activity is about organizing desk research regarding a market segment analysis of energy performance in new and existing residential and public buildings. The research will determine the energy saving potential based upon realistic measures that can be implemented on a local level. Furthermore the research will identify potential financial supporting tools and instruments for EE in buildings, energy auditing, energy performance contracts. The research will be complemented by holding workshops with key relevant stakeholders (Treasury, banks, energy consultancies, market stakeholder, etc) with a participation of about 50 people in Ankara and at the end the research report will be disseminated to stakeholders for example by publishing it on a website. Targeted raising of awareness with market stakeholder emphasizing that implementing the identified energy efficiency measures provides promising market opportunities (technology providers, architects, building companies, etc.).

Act. 2.2 To draft strategy for implementing BEP and revision of the legislation

- A strategy for implementation of BEP with policy options and proposals for revision of Turkish legislation will be drafted. The strategy will propose policy options, legislation to be aligned with the EU Directive and incorporate the findings from the Retrofit demonstration projects in the finalisation phase.
- A strategy for retrofit of existing buildings for the four heat zones will be prepared. For the preparation of draft legislation, consultants will make use of the results of the retrofit demonstration projects by for example comparing site visit analysis reports and district research report. Drafting a report with a proposal for integration of principles and standards of energy efficiency retrofitting of buildings into the existing legislation including draft legislation/communiqué.
- A roadmap for financing support through Energy Performance Contracting (EPC) will be produced.
- A roadmap for energy performance certification especially for existing buildings will be prepared.

Act. 2.3 To organize collaboration and protocols of collaboration with key institutions

- To organize good faith protocols with Ministry of Finance, Turkish Treasury and Ministry of Development for optional energy efficient solutions in buildings including renewable construction materials with the support of financial instruments to municipalities, private initiatives and households.
- To organize agreements with Bank of Provinces with Municipalities for the supply of low interest rate credits.

- Agreements with public and/or private banks for the supply of low interest rate credits to households.
- Agreements with energy (electricity and gas) suppliers on activities to improve energy efficiency of households.
- To organise a workshop with the association of banks for development and implementation of a financial scheme to develop a green credit system for EE in buildings as EU countries. The crediting system will be used for financial support to project developers and facilitate technology penetration energy performance contract of EE building construction.
- Good faith protocols about applying efficient construction methods will be prepared with TOKI, MoENR, CSOs and municipalities.
- Agreement on awareness campaigns with MoENR and Professional Chambers on the media campaigns on energy efficiency towards households and members of organisations.

Result 3. Retrofit projects and feasibility reports for existing two buildings prepared

Act. 3.1 To conduct preparatory research and site selection on retrofit

Under this activity the appropriate regions for the retrofit will be selected. Moreover at least 3 dialogue start-up workshops will be organized in order to identify problems and needs for retrofit of buildings with tenants, owners, professionals (architects, urban planners, civil engineers, energy audits, etc...) construction firms and local administrations. The research for establishing pre-retrofitting conditions will include:

- Walkthrough Energy Audit.
- Organizing questionnaire for identification of problems and needs to building owners or users.
- Dialog start up workshops. (tenants, owners, contractors, administrations)
- Drafting 8 alternative retrofitting plans for 4 heat zones in Turkey.
- Feasibility study (including cost-benefit analysis of 8 project plans) and recommendations for selection of two retrofit projects.
- Building Selection for retrofit (including inner surrounds 1 residential, 1 public)
- Developing requirements and technical specifications and tender dossier for retrofit

Act.3.2 To evaluate two selected buildings for Retrofitting

The renovation of the two selected buildings will be supported under this activity through conducting energy performance measurement and certification studies and through assisting the works and supply tender dossiers in particular preparation of BoQ and Technical Specifications respectively, inline with EU standards.

These works and supply tenders will be fully financed under national funds separately from this technical assistance contract for the 2 retrofit implementations.

Energy performance measurement and certification before and after the retrofit are important elements of this activity. The sequence of this activity is as follows.

- Energy certificate of the selected buildings before retrofit.
- Assisting the works tender dossier preparation during the composition of BoQ (Bill of Quantities) in EU standards for retrofit to 2 pilot buildings and implementation of energy retrofit to 2 pilot buildings by MoEU.
- Assisting the supply tender dossier preparation of during the composition of TS (Technical Specifications) in EU standards for retrofit to 2 pilot buildings.
- Performance assessment by monitoring, metering and measurements after implementation of the retrofitting projects by national funds.
- Energy certificate of the selected buildings after retrofit.

Construction work and supply of equipment for retrofit application is not part of this activity and this technical assistance contract.

Construction work and supply of equipment for retrofit application will be a part of a separate works and supply contracts to be fully financed from the national financial resources.

Result 4. Awareness and knowledge raised on EE in buildings and retrofit applications at central and local level

Act4.1 To prepare promotion materials and guidelines

- Publishing guidelines, technology catalogues, brochures and website on energy efficiency in buildings and retrofit
- Drafting brochures on financial support instruments in collaboration with financing institutions
- Developing a website for Awareness campaigns about retrofit applications.
- Developing Energy Efficient and Green Building Membership systems by means of web site

Act. 4.2 To organize International Experts Conference on energy efficiency recent knowledge, best practices and tools (2 days per year) with the participation of Universities, civil servants, private sector, CSOs etc (participation around 250 people).

Act. 4.3 To organize 4 workshops on the results of the two retrofit projects for the MoEU staff (central and provincial branches of the Ministry) in each of the four heat zones.

Act. 4.4 To organise competition between municipalities and architects on energy efficiency in buildings

- Carrying out an architecture contest and finance incremental cost of the best 10 new projects stimulate architects to consider energy efficiency measures in their projects, building capacity in the country and providing more pilot project examples.
- Organisation of a contest between municipalities on the best retrofit of existing buildings.
- Organize a ceremony to award architects, Municipality and the owner of the building for the best practice on EE in buildings.

Act. 4.5 To organize four conferences regarding results of the project and retrofit studies in each of the heat zones with public administrations, the construction sector, housing associations, Union of Chamber of Architects and Engineers e.g., universities and housing owners/tenants, CSOs, etc. for integration of principles and standards of energy efficiency policies and retrofitting of buildings to the existing legislation.

Act 4.6 To organize project kick off and closing conferences

A kick off conference will be organized for 250 people including stakeholders and relevant public institutions in Ankara for one day. A closing Conference will be organized the participation of 250 people for all relevant public, private institutions, governmental, non-governmental organizations in Ankara for one day.

Act. 4.7 To Draft project final report

3.5. Conditionality and sequencing:

N/A

3.6 Linked activities

- Strengthening the Capacity of The MoEU for Improving the Energy Performance of Buildings-SEI project-(ALTUN/MPWS/TR0702.28-01/fwc/011
- Improvement of an Existing Public Building for Energy Efficiency (cooperation with NEDO- a Japanese Governmental Institution)
- 100 Public Buildings Project- Determination and Improvement of Energy Efficiency of 100 Public Buildings located in Ankara
- To Improve the Energy Efficiency in Buildings at Turkey (GEF 4)
- TR 0303.06 Improvement of Energy Efficiency
- TR05.03.08 Increasing Public Awareness on Energy Efficiency in Buildings

3.7 Lessons learned – previous projects

The lessons learnt during the earlier projects confirm that to effectively promote energy efficiency among the targeted sector(s) or end user groups, there is a need for a holistic approach addressing simultaneously the legal, regulatory, institutional, awareness, capacity, financing and other barriers, from which list a single barrier can prevent the targeted energy efficiency investments of taking place. The lessons learnt also confirmed that while many of these barriers could be successfully defined already at the project development stage, there were many others, which emerged only during the actual implementation of the project, thereby calling for a project design that beside satisfactorily addressing the already identified barriers (including effective tools to monitor this progress), leave enough flexibility for the management of the project to adapt the project activities to unforeseen barriers and changing circumstances. Finally, while recognizing the need for a holistic approach, the experiences have confirmed that it will be very difficult, if not impossible to address all the possible barriers in the frame of a single project, but the key to success will be in active co-operation with the other donors, by building on complementary design and implementation of activities that each donor and their local partners have comparative advantage for.

The proposed project will build on the capacity and experience generated by the previously funded project (Strengthening the Capacity of the (MoEU) for Improving the Energy Performance of Buildings) and take the next step with a specific focus on the buildings market by addressing the complementary technical assistance needs of the municipalities in this field (encouraged by the provisions of the recently adopted Energy Efficiency in Buildings by-law) as well as new end-user groups such as owners or managers of private residential and service sector buildings. These are activities that have not been or are not covered by past or ongoing projects. Therefore, the project is designed in a way to follow up the activities implemented under the above- mentioned project, taking into account Turkey's EU accession process and the state of the energy sector in Turkey.

4. Indicative Budget (amounts in €)

			SOURCES OF FUNDING										
			TOTAL EXP.RE	TOTAL PUBLIC EXP.RE	IPA CONTRIBUTION		NATIONAL PUBLIC CONTRIBUTION					PRIVATE CONTRIBUTION	
ACTIVITIES	IB (1)	INV (1)	EUR (a)=(b)+(e)	EUR (b)=(c)+(d)	EUR (c)	% (2)	Total EUR (d)=(x)+(y)+(z)	% (2)	Central EUR (x)	Regional/ Local EUR (y)	IFIs EUR (z)	EUR (e)	% (3)
All Activities													
Service Contract	x	–	3.333.500		3 000 000	90	333 500	10	333 350				–
TOTAL IB			3.333500	3.333 500	3 000 000	90	333 350	10	333 350				
TOTAL INV			-		-								
TOTAL PROJECT			3 333 500	3 333 500	3 000 000		333 350		333 350				

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

Contracts	Start of Tendering	Signature of contract	Project Completion
Contract 1.1 Technical Assistance	QR 3 2012	QR 1 2013	QR 4 2014

Tender dossier will be drafted by support of SEI

The total project duration is 24 months. Tender procedure is expected to be launched at 3rd quarter 2012 and the contract is to be signed in the 1st quarter of 2013.

Implementation schedule of the TA is designed in a way to cover all foreseen activities of the project including awareness-raising activities.

6. Cross cutting issues (where applicable)

6.1 Equal Opportunity

MoEU is an equal opportunity employer. Selection of staff and other personal to work on the projects will be based on objective assessments of qualification and experience, without considering the gender issue. Equal participation of women and men will be considered in each activity to be implemented and stakeholder engagement through public participation will be fostered by equal participation. An appropriate men/women balance will be sought on all the managing bodies and activities. Records of participation in all project related activities will reflect this and will be kept with the project documentation. Attention will be paid to the ratio of women participants to the trainings, seminars and study visits. Equal Opportunity related data and information will be provided and will be integrated in the reports where applicable.

6.2 Environment

The expected outcomes of the project are directly related with the improvement of state of the environment in Turkey. This project will help to protect the environment and have a highly considerable positive impact on environment by creating sustainable use of energy resources, public consciousness and awareness. The system for renewable energy resources, data bases and legislative studies will help for affective monitoring, reporting, sharing and evaluating the energy recourses to protect environment and to control it. Each activity will be implemented in an environmental friendly way and all the materials and publications to be developed will be recycled – if possible.

6.3 Vulnerable Groups and Minorities

According to the Turkish Constitutional System, the word minorities encompass only groups of persons defined and recognized as such on the basis of multilateral or bilateral instruments to which Turkey is a party. The project will apply the policy of equal opportunities for all groups including vulnerable groups. Vulnerable groups, such as youngster, elderly and disabled groups, are the parties who are most affected by the efficient energy use for heating, lightning, hot water.

6.4 Civil Society/ Stakeholder Involvement

This project will help to improve awareness and consciousness of civil society on energy efficiency in buildings. Campaigns, simulation models, award ceremonies, good faith protocols, media press, published documents will be guidance to sustain energy efficiency in

buildings for civil society. Furthermore, workshops and trainings will provide close cooperation and consensus with all stakeholders and the MoEU.

ANNEXES

- 1- Log frame in Standard Format
 - 2- Amounts contracted and Disbursed per Quarter over the full duration of Programme
 - 3- Description of Institutional Framework
 - 4 - Reference to laws, regulations and strategic documents:
 - Reference list of relevant laws and regulations
 - Reference to AP /NPAA / EP / SAA/ Progress report
 - Reference to MIPD
 - Reference to National Development Plan
 - Reference to sector strategies and national / sector investment plans
 - Reference to 2011 progress report.
 - 5- Details per EU funded contract (*) where applicable:
 - For TA contracts: outputs expected from the contractor and indicative budget breakdown
 - For twinning contracts: main components and activities foreseen, indicative budget breakdown, profile of the MS project leader, resident twinning advisor and key short term experts as well as name and position of the project leader of the BC
 - For grants schemes: components of the scheme, eligible target group and activities (in case of direct grants, justification for selection of grant beneficiary without call for proposal)
 - For supply contracts: reference to feasibility study as well as indicative list of items, cost estimate, intended beneficiary, indication on how detailed technical specifications will be prepared, provisions for maintenance + section to be filled in on investment criteria (**)
 - For works contracts: reference to feasibility study for the construction works, identification of the site, indicative list of works to be completed and cost estimate, indication on how technical specifications will be prepared, provisions for maintenance as well as a section on investment criteria (**); account of services to be carried out for the service part of the contract
- (*) non-standard aspects (in case of derogation to PRAG) also to be specified
- (**) section on investment criteria (applicable to all supply and works contracts):
- Rate of return
 - Co-financing
 - compliance with state aids provisions
 - Ownership of assets (current and after project completion)
- 6- List of Abbreviations

ANNEX 1: Logical framework matrix in standard format

LOGFRAME PLANNING MATRIX FOR Project Fiche		Programme name and number	Improving Energy Efficiency in Buildings (IEEB) TR2011/0315.20
		Contracting period 2 years after the signature of the Financing Agreement	Disbursement period 1 year after the end date for the execution of contracts
		Total budget: 3 333 500 EUR	IPA budget: 3.000 000 EUR
Overall objective	Objectively verifiable indicators	Sources of Verification	
The overall objective of the project is to improve the energy efficiency in Turkey to generate economic gains and to make a positive contribution for against climate change	• A strategic approach towards EU alignment and energy chapter in the field of EE in buildings has been adopted by implementation of new EE measures, legislation and standards by the second quarter of project. Strategies for capacity building of the MoEU in EE developed by training of the staff. By the first quarter of project. Increase of EE in buildings has	• TURKSTAT statistics • EUROSTAT statistics • CIS statics • EC Sectoral and Progress Reports • MoEU Annual reports • Annual Reports of Chamber of Mechanical Engineers • OECD Annual Reports • Building permit applications and the associated design documents of new buildings.	

	been achieved (10% savings on energy consumption after 5 years of the project completion) • Reduction of greenhouse gas emissions realized (at least %5 mitigation has been realized over ten years period)	• Project monitoring and evaluation reports and related surveys.	
Project purpose	Objectively verifiable indicators	Sources of Verification	Assumptions
The project purpose is to improve energy efficiency in buildings through better design of new buildings and retrofit of the existing ones.	• Targeted programmes in place, promoted and know-how transfers have been achieved and all measures for sustainability, including training and publications have been assured by the end of Project. • EE department has been strengthened by training on specific subjects, approved. job descriptions and an HR manual with tasks and procedures by the second quarter of project. • The feasibility report of the 2 Retrofit projects prepared by the second quarter of project. • 4 Conferences with total 160 people was organized to increase	• EC Regular and Progress Reports • Annual Reports of the MoEU • Organization Scheme of MoEU • Project Monitoring and Evaluation Reports • Outcomes of Training, Workshops and Study Visits. • MoEU Annual reports on Energy Labeling of buildings • Annual Reports of UCTEA (Union of Turkish Engineers and architects) • Organisational chart of the EE Department.	• Turkish Government continues its support for the revision of EE by-legislation in buildings and notifications and give importance to project implementation process • Relevant stakeholders and energy consumers continue to be committed to the execution of energy efficiency measures. • Effective communication and cooperation between the relevant stakeholders • Good coordination of the project activities with high level support from the relevant institutions • Timely start and progress of the project within the foreseen period.

	the awareness of the local architects and engineers on best EE practices in the new building design and retrofitting of existing buildings by the third quarter of project. • 3 good faith protocols and/or memorandum of Understandings (MoU) signed between MoEU and Local Authorities and relevant stakeholders for cooperation with in one year following the end of project. • Increased number of Retrofit applications in Turkey (30% of existing buildings by 2017) • Increased number of energy labeled buildings.(all existing buildings have to get Energy Certificate by 2017)		
Results	Objectively verifiable indicators	Sources of Verification	Assumptions
Result 1: : Systems ,Tools for BEP and institutional capacity was developed	• 25 technical staff of EE department trained as trainers on specific subjects on EE by the second quarter of project • 150 technical staff of MoEU	• Approved research Report on the topics of current situation for Turkey and EU countries and comparative studies, gap and needs reports are produced. (3	• Timely start of the project. • High level support for the project. • Effective establishment of the Project Coordination Unit within the Ministry. • Strong participation and willingness

	trained on EE of buildings by the third quarter of project • 200 Local architects and engineers of 4 regions are trained in training programmes by the end of the project. • 5.000 brochures prepared and distributed by the end of projects • 1 workshop organised with the participation of 60 people by the third quarter of project • 1 Simulation Model prepared by the end of project.	reports) • • Project inception report • Participant List / Attendance Sheets training programmes • Certificates for participants trainings • Project Progress Reports • Research report on energy saving potential and financial supporting tools. • Approved Research report published on the website • Project Progress Reports • Web-site • Project Technical Reports • Attendance Sheets of Trainings	from the Ministry staff • Timely progress of the project activities • Good coordination between the consultant (s) and the Ministry • Appropriate staff participated in relevant trainings • Timely progress of the project activities • Good coordination between the consultant (s) and the Ministry Strong participation and willingness from the Ministry staff
Result 2: Improved Policy and Legislation for implementing BEP	• 1 Proposal report for revision of BEP prepared for adaptation of most updated of EU legislation about energy efficiency • Revised Legislation approved by Ministry by the end of project for adaptation of new energy efficiency legislation of EU	• Proposals and project progress reports approved by ministry • Official Gazette • • • Ministry Web-site statistics •	• The project outputs will provide and include sufficient, optional and attractive financial tools of incentives for the energy efficiency in buildings for enlargement of the implementation. • Good Coordination among the project team and the stakeholders • All related stakeholders will have

	• New legislation started to used by ministry after promulgation in official gazette • BEP started to use (3500 users with in 2 years after finish of project)		willingness to implement and sustain EE instruments in buildings. • Timely progress of the project activities • High Level support for the legislation revision process
Result 3: Retrofit projects and feasibility reports for existing two buildings prepared	• 3 workshop organized for selection of suitable sample of retrofits by the end of project • Prepared and approved plan for 4 heat zones and 8 alternative retrofitting plans by the second quarter of project • 8 Feasibility studies completed for selection of suitable samples by the second quarter of project. • Works and Supply Tender dossiers in particular BoQ and Technical Specifications respectively inline with the EU standards for the 2 pilot projects prepared by the end of project • 2 buildings reconstructed and energy performance measured (before and after) with in two years following the end of project	• Project Progress Reports • Approved Energy certificates for buildings • Approved Project Technical Reports • Start-up Meeting Minutes • Award Notice of the works contract • Technical Reports of the Works Projects	• Good coordination between the consultant (s) and the Ministry • Strong participation and willingness from the Ministry staff • Timely progress of the project activities • Local authorities and local energy service providers are willing to monitor and inspect the EE in building implementation phase.

Result 4: Awareness and Knowledge raised on EE in buildings and retrofit applications at central and local level	• 10 new projects awarded with in two years following the end of project • Organized 4 workshops in 4 heat zones by the end of project • 5.000 documents (guidelines, handbooks, brochures, etc.) for the relevant stakeholders (private sector, municipalities) were published and distributed to the target group by the end of project • 1 Energy Efficient and Green	• Approved guidelines, handbooks and brochures • Project Progress Reports • Project Final Report	• Timely progress of the project activities • Ministries will voluntarily label their public buildings. • Households will voluntarily implement the obligatory energy efficiency measures for their buildings. • Strong attention from the media and press.

	Building Membership system has been developed by means of web site portal by the end of project • 1 Existence of an approved Final Report with main findings of the project by the end of project Organized Closing Conference for 250 people including stakeholders and relevant public institutions in Ankara for one day by the third quarter of project		
Activities	Means	Costs (3 000 000)	Assumptions
Act. 1.1: To make analysis and evaluation of the current situation (Taking stock) Act. 1.2 To conduct Training Needs Analysis (TNA) Act. 1.3 To produce inception report and work plan Act. 1.4 To develop HR Strategy for implementation of BEP	Technical Assistance Contract :	For Technical Assistance Contract:	• Timely progress of the project activities • All related stakeholders will have willingness to implement and sustain EE instruments in buildings. • High level support for the project • Effective establishment of the Project Coordination Unit within the Ministry • Experts recruited are high level and appropriate for the necessary tasks and obligations. • Appropriate staff participated in relevant trainings

Act. 1.5 To conduct training programmes for MoEU Act. 1.6 To organize of at least two study visits Act. 1.7 To organize regional seminars Act. 1.8 Participation of MoEU staff in international conferences and activities Act. 1.9 To develop building data inventory Act. 1.10 To develop simple energy performance simulation model Act. 2.1. To conduct research and workshops on energy saving potential and			
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financial supporting tools Act. 2.2 To draft strategy for implementing BEP and revision of the legislation Act. 2.3 To organize collaboration and protocols of collaboration with key institutions			
Act. 3.1 To conduct preparatory research and site selection on retrofit Act. 3.2 To evaluate two selected buildings for retrofitting			

Act 4.1 To prepare promotion materials and guidelines Act. 4.2 To organize International Experts Conference on energy efficiency Act. 4.3 To organize 4 workshops Act. 4.4 To organise competition between municipalities and architects on energy efficiency in buildings Act. 4.5 To organize four conferences regarding results of the projects and retrofit studies in each of the heat zones			
Act. 4.6 To organize project kick off and closing conferences Act. 4.7 To draft final			

report

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ANNEX II: amounts (in €) Contracted and disbursed by quarter for the project

Contracted **I-2013** **II-2013** **III-2013** **IV-2013** **I-2014** **II-2014** **III-2014** **IV-2014** **I-2015** **II-2015** **III-2015** **IV-2015**

Technical Assistance Contract	3.000.000											
Cumulated	3.000.000											
Disbursed	I-2013	II-2013	III-2013	IV-2013	I-2014	II-2014	III-2014	IV-2014	I-2015	II-2015	III-2015	IV-2015
Technical Assistance Contract	600.000		420.000		420.000		420.000		420.000		420.000	300.000
Cumulated	600.000 (20%)	600.000	1.020.000	1.020.000	1.440.000	1.440.000	1.860.000	1.860.000	2.280.000	2.280.000	2.700.000	3.000.000 (10%)

ACTIVITY IMPLEMENTATION SCHEDULE								
Planning Activities and Tasks	2013-I	2013-II	2013-III	2013-IV	2014-I	2014-II	2014-III	2014-IV
Activities								
Result 1: Systems, Tools for BEP and institutional capacity was developed								
Act. 1.1: To make analysis and evaluation of the current situation (Taking stock)								
Act.1.2. To conduct Training Needs Analysis								
Act. 1.3. To produce inception report and work plan								
Act. 1.4. To develop HR Strategy for implementation of BEP								
Act. 1.5. To conduct training programmes for MoEU								
Act. 1.6. To organize of at least two study visits								
Act. 1.7. To organize regional seminars								
Act. 1.8 Participation of MoEU staff in international conferences and activities								
Act. 1.9 To develop building data inventory								
Act. 1.10 To develop simple energy performance simulation model								
Result 2: Improved Policy and Legislation Framework for implementing BEP								
Act. 2.1. To conduct research and workshops on energy saving potential and financial supporting tools								
Act. 2.2. To draft strategy for implementing BEP and revision of the legislation								
Act. 2.3 To organize collaboration and protocols of collaboration with key institutions								
Result 3: Retrofit projects and feasibility reports for existing two buildings prepared								
Act. 3.1 To conduct preparatory research and site selection on retrofit								
Act.3.2 To evaluate two selected buildings for Retrofitting								
Result 4. Awareness and knowledge raised on EE in buildings and retrofit applications								
Act4.1 To prepare promotion materials and guidelines								
Act. 4.2 To organize International Experts Conference on energy efficiency								
Act. 4.3 To organize 4 workshops								
Act. 4.4 To organise competition between municipalities and architects on energy efficiency in buildings								
Act. 4.5 To organize four conferences regarding results of the project and retrofit studies in each of the heat zones								
Act 4.6 To organize project kick off and closing conferences								