

Demonstrating energy-efficient technologies in public buildings to raise awareness of the gains and provide guidance to implementing bodies on the development of a systematic approach for building retrofitting activities

Outputs

Next steps

Energetic School Retrofitting

- Selection of a typical school building in Kirikkale, for an energy efficiency and earthquake-safety retrofit design of a public school by German and Turkish specialists (in cooperation with the Ministry of National Education)
 - Kick-off workshop in Ankara with responsible Ministries in December 2017 and a second workshop in Munich in February 2018 to develop the strategy and concept of the retrofit in a participatory approach and demonstration of measures and best practices of school retrofitting in Germany.
 - Selection of the final retrofit concept at the third workshop in Ankara in March 2018
- Finalization of all design related drawings and tender documents for construction in May 2018
 - Consultancy for supervising and quality assurance during the construction process in summer 2018
 - Post-retrofit data collection, monitoring and evaluation processes of the school retrofit
 - Training of energy managers
 - An exhibition and training centre for students in the pilot school

Guideline for School Retrofitting

- Determining the aims, method, and content for the development of a technical guideline outlining the procedures, potential measures and criteria for energetic retrofits of similar school buildings across Turkey
- Building stock overview for this school type and identification of potential impact size of the guideline
- Preparation of the guideline using the results from the model school retrofit and other relevant experiences and information

Revision of New School Plans for Energy Efficiency

- Identification of school building plan types with the highest volume of new constructions in Turkey by the Ministry of National Education and first workshop
- Development of a methodology and approach for the revision of the plans and drawings
- Analysis and energy modelling of original school plans by a team of Turkish and German experts
- Alternative revisions specifying energy efficiency improvements of different ambition levels and costs for each climate zone

Outputs

Next steps

Energy Analysis for the Ministry of Environment and Urbanisation's Service Building

- Study visits to Germany with Ministry staff:
 - **Late 2014:** Trip to Frankfurt to see how municipalities instigate energy efficiency in public buildings
 - **May 2017:** Trip to Ludwig Börne School (Frankfurt) and the GIZ office building (DGNB certified) for illustrative purposes of energy efficiency renovation measures
 - **February 2018:** Trip to Frankfurt and Bonn to inspect several service buildings of high energy efficiency standards, including the European Central Bank
 - Energy audit of the Ministry of Environment and Urbanisation's service building in Ankara by a team of German and Turkish auditors
 - Assessment of the current condition of the building and identification of optimal measures for energy efficiency improvements
- Selection of prioritised measures and detailed planning to apply them in the service building
 - Creating a guideline on retrofitting public buildings and a checklist for best practice examples of energy efficiency measures for new buildings still being planned or constructed

Project for Energy Efficiency in Public Buildings in Turkey

Aziziye Mahallesi, Pak Sokak 1/109
Çankaya 06680 Ankara, Turkey
T +90 312 466 70 56
F +90 312 467 72 75
E alexander.haack@giz.de
www.giz.de
ee-turkey.org



On behalf of:



Federal Ministry
for the Environment, Nature Conservation,
Building and Nuclear Safety

of the Federal Republic of Germany

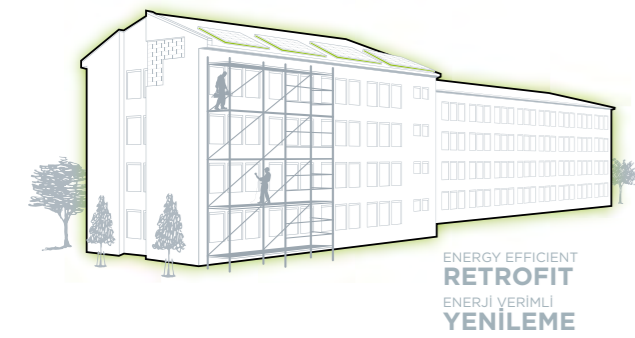
giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

This Turkish-German cooperation project is part of the German Climate Technology Initiative (DKTI) funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

Energy Efficiency in Public Buildings in Turkey

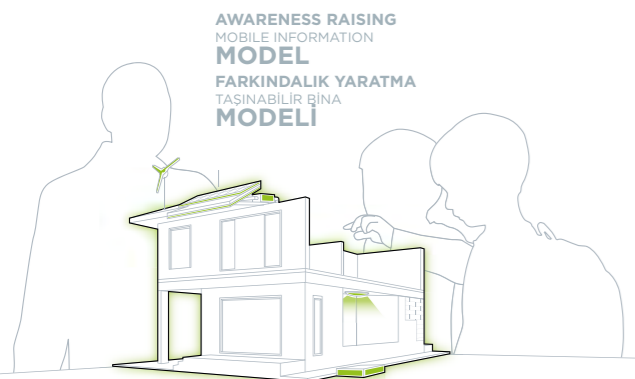


Project for Energy Efficiency in Public Buildings in Turkey



Project description

Full title	German Climate Technology Initiative (DKTI) Programme for Energy Efficiency in Public Buildings in Turkey
Commissioned by	German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)
Partner Ministry	Ministry of Environment and Urbanization of the Republic of Turkey (MoEU)
Implemented by	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and Directorate General of Vocational Services of MoEU
Overall term	2014 to 2018



Context

In the face of global climate change and concerns for energy security, Turkey now aims to substantially reduce its energy consumption by rolling out extensive energy efficiency measures in all strategic sectors; i.e. building, industry and transport. Turkey has already taken several steps in this direction, including its 2007 Energy Efficiency Act. Also, the Tenth Development Plan, which the Turkish Parliament adopted in 2013, contains extensive programmes targeting a minimum 20% reduction in energy intensity by 2023 compared with 2010. In line with this, the National Energy Efficiency Action plan suggests 55 actions across six categories to reduce total primary energy consumption by 14% between 2017-2023 for cumulative primary energy savings of 23.9 Mtoe. In the building sector, the national Energy Efficiency Strategy Paper provides for the transition of at least 25% of building stocks to modern sustainable forms of energy by 2023. Furthermore, in keeping with the 2011 National Climate Change Action Plan, annual energy consumption in public buildings and facilities – which serve as a role model – is scheduled to decrease by 20% within the same timeframe.



Objective

The overall objective of the project for Energy Efficiency in Public Buildings in Turkey is to improve the legal, technical and administrative framework conditions for the energy efficiency in public buildings. Launched under the German Climate Technology Initiative (DKTI), this Turkish–German cooperation project is helping to drive forward Turkey's sustainable economic and technological development. The approach concentrates on four specific components of activities.

A | Assisting the partner Ministry to build the capacity it needs to effectively enforce existing regulations and enhance the legal framework conditions for energy efficiency in public buildings

Outputs

Training of Trainers on the latest Buildings Energy Performance Software (BEP-TR)

- Two ToTs in Ankara in February, April-May 2017
- 228 people trained from various group of experts including Chambers of Mechanical Engineers, Civil Engineers, Architects and Electrical Engineers and private companies
- Creation of videos on how to use the software as part of the training materials

Next steps

- Elaboration of holistic training concept for the latest version of BEP-TR
- Further trainings on increasing the auditing capacity within the Ministry's provincial directorates
- A study on auditing mechanisms on EPCs in the EU

Nearly Zero Energy Buildings Concept for Turkey

- Study visit to a seminar entitled "Balancing Economic and Energy Efficiency While Implementing the Energy Performance of Buildings Directive" in Berlin in November 2017
- Detailed study on an international comparison of nZEB concepts and applications in countries with similar climatic conditions to serve as a guide on how to apply the concept in Turkey

Heat Pump Systems

- Preliminary work for a study on Application/ Adaptation of Heat Pump technology for public and private buildings in Turkey
- Elaboration of the study with technical specifications to be fed into an online tool
- Development of the online tool to support the selection of appropriate heat pump systems under specific climatic and structural conditions

B | Supporting the data and information base for decisions on energy efficiency actions in public buildings

Outputs

Energy Efficiency Database

- Preliminary study and a follow-up meeting among Ministries and other stakeholders to showcase various data management approaches and to make an initial assessment of the model type most suited to Turkey's requirements
- Study visit in May 2017 to Frankfurt Municipality's Department for Energy Management
- Improving and expanding existing databases, where possible following a holistic / combined approach and applying international best practices and experiences

Next steps

C | Fostering technology cooperation between Turkey and Germany/EU countries, with a view to enhancing know-how transfer in the private sector

Outputs

Energy Efficiency Technology Atlas for the Turkish Buildings Sector

- First consultation meeting at the Energy Efficiency Fair in Istanbul in January 2017
- Final consultation meeting at ENIPE Fair in Istanbul in January 2018
- Publication of the Energy Efficiency Technology Atlas and a roadmap to successful implementation
- Launch and dissemination of the publication and the roadmap in national / international events / fairs
- Follow-up activities for market support with selected private sector stakeholders to promote energy efficient technologies in Turkey

Next steps

Technology Cooperation

- Study Visit in May 2017 to Fraunhofer Institute for Building Physics
- Energy Transition Conference in September 2017 in Ankara with the participation of Fraunhofer Institute representative
- Identification of possible cooperation areas between Fraunhofer – TSE and IZODER through further workshops/ meetings to facilitate possible formalised cooperation

Private Sector Collaboration with Turkish German Chamber of Commerce and Industry (AHK)

- Pillar 1:** Business to business (B2B) event in Istanbul during ENIPE Fair in January 2018 with the participation of six German companies from the energy efficiency in buildings sector
- Pillar 2:** Business delegation networking trip to Berlin Energy Transition Dialogue 2018
- Pillar 3:** Initiating a sustainable R&D and business cooperation platform with the aim of facilitating know-how transfer and trade between Germany and Turkey

Academic Cooperation

- First draft of a curriculum between Beuth University and Middle East Technical University for a jointly organised summer school on energy efficiency in buildings and design for a full Master Programme
- Extending the summer school to a jointly organized Master Programme on Energy Efficiency in Public Buildings including engineering and architectural aspects

Mobile Demonstration of Energy Efficiency and Renewable Energy Technologies

- Feasibility study for a mobile demonstration unit to create awareness and inform the general public
- Construction of a building model to showcase energy efficiency and renewable energy technologies