

Questions for Panel Discussions 1-3:

Question 1 : Existing legislation and policies in your country: are they helpful or harmful for promotion of EE investments?

Answer 1 :

A number of governmental and other organizations are involved in promoting energy efficiency especially in industry in Turkey. The General Directorate of Renewable Energy (YEGM) have been formed with reorganization of former General Directorate of Electrical Power Resources Survey and Development Administration (EIE), in November 2011. YEGM is responsible on promoting, development of measures and conducting activities on renewable energy sources and energy efficiency area.

Energy Efficiency Law was adopted on May 2 2007. This law and its secondary regulation provide the legal basis and measures to promote and support energy efficiency increases, including establishing energy service companies (ESCOs), such as developing energy management system and Efficiency Improvement Project (EIT) and Voluntary Agreement schemes to encourage energy saving investments, energy efficiency increase in building and transport sectors, not allowed to sell the electrical appliances which do not meet energy efficiency requirements and increase awareness .

As it mentioned above Government also provides financial support to efficiency-increasing projects and voluntary agreements undertaking to reduce energy intensity. In this scope, projects having energy saving in electrical energy are supported with priority. 32 of energy efficiency projects for the industry have been decided to be supported. On the other hand Voluntary Agreements have been made by 22 industrial establishments so as to reduce their energy intensity. Supports for the training, audit and consultancy services of SME's up to the extend of 70% towards improving energy efficiency have also been provided to the enterprises. KOSGEB was assigned the task to facilitate the implementation of the Energy Efficiency Law and other activities to be carried out at the SME level.

A number of organizations provide incentives, soft loans or other support for EE, such as, TTGV, For energy efficiency projects, the Technology Development Foundation of Turkey (*TTGV*) can provide soft loans up to USD 1 million or up to 50% of the project budget (for a project duration of max. 1.5 years; repayment is over a 4-year period with the 1st year as grace period, while no interest is charged).

In Turkey, there is a considerable number of international finance corporations, development and cooperation agencies (such as the World Bank, European Bank of Reconstruction and Development, French Development Agency, German Bank of Development, Trade and Investment Agency of the UK, Japan Bank of International Cooperation etc.) that are either working to provide funds to the Turkish energy sector or still carrying on with preparatory work or research activities. Together with government guarantees and other guarantees, these funds from such agencies and corporations can be disbursed in the form of loans mostly through the Development Bank of Turkey and the Industrial Development Bank of Turkey for climate-friendly activities as well as investments.

Identification of measures in the energy-intensive heavy industry sector is gaining pace whereas periodic checks in other sectors -i.e. cement, iron and steel, ceramics and textiles- are still ongoing.

Projects to promote efficiency in these sectors are receivers of the World Bank support via the Industrial Development Bank of Turkey and the Development Bank of Turkey since 2009.

As can be seen above many EE Projects subsidized and supported by National and local authorities governmental institutions, national and international finance corporations.

Existing legislation and policies are helpful for promotion of EE investments in my country. Details are given annex 1.

Question 2 : National and local authorities, governmental institutions: what is their impact on EE market development?

As it is known energy efficiency is not a single market: it covers measures in a diverse range of end-user sectors, end-use equipment and technologies and consists of very large numbers of small, dispersed projects with a dispersed range of decision makers. Generally, many EE technologies are proven and economic: if properly financed, the investment costs are paid back over short periods from energy cost savings. Yet, projects with compelling economic returns remain unimplemented. Major causes for this gap are the lack of EE finance and delivery mechanisms that suit the specifics of EE projects high pre-investment development and transaction costs, information failure on the side of customers, lack of customer awareness and a very high perceived risk of new more efficient technologies by both users and financiers, mistrust in energy audits, benefits initially invisible, general lack of EE finance experience within commercial financial institutions, cash flows from saving energy are not yet conventional revenues.

In order to overcome the above mentioned barriers and accelerate energy efficiency investments throughout the country, Turkey has come a long way in setting up the regulatory and institutional framework to promote energy efficiency.

Energy Efficiency Law was adopted on May 2 2007. This law and its secondary regulation provide the legal basis and measures to promote and support energy efficiency increases, including establishing energy service companies (ESCOs), such as developing energy management system and Efficiency Improvement Project (EIT) and Voluntary Agreement schemes to encourage energy saving investments, energy efficiency increase in building and transport sectors, not allowed to sell the electrical appliances which do not meet energy efficiency requirements and increase awareness .

Within the scope of the legislation, in the field of energy efficiency, training, audit, consultancy and project services are being expanded throughout the country by giving authorization to universities with certain qualifications, chambers of electrical and mechanical engineers, and energy efficiency consulting companies (EVDs).

Energy management is an obligation in buildings and businesses having area over a certain size. TS EN ISO 50 001 Standard for Energy Management System is formed and realized appropriate to user manual and conditions standards. There are already over 4500 certified energy managers in Turkey. Government provides financial support to efficiency-increasing projects and voluntary agreements undertaking to reduce energy intensity. In this scope, projects having energy saving in electrical energy are supported with priority. 32 of energy efficiency projects for the industry have been decided to be supported. On the other hand Voluntary Agreements have been made by 22 industrial establishments so as to reduce their energy intensity. Supports for the training, audit and consultancy services of SME's up to the extend of 70% towards improving energy efficiency have also been provided to the enterprises.

Question 4 : What needs to be done to make large-scale EE investments a reality? Your proposals for next steps.

Büyük ölçekli enerji verimliliği yatırımlarının gerçekleştirilebilmesi için nelere ihtiyaç duyulmaktadır? Bir sonraki aşama için önerileriniz nedir?

Turkey is a country having different dynamics with its young population and increasing infrastructure of production and technology. In Turkey, as a developing country, the energy usage has been increased faster than the Europe average due to the increasing population and prosperity level and industrialization. While Turkish economy has enlarged 8.9% in the year 2010, the foreign dependency in energy has been reached to the level of 74%. Until 2020 the annual increase in electricity demand has been expected to realize as 6.7% according to low scenario and also as 7.5% according to the high scenario. The energy sector investment need will have been in the level of 130 billion \$ in the next 15 years. On the other hand, Turkey has high energy intensity by comparing the other OECD countries and significant energy efficiency potential in the sectors still remained to be recovered.

In this frame we need more collaboration with international finance corporations.

Incentives for industrial establishments by General Directorate of Renewable Energy as follows:

Efficiency Increasing Projects

- Maximum Payback Period 5 years
- Maximum project cost 1.000.000 TL (~400.000 Euro)
- Maximum support up to 30 % of project cost
- Certificate TS EN ISO 50001 (After 2014)
- in 2009:
 - 56 industrial plants have been applied with 72 EE Projects
 - 17 Projects have been supporting of 12 industrial establishments
- in 2010:
 - 24 industrial plants have been applied with 27 EE Projects
 - 15 Projects have been supporting of 13 industrial establishments

Voluntary Agreement

- Agreement reducing energy intensity 10 % on average in 3 years
- Maximum support 20 % of the energy costs
not to exceed 200.000 TL (~80.000 Euro)
- Certificate TS EN ISO 50001 (After 2014)
- in 2009:
 - 24 industrial plants have been applied.
 - 11 industrial establishments made voluntary agreement.
- in 2010:
 - 11 industrial plants have been applied.
 - 11 industrial establishments made voluntary agreement.

Incentives for the SME's by KOSGEB (Small and Medium Enterprises Development Organization) as follows:

- *Energy Manager Training* up to 3,000 TL (~ 1,200 Euro)
- *Pre-Audit* up to 2,000 TL (~ 800 Euro)
- *Energy Audit* up to 20,000 TL (~ 8,000 Euro)
- *Consulting services for
efficiency improvement project* up to 5,000 TL (~ 2,000 Euro)

Incentives for industry by TTGV (Technology Development Foundation of Turkey) as follows:

Technology Development (R&D) Projects

- Project Period Maximum 2 years
- Maximum support 1 Million US\$, %50 of project budget
- Repayment Period 1 year grace period of 4 years (Interest-free)
- Source Undersecretariat of Foreign Trade
- ~ 104 R&D Projects (EE + RE)
- ~ 35 Million \$

Environment Supports

- a) Energy Efficiency Supports
- b) Environmental Technology (Clean Production) Supports
- c) Renewable Energy Supports
 - Project Period Maximum 2 years
 - Maximum support 1 Million US\$, %50 of project budget
 - Repayment Period 1 year grace period of 4 years (Interest-free)
 - ~ 76,5 million kWh/year energy saving
 - ~ 25,5 million kWh/year electricity production
 - ~ 41.385 ton/year CO2 saving

Supports of Undersecretariat of Treasury

Energy Efficiency Projects

- customs tax exemption
- VAT exemptions

Cogeneration

- Minimum annual average efficiency % 80

Supports of Development Bank of Turkey

Financing of Energy Efficiency

- Type of investment Minimum 20% energy saving or at least 50% of economic gain created by energy efficiency in energy consumption
- Type of support Long-term (2-5 years including a grace period of 10-15 years) and low-interest loans
- Source World Bank
IBRD - International Bank for Reconstruction and Development
EIB - The European Investment Bank
AFD - French Development Agency
CEB - Council of Europe Development Bank
IDB - Islamic Development Bank

Supports of Industrial Development Bank of Turkey

Financing of Energy Efficiency

- Type of investments Process improvement, modernization or production capacity expansion investments in energy efficiency of Private sector with minimum 20% energy saving or at least 50% of economic gain created by energy efficiency in energy consumption and 20% CO2 saving
- Type of support Long-term loans
- Source IBRD - International Bank for Reconstruction and Development
EIB - The European Investment Bank
AFD - French Development Agency
KfW - German Development Bank
CEB - Council of Europe Development Bank
IDB - Islamic Development Bank

Laws:

- Law on the Use of Renewable Energy Resources in the Generation of Electricity, Law No: 5346, Official Gazette: 18.05.2005/25819.
- Energy Efficiency Law, Law No: 5627, Official Gazette: 02.05.2007/26510..
- Law on the Energy Performance in the Buildings, Official Gazette: 05.12.2008/27075.
- Law on the Energy Labeling Of Domestic Refrigerators, Deep Freezers, Refrigerator-Deep Freezers and Their Combinations, Official Gazette: 30.01.2010/27478.
- Law On The Energy Efficiency Requirements Of Domestic Electrical Refrigerators, Freezers and Their Combinations, Official Gazette: 30.12.2006/26392.
- Law on Energy Labelling of Domestic Air Conditioners, Official Gazette: 14.12.2006/26376.
- Law on Energy Efficiency of Fluorescent Illumination Ballasts, Official Gazette: 30.12.2006/26392.
- Law On Distribution Of Heating And Sanity Hot Water Expenses In Central Heating And Sanitary Hot Water Systems, Official Gazette: 14.04.2008/26847.
- Law On Efficiency Requirements Of New Hot Water Boilers With Liquid And Gas Fuels, Official Gazette: 05.06.2008/26897.

Regulations:

- Increasing Efficiency in Energy Resources and Energy Use, Official Gazette Date / No: 27.10.2011/28097.
- Environmentally Sensitive Design of Energy-related products, Official Gazette Date / No 07.10.2010/27722.
- Supports of Small and Medium Enterprises Development Organization (KOSGEB), Official Gazette Date / No: 15.06.2010/25795