

UNDP/GEF market transformation of energy efficient appliances: upgrading energy labelling and eco-design policies and programmes in Turkey – an accession country example

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Abstract

The total estimated CO₂ emissions from Turkey were 326 Mtons in 2010, up from 140 Mtons in 1990, with the biggest increase coming from electricity generation. Together with the economic growth, the electricity consumption has continued to increase rapidly in Turkey from 96 TWh in 2000 to 172 TWh in 2010. The residential sector accounts for the fastest growing sector, accounting for about 25 % of total electricity consumption in 2007. This growth led Turkey to launch a Market Transformation Programme towards more energy efficient household appliances. The Turkish Government chose the United Nations Development Programme (UNDP) as the implementing agency, with financial support from the Global Environment Facility (GEF).

The programme is comprised of 5 key elements. Firstly, capacity building for Turkish Governmental institutions for accelerated transposition, implementation and better enforcement of EU energy labeling and eco-design regulations. A revised and updated Proactive Market Surveillance Programme, including a strengthening of the institutional capacity to test appliances in Turkey and establishment of a Market Monitoring System to monitor Greenhouse Gas emissions (GHGs) caused by household appliances. Training programmes for retail staff to advise consumers on the benefits of energy efficient household appliances and finally, public awareness raising activities and campaigns directed at consumers and the supply chain.

The results from the Market Transformation of Energy Efficient Appliances project (MTEEA) to date, include the creation of the country's first Market Monitoring System, which estimates that the aggregate reduction in electricity consumption as a result of the project's activities is 5.8 TWh by 2014 and nearly 30 TWh by 2020. To date, the MTEEA project has been responsible for transposing 8 eco-design and energy labelling regulations which have then gone on to be published into Turkish Law, with a further 3 regulations drafted remaining as yet un-published. Furthermore, 300 Ministry of Science Industry and Technology (MoSIT) headquarter staff and market inspectors have been trained on energy labelling and eco-design, with MoSIT headquarter staff also benefiting from market surveillance programme management training. The MTEEA project has established in Turkey for the first time a market surveillance programme to check compliance of products with energy labelling and eco-design regulations. The MTEEA project also delivered an inventory of laboratory product testing capacities and gaps, a laboratory investment plan to close the gaps and training of laboratory staff. The MTEEA project also conducted a consumer research survey to establish a baseline of understanding of the Turkish population towards energy efficiency, trained a total of 70 sales staff on the contents of the energy label and how to profile energy efficiency in selling products, and delivered a consumer awareness raising campaign across national media.

Introduction

With its fast growing economy in recent years, Turkey has been a significant production base in many industrial sectors including production of household appliances, ranking first in

Europe and second in the world (TURKBSD 2011). This industrial development also led to an increase in domestic sales of energy using products, contributing to increase total electricity consumption and associated CO₂ emissions in Turkey. Total electricity consumption in Turkey reached 172 TWh in 2010, rising from 130 TWh in 2005. The residential sector represents nearly 25 % of total electricity consumption, with household consumption at 31 TWh in 2005, rising to 42 TWh in 2010. It is forecast to reach 64 TWh by 2020 (Figure 1) (Akedemia 2012).

This considerable increase in energy consumption and associated CO₂ emissions led the Turkish government to launch initiatives to promote energy efficiency in different sectors including domestic appliances. The MTEEA project implemented by the Turkish Ministry of Energy and Natural Resources (MoENR) and UNDP Turkey focused on refrigeration, laundry and dishwashing, electric ovens, air conditioners and TVs which are subject to eco-design and energy labeling requirements in both Turkey and the EU. The MTEEA Project, by incorporating the strengthening of the regulatory framework, capacity building and raising public awareness to energy efficient appliances, aims to reduce the household electricity consumption and associated GHG emissions in Turkey by accelerating market transformation of appliances.

The project is currently ongoing and in its third year. It is funded by the GEF, executed by MoENR, implemented by UNDP, and supported by MoSIT, the authority for enforcement of eco-design and energy labeling regulations, and the appliance industry; namely the Turkish White Goods Manufacturers Association and Arçelik A.Ş., a reputable Turkish appliance manufacturer.

In the following sections we report on the progress of each element of the MTEEA project, namely the Market Monitoring System, the improvement to the legal framework within Turkey for energy labelling, eco-design and market surveillance, the capacity building for better market surveillance, and public awareness raising activities. Results are presented at the end

of each section, with a summary of the results at the end of the paper. Each element presented represents complementary components of a Market Transformation Programme complete with policy tools, a market monitoring system and legal framework, market compliance (enforcement and market surveillance), and public awareness raising.

MARKET MONITORING SYSTEM

It is critical for a country to monitor the changes in energy consumption across the different economic sectors to support policy design, implementation and evaluation. For this reason, one of the outputs under the MTEEA Project was to establish a structured market monitoring database to enable MoENR to monitor annual sales of appliances covered by the project (refrigeration, laundry, dishwashing, electric ovens, air conditioners and TVs) split by energy class and electricity consumption. This database also enables MoSIT to focus their annual market surveillance plans more effectively on the sales of different appliances.

Results

The market monitoring database was created in 2012 and represents one of the major outputs of the MTEEA project. For the first time, the Turkish government had a valuable tool to monitor energy consumption and associated GHG emissions from domestic appliances. The database currently has product group sales data from 2011. The major source of data is TURKBESD and the Turkish Statistics Institute (TurkStat). Sales data is a very expensive resource, and so the co-operation of TURKBESD in the Project is welcomed. Whilst manufacturer provided sales data might well not be recognized as independent, compared with established third party data providers across the EU, some recognition should be given to the context in which this project has been established and the nature of the level of resources needed to set up all elements of this Market Transformation Programme. Furthermore, some of the data is based on best estimates using the results of the Consumer Sur-

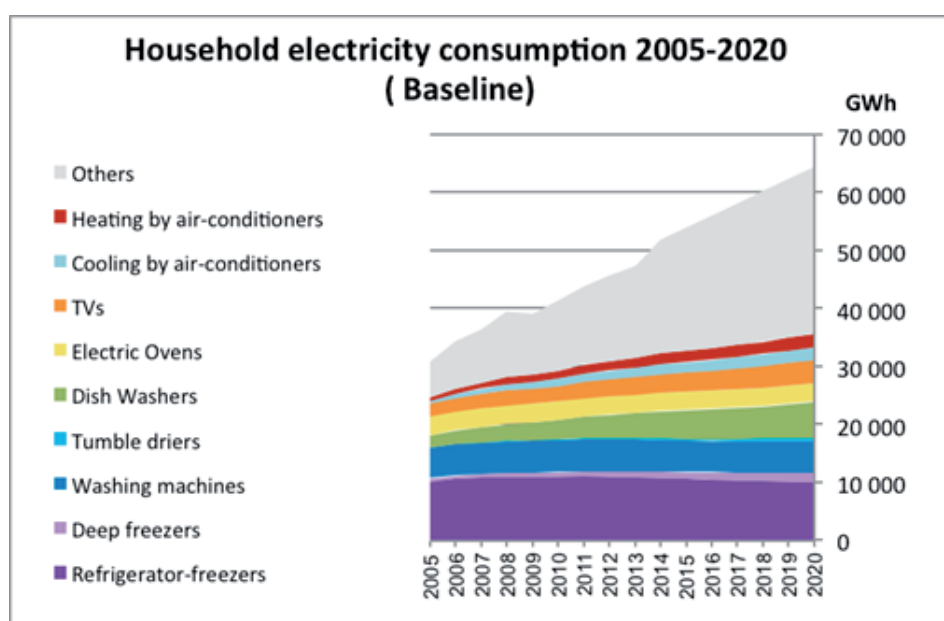


Figure 1. Increase in household electricity consumption 2005–2020 (baseline scenario). Source: Market Monitoring Database developed under MTEEA Project.

vey (Akademia 2012) as well as from past surveys conducted by DGRE. For some product groups there was difficulty in obtaining sales data, for example air conditioners. This market is dominated by import products from non-TURKBESD members.

The database also enabled the MTEEA project to monitor the electricity consumption and CO₂ reduction impacts of the Project. This includes during the lifetime of the project – 2010 to 2014, and afterwards, into 2020. Based on the data of actual consumption and CO₂ emissions by 2011, it is estimated that the MTEEA Project will provide an aggregate GHG reduction of 3.8 MTons of CO₂ by 2014 and nearly 20 MTons of CO₂ by 2020, and an aggregate reduction in electricity consumption of 5.8 TWh by 2014 and nearly 30 TWh by 2020 compared to the business-as-usual scenario in Figure 1. These figures are presented in Figure 2. (Rutanen 2012). In calculating the consumption figures and consider the results of different consumer surveys, the TurkStat statistics reveals that the number of refrigerators per household increases over time as people buy higher capacity and higher performing products.

The staff at the Measurement, Evaluation, Monitoring and Audit Department of MoENR have been trained on the operation of the database to ensure its continued use after the project has ended. As long as the database continues to be updated, the market monitoring system will continue to be a valuable tool for MoENR to monitor the energy consumption and CO₂ emissions from domestic appliances.

LEGAL FRAMEWORK

One of the objectives of the MTEEA Project is to strengthen the legal framework for more efficient appliances. For this purpose, MTEEA established a valuable collaboration between MoENR and MoSIT for acceleration of EU eco-design and energy labeling implementing measures and delegated acts respectively. Since the very beginning, the MTEEA project has been supporting MoSIT by transposing the EU eco-design and energy

labeling regulations into final draft versions of national regulations for publication in the Turkish Official Gazette and by introducing the EU eco-design implementing measures and replacing the old version energy labeling directives with the new version labeling Delegated Acts.

Results

To date, the MTEEA project has been responsible for transposing 8 eco-design and energy labelling regulations which have then gone on to be published. Furthermore, the MTEEA project has also transposed a further 3 regulations, which remain as yet un-published.

As is very well known, however, although publication of regulations is an important step, it should be backed by effective enforcement complete with trained market inspectors, structured market surveillance plan and testing facilities. For this reason, 300 MoSIT headquarter staff and market inspectors have been trained by an international expert from the Energy Saving Trust (EST), UK, on the implementation of EU eco-design and energy labeling directives and implementing measures and delegated acts respectively (Lock 2011). In addition, for further capacity building purposes, market surveillance strategy and the proactive plans of MoSIT have been enhanced to cover checking compliance of products with these pieces of legislation, and the headquarters staff of MoSIT was provided with training on market surveillance programme management by the National Measurement Office (NMO), the market surveillance authority in the UK. This is a key result of the MTEEA project – for the first time, MoSIT benefited from a capacity building programme for eco-design and energy labeling regulations. The following section includes details of this capacity building package.

MARKET SURVEILLANCE

Before the MTEEA Project, MoSIT staff did not receive any training on implementation of eco-design and energy labeling regulations and their market surveillance strategy and pro-

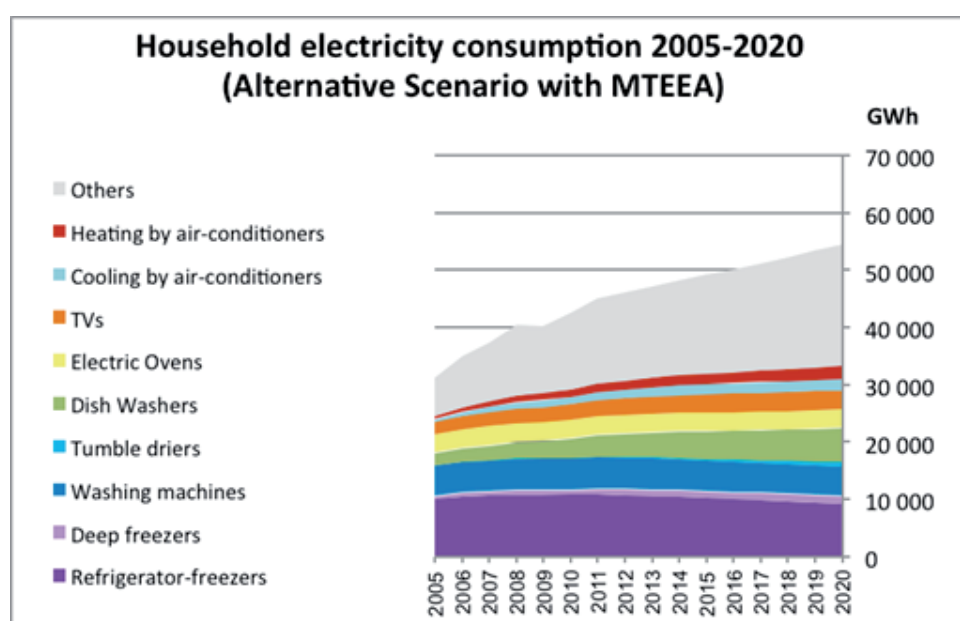


Figure 2. Household electricity consumption (alternative scenario with MTEEA). Source: Market Monitoring Database developed under MTEEA Project.

Table 1. Transposition of EU eco-design and energy labeling regulations into Turkish Law.

Regulations	Published in
2009/125/EC Framework Eco-design Directive	October 2010
• 642/2009 – Televisions	September 2011
• 643/2009 – Refrigerating appliances	September 2011
• 1015/2010 – Washing Machines	September 2011
• 1016/2010 – Dishwashers	September 2011
• 206/2012 – Air Conditioners	FINAL DRAFT
• 1275/2008 – Standby/Off	August 2011
• 107/2009 – Simple Set Top Boxes	August 2011
• 244/2009 – Non-directional household lamps	August 2011
• 245/2009 – Tertiary lighting	August 2011
• 278/2009 – External Power Supplies	August 2011
• 641/2009 – Circulators	September 2011
2010/30/EU Framework Labelling Directive(*)	December 2011
• 2002/40/EC – Electric Ovens	February 2003
• 1060/2010 – Refrigerators	June 2012
• 1061/2010 – Washing Machines	June 2012
• 1059/2010 – Dishwashers	June 2012
• 1062/2010 – TV	June 2012
• 626/2011 – Air conditioners	FINAL DRAFT
• 392/2012 – Tumble Driers	FINAL DRAFT

(*) Former labeling regulations were repealed as new version labeling regulations are put into force.

(**) Those transposed under the MTEEA Project are shaded in grey.

grammes contained no component for eco-design and limited components for energy labeling (only checking the presence of labeling on the product without verification tests under any market screening programmes). Furthermore, as far as energy efficiency testing of products is concerned, the existing testing capacity of Turkey did not allow MoSIT to execute a verification program with products mostly tested in Turkey.

Training

MoSIT is the market surveillance authority in Turkey for products covered by a number of European Directives on safety and performance including LVD, EMC, Machinery, Lifts, NHWB, Gas Appliances, Civil Explosives as well as eco-design and energy labeling of products. Before the MTEEA project, all the training of market inspectors had focused on product safety and not eco-design and the energy labeling regulations (Rutanen 2012), (Evans 2012a). Consequently, MoSIT recognized the MTEEA project as a valuable opportunity to fill their capacity gap. Considering these training needs, the MTEEA management devised a training programme on eco-design and energy labeling regulations to cover both HQ staff (training of trainers) and market inspectors, totaling 300 people. MoSIT also needed market surveillance programme management training for delivery of the Proactive Market Surveillance Plan (PMSP) developed under MTEEA (as detailed below) and for the continued delivery of market surveillance after 2014 (Evans 2012c). Securing the Ministry's co-operation past 2014 is a major result for the MTEEA Project.

In collaboration with the National Measurement Office (NMO), the market surveillance authority in the UK for EU eco-design and energy labelling directives, a two-stage training programme was designed and implemented for MoSIT HQ staff:

- **Stage I:** Environmental Impact, Development of Market Surveillance Programmes, Enforcement Actions, Monitoring and Measuring Achievement of the Market Surveillance Programme.
- **Stage II:** Follow-up of Progress of MoSIT's Market Surveillance Programme.

Results

With this training, MoSIT were able to manage the PMSP in co-operation with the MTEEA Project Management Unit and to better restructure their market surveillance organization using the outcomes of the training.

Proactive Market Surveillance Plan

Previously, MoSIT's annual market surveillance programmes focused on product safety. Previous energy labelling surveillance focused only on the presence of labels, with only hold lamps undergoing any performance and verification testing. The MTEEA project ensured, with the help of an International Consultant, that a comprehensive product testing programme was developed – to be implemented in two stages in two years (2013–2014) – covering all products included within the scope of the Project (Evans 2012b) i.e. refrigeration, laundry, dishwashing, electric ovens, air conditioners and televisions.

STAGE I (2013): Establishing the baseline. This first stage of the product testing programme is intended to provide an overall picture of the level of compliance of the marketplace for MoSIT. This seeks to help better design their future market surveillance programmes to decide on hot spots, product groups, country of origin, manufacturers, brands and models to be focus on. The testing programme is designed to cover as

many brands and models as possible under the budgetary limits of the MTEEA Project.

STAGE II (2014): *Measuring the change in the level of compliance*. This second stage of the testing programme is intended to enable the MTEEA Project Management and MoSIT to measure to what extent the MTEEA Project activities are successful in increasing the level of compliance of the marketplace.

Results

This PMSP is considered another key output of MTEEA Project. For the first time, a market screening programme has been prepared and will be delivered by MoSIT to check compliance with EU eco-design and energy labeling regulations.

Enhancing Testing Capacity

Success of a market surveillance programme is dependent on equipped and competent training facilities and personnel. Currently, the Turkish Standards Institute (TSE) is the testing body authorized by MoSIT in Turkey for testing of products subject to product regulations under the responsibility of MoSIT. As far as eco-design and energy labeling regulations are concerned, however, TSE has limited testing capacity for some products (refrigeration, electric ovens, TVs) and no testing capacity for some other products (laundry and dishwashing, air condition-

ers). Therefore, a capacity building programme was initiated by the MTEEA Project to undertake a laboratory inventory within Turkey, to devise a laboratory investment programme and to train laboratory staff

Laboratory Inventory

The objective was to establish an inventory of testing facilities in Turkey (both private and public) for testing of products against eco-design and energy labeling regulations. Table 2 displays the results of this exercise (Evans 2012a). As a result of this inventory, a 4-option strategic proposal was offered to MoSIT for upgrading the testing facilities in Turkey (Table 3)..

Having considered these four strategic options, MoSIT decided to begin by adopting a version of Option 4, with the addition of investing in air conditioner test facilities, thereafter to continue to invest in further test facilities, in a phased programme over a further 2 years, to arrive at Option 2. Upon this decision the MTEEA project proceeded with developing a Laboratory Investment Plan for TSE.

Laboratory Investment Plan

The plan covered investment for testing of laundry and dishwashing products and air conditioners to EU eco-design and energy labeling requirements and included provision of

Table 2. Testing Facilities in Turkey – capacities and gaps.

Product	Can these be currently tested in Turkey?
Domestic fridge, freezers and similar	Yes at TSE
Domestic washing machines	Only in manufacturer-owned facilities
Domestic dishwashers	Only in manufacturer-owned facilities
Domestic tumble driers	Only in manufacturer-owned facilities
Electric ovens	Yes at TSE (limited)
Air conditioners	Only in manufacturer-owned facilities
TVs	Yes at TSE (limited)

Table 3. Strategic Options for Upgrading Testing Facilities in Turkey.

Option	Advantage	Disadvantage
Option 1: Test all (future) Energy Labelling and Eco-design products in Turkey at a University or other independent site.	Builds skill base and product knowledge in research capable centres within Turkey.	Very high (€millions) investment cost. High training and staff familiarisation cost.
Option 2: Test all (future) Energy Labelling and Eco-design products in Turkey at TSE.	Uses and builds testing expertise within Turkey's current testing centre.	High (€million+) investment cost (though some/all investment could possibly be made by TSE).
Option 3: Test all (future) Energy Labelling and Eco-design products in Turkey at TSE (where TSE has facilities) and at manufacturers' laboratories in Turkey using TSE staff.	Uses and builds testing expertise within Turkey's current testing centre, minimises investment costs.	Access to manufacturers' laboratories may be restricted and require advanced booking.
Option 4: Test those products at TSE where they already have facilities. Test all other products at a suitably qualified laboratory elsewhere in the EU.	No investment costs, access to a competitive market for the supply of testing services.	Minor. Need to set up suitable administrative procedure. Some difficulties associated with arranging the witnessing of testing. Note: several EU Member States use this option.

training of testing staff of TSE. The plan was also shared with TURKBESD, and a very valuable collaboration was established to finalize the list of equipment and costs. Turkish appliance manufacturers have excellent testing facilities and expertise regarding eco-design and energy labeling testing of products. As a result of discussions with MoSIT and TSE, the Turkish government decided to develop air conditioner testing facilities at TSE. TSE delivered their commitment to make the necessary investment for developing testing facilities for energy efficiency testing of wet products and air conditioners in 2013 and to be ready for testing in 2014. This will be an important step in Turkey, facilitated by the MTEEA Project, to remove the gap in testing facilities which has been under discussion for nearly 10 years. For the product groups which can already be tested by TSE (i.e. cold products, electric ovens, TVs) the list of testing equipment already available within TSE were also reviewed by working groups for each product group, where TSE, TURKBESD members and MoSIT are represented, to identify missing or outdated testing equipment, improper setup (if any) and provide TSE with full testing capacity by bringing their laboratories proper operating condition.

Training of Testing Staff

As part of the Laboratory Investment Plan, analysis was carried out with TSE with the help of an International Consultant to identify the training needs of TSE testing staff. Considering the results of this, a training programme was developed for TSE testing staff including mutual laboratory visits, theoretical standard training, practical training at manufacturers' laboratories and training at EU laboratories accredited to EN 17025. This training programme has already been initiated and is expected to be completed in 2013.

PUBLIC AWARENESS RAISING

An indispensable component of the intended market transformation is an awareness raising programme; regulatory efforts on their own will not suffice. Therefore, the partnership profile of MTEEA was structured during the development phase of the project such that both governmental institutions and the private sector were involved (see Box 1).

Consumer Survey

The first step in raising consumer awareness is to identify to what extent consumers are aware of energy efficiency, how energy efficiency of appliances affects their purchasing decisions, whether they are aware of energy labeling and whether they correctly relate energy consumption by appliances with climate change. Therefore a consumer survey was designed and implemented to identify a baseline for the level of awareness of consumers about these issues and to help design the awareness raising campaign. The Consumer Survey Report (Akademia 2012) published in June 2012, identified the following trends:

- Females are more aware than males about energy efficiency in both rural and urban settlements;
- About 56 of the Turkish population claim awareness of energy labelling;
- The level of awareness about climate change is relatively high but the impacts by householders on climate change by for example purchasing in-efficient home appliances could not be positively correlated;
- Financial support mechanisms are necessary to accelerate the phase-out of old and inefficient appliances.

Box 1. Partners of the MTEEA project.




Project Partners	Role
	Ministry of Energy and Natural Resources, DG for Renewable Energy Executing Agency – Main organization responsible for formulation and implementation of general energy policies
	Ministry of Science Industry and Technology Organization in charge of transposing the S&L related EU regulations to Turkish legislation as well as of related market surveillance to check compliance with the adopted regulations
	Turkish White Goods Manufacturers' Association (TURKBESD) Industrial Association representing Turkish appliance manufacturers
	Arçelik A.Ş. A reputable Turkish appliance manufacturer
	Global Environment Facility (GEF) Funding climate change mitigation and adaptation projects in developing countries
	United Nations Development Programme (UNDP) Implementing Partner – Responsible for Project implementation



Figure 3. MTEEA Project website (www.evudp.net).

This consumer survey will be repeated after the public awareness raising campaign to identify to what extent the level of awareness has been increased as a result of the activities under the MTEEA Project.

A project website has also been designed and launched to promote the project and project objectives (Figure 3).

Training of Sales Staff on Energy Labeling and Sales Techniques

The consumer awareness survey also noted that most of the Turkish people buy appliances after they physically see and check them at stores. The survey found that only 2–2.5 % of them were informed of the energy efficiency aspects by salespersons in-store. This led MTEEA to design and deliver a training programme for sales staff covering the responsibilities of suppliers and dealers under the energy labelling regulations, about the information contained on the energy label and about sales techniques to highlight the energy efficiency properties of appliances. This training programme has been delivered in two phases:

- PHASE I: This training targeted the salespersons of TURKBESD members as well as department stores who directly communicate with customers. It was delivered to a pilot group of 40 salespersons attended from stores of Arçelik and other TURKBESD members such as BSH, Vestel and Indesit as well as department stores like Metro, Real and Teknosa.
- PHASE II: This training targeted 30 staff working in marketing and sales departments of TURKBESD members and prepared training documents and delivered sales training techniques to store salespersons to increase the profile of energy efficiency aspects in their training curricula.

Training attendees benefited from an increased understanding of the contents of the energy label. Turkey has some 40,000 to 50,000 retail sales staff; unfortunately, given the re-

source constraints of the programme, it was not possible to train more staff.

Public Awareness Raising Campaign

Based on the results of the consumer awareness survey, a set of promotional materials including TV and radio spots, newspaper advertisements, cinema spots and internet advertisements were produced, broadcasted and published in national media, including 6 prominent TV channels and the 4 highest circulated national newspapers, and on the internet (Figure 4). In addition, energy label flyers were also printed to be disseminated in appliance shops and department stores to inform consumers about the symbols and information presented on energy labels and to correctly guide them when buying and using appliances (“When Buying ...”, “When Using ...”) (initially 10,000 flyers printed and to be printed more as needed).

FINANCIAL SUPPORT MECHANISMS

Another major component for an accelerated market transformation programme are financial support mechanisms to encourage consumers to take action and purchase more energy efficient product. The desire for such mechanisms was also identified by the consumer awareness survey. These mechanisms have been implemented in a variety of ways in the past across European Member States, although they are now being phased out. However, they have yet to be implemented in Turkey. Turkey can learn from the previous introduction of these programmes across Europe and in particular the demand such programmes placed on the end of life processes for recycling and re-using component parts of appliances. Unlike the EU, the WEEE directive has not been successfully transposed and published in Turkey yet, so any policy which promotes accelerated replacement of old in-efficient appliances in favour of purchasing new, more efficient appliances, needs to work closely with end of use appliance policy. This is a goal which the MTEEA project will focus on in the coming year.



TV & Cinema Spot



Newspaper advertisement



Label Flyers

Figure 4. Promotional materials.

Summary of Results of the MTEEA Project 2010–2012

The results from the MTEEA project to date, include:

- The creation of the country's first Market Monitoring System, which estimates that the aggregate reduction in electricity consumption as a result of the project's activities is 5.8 TWh by 2014 and nearly 30 TWh by 2020.
- The transposing 8 eco-design and energy labelling regulations which have then gone on to be published into Turkish Law, with a further 3 regulations drafted remaining as yet un-published.
- The training of 300 MoSIT headquarter staff and market inspectors on energy labelling and eco-design, with MoSIT headquarter staff also benefiting from market surveillance programme management training.
- The establishment for the first time in Turkey of a market surveillance programme to check compliance of products with energy labelling and eco-design regulations.
- The creation of an inventory of laboratory product testing capacities and gaps, a laboratory investment plan to close the gaps and training of laboratory staff.

- The delivery of a consumer research survey to establish a baseline of understanding of the Turkish population towards energy efficiency.
- The training of a total of 70 sales staff on the contents of the energy label and how to profile energy efficiency in selling products.
- The delivering of a consumer awareness raising campaign across national media.
- The independent mid-term evaluation of the MTEEA project concluded that the project implementation and impacts are *SUCCESSFUL*, and that the chances of sustainability (i.e. the future – unfunded – lifetime of the activities commenced) and replication of the project is *LIKELY*.

Conclusion

The MTEEA Project is a structured market transformation programme complete with capacity building for governmental institutions and awareness raising for both consumers and the supply chain which is likely to ensure not only integrated energy savings and GHG reductions but also considerable economic advantages for Turkey. So far, the project implementation is slightly beyond its mid-point and project activities have been successfully implemented with no or minor delays delivering valuable outputs for both governmental institutions and appliance industry, and is expected to deliver many other concrete and useful outputs relating to market surveillance, public awareness raising, financial support mechanisms and support to research projects at Turkish universities before it is completed by December 2014. Given the positive mid-term evaluation of the MTEEA project (UNDP 2012), and pending

the complete evaluation of the project in 2015, it is hoped that this market transformation programme could be proposed as a positive model for other countries yet to implement market transformation of energy efficient appliances.

References

- Akademia Ltd, 2012, Consumer Awareness Survey Report.
- Evans, Chris, 2012a, Report on the Findings and Recommendations of the Inventory and Capacity Assessment of the Existing Laboratories in Turkey.
- Evans, Chris, 2012b, Proactive Market Surveillance Plan (PMSP).
- Evans, Chris, 2012c, Proposed Training Programme for Market Surveillance Staff of the Ministry of Science Industry and Technology.
- Evans, Chris, 2012d, Specifying and Organizing the Delivery of the Training Programmes for the Staff of Selected Laboratories.
- Lock, Tom, 2011, Review of the Current Organizational Arrangements, Regulatory Framework & Procedures in Turkey for the Implementation of the Energy Labelling & Eco-design Framework Directives.
- Rutanen, Vesa, 2012, Proposal for the structure and the data collection and management arrangements for establishing a market monitoring system in Turkey.
- Turkish White Goods Manufacturers' Association (TURKBSD), 2011 Presentation on White Goods Industry in Turkey; Workshop on Appliance Energy Efficiency Policies, Ankara, Turkey.
- UNDP, 2012, Mid-term Evaluation Report on UNDP/GEF Project: Market Transformation of Energy Efficient Appliances in Turkey.