

**ENERGY CHARTER
SECRETARIAT**

CCDEC 2014

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Brussels, 28 May 2014

Related documents: CC 486, Mess 1146/14
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DECISION OF THE ENERGY CHARTER CONFERENCE

Subject: Adoption by written procedure of the Recommendations of the In-depth Energy Efficiency Review of Turkey

By CC document 486, dated 8 May 2014, delegations were invited to approve the Recommendations of the In-depth Energy Efficiency Review of Turkey. As specified by Rule 20 of the Rules of Procedure (CC 53 corr. 2) concerning the adoption of decisions by correspondence, members of the Energy Charter Conference were informed that any delegation that wished to object to this proposal should notify the Secretariat of its position in writing not later than 28 May 2014.

Having received no objections within the specified time limit, on 28 May 2014 the Energy Charter Conference **welcomed** the report on the In-depth Energy Efficiency Review of Turkey and **endorsed** the recommendations made to the Government of Turkey.

Executive summary of the In-depth Energy Efficiency Review of Turkey is attached.

Keywords: In-depth review, Energy Efficiency, PEEREA, Turkey

IN-DEPTH REVIEW OF THE ENERGY EFFICIENCY POLICY OF TURKEY

Background

The Turkish economy has achieved high GDP growth rates after it overcame the deepest economic crisis of its history in 2001. This is mainly due to regulations and audits to decrease the banking sector's fragility, sound fiscal policies and mass privatizations of public enterprises. The average yearly growth rate of GDP was about 5% between 2002 and 2012.

Turkish import and export activities have been increasing from the early 2000s, except during the global economic crisis in 2009. The average annual growth rate between 2002 and 2013 was approximately 14% for exports and 15% for imports. During the same period, trade volume in services has been increasing as well.

The current account deficit was \$75.1 billion in 2011, about 10% of the GDP, before decreasing to \$48.5 billion (about 6% of GDP) in 2012. The current account deficit increased again in 2013 to \$64.9 billion, about 8% of GDP.

As a result of the "open door" policy of the country, the number of foreign and joint ventures has increased up to today. Foreign investments remain an important factor for the continuation of stable social and economic development in the country. Average net inflows of foreign direct investment to the country have been 1.8% of GDP for the period 2002–2012.

Energy and Energy Efficiency Policy

Turkey is a developing country, and energy use in Turkey is increasing rapidly due to its increasing population, production and industrialization. Projections show that the electricity demand will increase annually by 6.7% and 7.5% in the next decade for the low and high (business-as-usual) scenarios respectively (TEIAS, 2012).

The World Bank (2011) shows that there is a saving potential of 4.6 Mtoe from the manufacturing industry, 4.8 Mtoe from the transport sector and 7.1 Mtoe from the household sector, leading to a total saving potential of 16.5 Mtoe relative to 2009. Taking the same year as a basis, this amount equals 2.0 billion euros in the manufacturing industry, 5.4 billion euros in the transport sector and 5.8 billion euros in the household sector, adding up to a savings potential of 13.2 billion euros.

Securing long-term energy independence is an important policy goal for Turkey. Current energy policy promotes domestic energy sources, and strives to make use of the available Renewable Energy Sources (RES) potential.

Turkey's EE policy is guided by the Energy Efficiency Law, which aims to increase efficiency in the use of energy resources, to reduce the burden of energy costs on the economy and to protect the environment. The EE Law and its secondary regulations

provide the legal basis and measures to promote and support EE improvements, including establishing and operating EE service markets including energy service companies (ESCOs), energy auditors and EE projects, and Voluntary Agreement schemes to encourage energy-saving investments.

The EE Strategy Paper adopted by the High Executive Committee and issued in the Official Gazette on February 25, 2012 proposes determining a political framework supported with result-oriented and solid targets and to define, together with the enterprises responsible for performing them, the activities required to be made in order to reach targets, to make sure that the public and the private sector and NGOs act participatory and in collaboration.

RES Policy

The energy sector plays a central role in the economy of Turkey. Energy production, however, largely relies on imports of fossil fuels, namely coal, oil and natural gas. At present, 74% of the primary energy supply of Turkey comes from imports.

Since 2005, the Turkish Government has taken steps to change the status quo. Priority for the development of RES is reflected by the Law on Utilization of RES for the Purpose of Generating Electrical Energy (2005), Turkey's accession to the International Renewable Energy Agency (IRENA) in June 2009, and the adoption of the MENR Strategic Plan (2010–2014).

The assessment of RES potential in Turkey showed that there was already 25,857 MW of RES installed capacity (including hydro resources) as of January 2014 (TEIAS). There is considerable potential for RES in Turkey, estimated at 720 TWh/year, which is three times the gross demand of 242 TWh in 2012. The availability of dam hydro can be used to balance the intermittent output of wind and solar. Moreover, the output of thermal power plants could be significantly reduced by developing this RES potential, which could make GDP growth more sustainable and long lasting.

In the Electricity Energy Market and Supply Security Strategy Paper of 2009, the primary target is to increase the share of domestic sources. Turkey sets the following targets for development of RES by 2023, the centenary of the establishment of the Turkish Republic:

- At least 30% share of RES in electricity generation will be reached (including dam hydro).
- The wind plant installed capacity will reach up to 20,000 MW by 2023.
- The installed capacity for the geothermal power plants will reach up to 600 MW by 2023.
- Technically and economically feasible hydroelectric potential will be put into use.
- The use of solar energy in electricity generation will be commenced.

Turkey has favourable policies in place for RES development:

- There is a RES Law in place, providing feed-in tariffs (FIT) to RES producers for 10 years:
 - 73 \$/MWh for hydro and wind electricity
 - 105 \$/MWh for geothermal electricity
 - 133 \$/MWh for solar and biomass/waste electricity
 - Moreover, if local content is added to the project, an additional 23–92 \$/MWh (for 5 years) could be earned per project
- There is a spot market which can function as an alternative sales point for RES generators.
- Tenders have been organised to obtain connection permissions, where RES project developers agreed to pay amounts up to 30–40 \$/MWh of generated electricity back to the Turkish Government.
- The banking system in Turkey has built up considerable experience with financing RES projects.

Summary of the Overall Assessment of Progress

Privatisation in the power and gas sector continues: power distribution company privatisations are completed and generation asset privatisation is ongoing. The privatisation of generation assets has been preceded by a large-scale rehabilitation of power plants, and this process is expected to continue after privatisation. Moreover, most gas distribution companies are privatised as well. The eligible customer limit has been reduced to 5 GWh since January 2013. Also, due to the distribution company privatisations, a process is now in place to reduce theft and losses from 14.6% on average in 2011 to around 12.1% with separate targets for each distribution company in 2015.

The main objective of the Government of Turkey in the field of energy has been to become less dependent on imports for meeting energy demand. To meet this objective, a strategy document was published in 2009 which set targets for 2023: to achieve 30% of power generation from RES and to reduce the share in power generation of natural gas below 30%.

Under the “European Union – Turkey Progress Report 2013” which was concluded as part of the EU accession policy, Turkey’s efforts were in the following areas: security of supply, internal energy market, renewable energy, energy efficiency, and nuclear safety and radiation protection.

International Financial Institutions (IFI) have set up large funds for energy efficiency investments together with renewable energy investments. The size of these funds is impressive with over \$3 billion. Currently, the government does not treat energy efficiency projects as a special category of investments.

Concerning energy pricing, Turkey is well on track. The introduction of the Automatic Pricing Mechanism (APM) in early 2008 has improved the cost reflectiveness of energy prices considerably. Nevertheless, actual import costs are not always directly reflected in consumer prices as dictated by the APM. Hence, the APM is not always implemented as planned, which leads to temporary price subsidisation.

The government is commended for their work on the EE strategy paper of 2012. This paper has set out seven strategic goals, which are further subdivided into concrete actions and timelines.

Recommendations

General Recommendations

- The government's energy policy should continue to reflect the potential contribution of energy efficiency towards decreasing fuel imports and supporting economic growth and the environment.
- Energy efficiency and renewable energy should continue to be given high priority by the government. Future energy policies should be supported by detailed analysis of economic energy efficiency potentials in all sectors of the economy. The barriers impeding the realization of these potentials should be mitigated.
- The Ministry of Energy and Natural Resources (MENR) should strengthen its capacity to analyse and assess energy efficiency and renewable energy as a basis for future policy development.
- The rehabilitation of generation, transmission and distribution assets in the power sector needs to also continue when the privatisation is completed. The further efficient development of production, transmission and distribution assets in the gas sector needs to continue. This will maximise fuel burning efficiency and minimise the technical transmission and distribution losses.
- Energy strategies and policies should be consistent with long-term goals, and set objectives for key end-use sectors.
- Turkish energy efficiency legislation should continue to be aligned with the relevant EU energy efficiency-related policy and legislation.

Institutional Framework

- Additional efforts are required to strengthen the capability of the newly established General Directorate of Renewable Energy (GDRE), possibly by establishing an effective, appropriately staffed dedicated authority with a clear coordination function.
- The role of GDRE should be strengthened to enable them to have a leading role in developing RES in Turkey.
- Enhancement of inter-ministerial coordination is needed, in particular among other public policymakers in the fields of energy, environment, transport, housing and industry.
- The government should consider ways and means to strengthen work on energy efficiency at regional and local levels, such as regional authorities and municipalities.

- The efforts of various stakeholders, including IFIs, professional and sector associations, universities, research centres and NGOs need to be supported and included in the government's policy formulation and evaluation.
- The government should continue to support research and development activities on renewable energy and energy efficiency technologies.

Energy Market and Pricing

- The government, with the assistance of the Energy Market Regulatory Authority (EMRA), should continue their work with cost-reflective pricing.
- In order to promote energy efficiency measures, further financing of energy efficiency projects through the distribution tariffs should be considered.
- The restructuring of the electricity and gas market is commended and should continue including tariff setting in transmission and distribution which create system efficiency.

Specific Energy Efficiency Programmes and Measures

- The Energy Efficiency Strategy Paper of 2012 should be supplemented by an energy efficiency policy road map for 2023 and beyond. This long-term road map needs to be made operational through short-term action plans with priorities and intermediate monitoring and evaluations.
- Based on the further assessment of energy efficiency potential, the government should set targets for priority sectors.
- The government should continue to establish high efficiency standards for new and existing buildings, with focus on energy efficiency labelling schemes and minimum energy performance standards. These should include both construction characteristics and use of the buildings. The authority should ensure that compliance and enforcement procedures are in place.
- The government should continue stimulating energy efficiency through a wide range of measures for the buildings and industry sectors, such as compulsory energy audits, benchmarking, dissemination of information on energy efficiency measures, and involving sector associations in communication and information campaigns.
- The government should further facilitate the development of the market for energy services through a wide range of measures, such as a subsidy scheme for energy audits, simplified procedures for investments in energy efficiency projects, and simplified procedures for certification of energy efficiency companies.
- Energy efficiency in the transport sector should be an integrated approach, including public transport, public procurement of energy-efficient vehicles, infrastructure, and regional and city planning.
- The government should continue to give priority to licensing of highly efficient cogeneration and district heating plants.

- Awareness raising and information dissemination activities to promote energy efficiency should be continued and enhanced, particularly in municipalities, households and SMEs.
- Turkey should continue participating in various international energy efficiency-related initiatives.

Renewable Energy Sources

- RES development should continue to be a priority for Turkey. Objectives, goals and targets for RES, with a timetable, should be improved in a future Renewable Energy Strategy Paper and/or Action Plan.
- The government should continuously assess support mechanisms such as the feed-in tariff system, possibly extending it to cover heat from renewable sources.
- The revenues from water and wind rights (and solar rights in the future) tendering could be earmarked to start a RES revolving fund.
- More financial resources should be dedicated to decentralised RES generation. Private distribution companies should be stimulated to facilitate connections.
- The development of RES resources needs to be carefully considered in light of comparative cost, grid access and dispatch. In the long term the government should consider using hydro and other technical options as a backup to store intermittent renewable energy like wind and solar.

Energy Efficiency Financing

- The government should allocate sufficient financial resources for increasing energy efficiency in public and state-owned buildings and public lighting, and at the same time introduce incentives for private and residential sector initiatives in energy efficiency and RES.
- The government should ensure a good coordination mechanism with IFIs and donor communities, including priority settings, monitoring at the national level, and compatibility with the overall national strategy on energy efficiency and renewable energy.
- The government should explore which financial incentives are most appropriate for stimulating energy efficiency in different sectors.

Data Collection and Monitoring

- To support monitoring of achieved results, a centrally coordinated project database needs to be set up and collect data from all activities related to energy efficiency in Turkey.
- Results at the project level should be aggregated at the national level in order to periodically assess the implementation progress of national policies.

- The existing statistics on the building stock should be improved first, so that they can be used to estimate the energy-saving potential for the building sector and support the policymaking and improvement process.
- The government should ensure full implementation of international environmental reporting standards and methodologies concerning renewable energy and energy efficiency.