

❖ What is the most burning and urgent single energy challenge in today's world and how do you think governments and businesses should effectively address them?

In my opinion, the biggest Energy problem over the world is the amount of the waste Energy. We do not forget that one of the main concepts of the two world wars occurred in the 20th century was energy submission. Although there was no problem between countries about energy supply and cost, petroleum embargo declared by OAPEC, which was established by Egypt and Syria with OPEC, ended with an energy crisis. As a result of this crisis, costs of petroleum and energy significantly increased which lead the countries to revise their energy dependency and security of energy submission.

In addition, nuclear energy, which was accepted as a life-saver for electricity generation, lost its prestige due to Three Mile Accident in 1979 and Chernobyl disaster in 1986, Ukraine. During this time period, global warming and declining of fossil fuel reserves, which have started in 1990's, caused countries to tend to alternative energy resources. Problems about the alternative energy sources which are related to storage and not being usable as base energy prevent economic usage of alternative energy resources. For this reason, more efficient usage of the existing energy has been coming up and energy efficiency has gained importance.

As a result of increased welfare with developing technology, an increase in the spending energy per capita is observed for example household electrical appliances. Even the lightings in the houses had been accepted luxury, nowadays refrigerator, computer, television, washing machine, dish washer, oven, iron and especially split clima as a result of increasing temperature in hot summer days have been widely used. Increased spending energy is observed not only household electrical appliances, but also the transportation.

Energy efficiency, stating as evaluation of energy sources in all phases from production to consumption with the highest efficiency, involves reducing energy loss, reuse and recycle of waste, decreasing the energy consumption via new technologies without loss of quality and performance in production phase and also not to prevent social welfare.

The governments worked about the energy efficiency since 1970. EU, US, and Japan have made big investment in research on energy and efficiency and have a leading role. As a result of this role model, particular standards have been constituted. It is obvious that directives, which have been prepared toward these standards, will give a competitive advantage to these countries. The application of these directives not only provides the energy efficiency, but also increases dynamics the domestic and foreign markets and develops new exported goods. The countries, which have limited R&D capacity and have weakness on competition and innovation, should open their markets to these pioneer countries. It is clear that the countries, which provide necessity of energy and climate century, will win out. So, it will be useful to firstly examine the policies of these countries. The first strategies and policies on energy efficiency was improved and applied by western countries and Japan in 1970's as a result of petroleum crisis and the subsequently increase in energy prices. The concept on energy efficiency became an indispensable component of energy and development policies and now it has increasing prevalent application area. The studies on energy efficiency in Japan and EU, applied policies, given promotions, regulations and prevention by these countries have given advantages and had a give start. The same pioneer studies have been also examined in US. Although it is state-specific differences in the federal system of US, there are leading developments have been already observed in the contrary of the most countries. For example, California is one the most successful state in EU in terms of energy efficiency. The first study on energy efficiency in Turkey had been started in 1980's by Electrical Power Resources Survey and Development Administration. Subsequently the study on determination of energy saving potential was done in 1981. As a result of these studies, saving equaling to 4 million TEP can be done. In 1995, National Energy Saving Centre was established within national electric company. It is difficult to mention that the regulation is sufficient in the scope of energy efficiency. This regulation, which was non-obligatory on implementation, only involved industrial consumption, had not any items on energy consumption in houses, etc., energy production and transfer. After 12 years of publication of the regulation, in May 2007, Law on Energy Efficiency enumerated as 5627 was established. After this law, publishing of document on strategy of energy efficiency was declared in January 2010. The main reasons of the publishing document were identification of the action and to act relevant organizations in co-ordination for decreasing energy intensity. The draft version of this strategy documents were declared in the beginning of 2010 to receive opinion and changes were done. The last version of the strategy document has officially entered into force in February 2012. As a result of the studies on energy efficiency in our

country, the energy saving potential has been declared as 30% in building sector, 20% in industry, 15% in transfer. This saving potential equals to four times energy obtained from Keban Dam and this value also 7.5 million TL. According to IEA data, the buildings which are used for domestic and commercial aims, consume one third of whole energy of the world. Their ratios in all energy consumption are 60% and 40% in IEA and EU, respectively. In Turkey, the residence number is 17 million according to the data of 2007. In 2009, this number increased to 26.6 million. On the speech notes of the Ministry of Energy and Natural Resources, this number reached to 32 million in 2012. Energy consumption in Turkey counted as 256 billion kWh in 2014. According to this value, the energy consumption ratio of houses is 20%.

The governments must educate their public about the Energy Efficiency. They must ban to be produced the not-efficiency electrical devices. They plan renew the not-efficiency electrical devices to efficiency electrical devices. They should make some economical support to the public for the renewing.

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