Screening Chapter 15 Energy

HYDROCARBON

1- Oil Stocks

Q: What measures, if any, have been taken to ensure the maintenance of stocks in all of the three categories defined in the acquis? What are the control measures and the applicable penalties?

A: According to Petroleum Market Law, oil stocks are maintained at an amount of at least 90 days of the net import amount in the previous year's average daily consumption. A National Oil Stock Commission has been established to take decisions on oil stocks. Refinery, fuel and LPG distribution licensees are obliged to keep minimum 20 times of the average amount of the supplied daily product at their own storage or licensed storage facilities. In addition, eligible consumers, consuming 20.000 tons or more of each type of liquid fuel each year, are obliged to keep 15 days of their consumption as a stock.

There is no regulation arranging oil stocks in categories of gasoline types, middle distillates and fuel oil as defined in 68/414/EEC Council Directive. National Oil Stock Commission is authorized to take decisions.

Control of liability stocks are carried out by Energy Market Regulatory Authority (EMRA). EMRA is authorized to implement penalties when there is a deficiency in industrial oil stocks. To expand audit and control activities, EMRA made an agreement with the Ministry of Internal Affairs, which has a nationwide organization.

Q: What measures, if any, have been taken to ensure the permanent availability and accessibility of the stock, as well as, in case of difficulties in obtaining oil supplies, the control by the Government of the country of the use of stocks?

A: The major implication of the Petroleum Market Law in terms of emergency was the establishment of National Oil Stock Commission authorized to take concerning decision about national oil stocks.

The issue is under the responsibility of the National Oil Stock Commission, under the provision of Petroleum Market Law;

"The Council of Ministers shall be authorized to render decisions to determine and increase the actual number of days of the national oil stock, to manage and impose liabilities on national oil stock, the term, type and amount of the national oil stock and to determine the location of stocking; and procurement of petroleum and services regarding the national oil stock; to take other decisions and measures regarding stock and stocking, to perform sales from the national oil stocks, to prepare the proposals to be submitted to the Council of Ministers and to determine the procedures and principles regarding the activities of the Commission established according to this Law."

HYDROCARBON

(CONT'D)

The National Oil Stock Commission has been given direct responsibility for the implementation of necessary measures. The procedures and principles concerning the activities of Commission were set by the Decree of Council of Ministers (Decree No: 2005/8374, Issue date: 28 January 2005).

In this regard, in line with the collective action of International Energy Agency (IEA) in September 2005 to mitigate the effects of Hurricane Katrina, drawing from stocks has been realized. Decision making and commencement of the stock release took two days.

Q: What options, if any have been followed to ensure fair and non-discriminatory conditions in the stock holding arrangements? What are the current stocks requirements imposed on the different categories of operators in the oil products market (refineries, importers, wholesale distributors, etc.)? In particular, what measures, if any, have been taken ensure a fair treatment of all operators refineries and non refineries)? What transparent arrangements identify the cost burden resulting from the maintenance of the stocks? Have any measures been adopted to obtain and publish information on the cost-burden of stockholding?

A: Oil stocks are kept by means of; refinery licensee, fuel and LPG distribution licensee and eligible consumers. There isn't any discrimination among actors supplying oil to the market like refineries, fuel and LPG distribution companies. All these actors have to pile 20 days oil stock.

According to Petroleum Market Law, the consumers consuming 5.000 tonnes in fuel oil, heating fuel and diesel is deemed as eligible consumers. Eligible consumers, consuming 20.000 tonnes or more of each type of liquid fuel each year are obliged to keep 15 days of their consumption as a stock.

The complementary portion of the national petroleum stock shall be retained by refining undertakings and any funding need that may arise as a result of the acquisition of such complementary supplementary portion, financing expenses and stocking and maintenance costs of such stocks shall be covered by the income added to the consumer prices (determined by EMRA at a maximum of 10 US Dollars/ton) and this income is retained by the refining undertakings. In the event of imports except for refining undertakings, such income shall be paid to the refining undertaking by the importer. Refining undertakings are obliged to provide EMRA with information regarding the accounting of this income every year.

The determined amounts are issued in By-laws on Petroleum and LPG Market Licensing published in Official Gazette on 17June 2004, no 25495 and 16 September 2005, no 25938, respectively.

HYDROCARBON

(CONT'D)

Q: Has a decision been taken to establish- or not- a stockholding body?

A: Studies are underway to establish a more effective structure for oil stock. In this regard, the establishment of a stockholding agency to govern industrial and governmental oil stocks is under consideration.

Q: What measures, if any, have been taken to produce statistical summaries as required under the acquis? Are crude oil and intermediate products taken into account in the statistics?

A: EMRA constituted an information system in order to form and improve a healthy and properly functioning petroleum market. The objective of system is regulating principals, procedures and rudiments about gathering information, processing to database, compiling, storing and declaring to public and relevant parties to provide petroleum market functioning healthy, proper and appropriate with objectives laid down in Petroleum Market Law.

The scope of the system is gathering, processing, compiling, storing and declaring information pertaining petroleum market; notifications and notification liabilities, forming and implementing database, forms and formulas, compiling and storing information and declaring to public and relevant parties, principals, procedures and rudiments.

In order to have an effective information system,

- Information System Regulation was put into effect in December 2005.
- Notification Forms accepted by the Board promulgated to the Public and Interest Groups.
- Information gathered in the scope of Notification Forms was started to record in database which is already in use.
- Participating in the studies carried out by the contractor in the scope of Regulatory Information System (RIS) financed by the European Union.

Crude oil and intermediate products are taken into account in the statistics.

HYDROCARBON

(CONT'D)

Q: Have any stock holding bilateral (draft) agreements been agreed upon with EU countries? Does any of these agreements fail to answer the strict conditions stipulated in the acquis?

A: There is no bilateral agreement on oil stockholding.

2- Other emergency measures

Q: What measures, if any, have already been taken to align the national legislation with Council Directive 73/238/EEC of 24 July 1973 on measures to mitigate the effects of difficulties in the supply of crude oil and petroleum products?

A: To mitigate the effects of difficulties in the supply of crude oil and petroleum products national oil stocks has been re-arranged. Within this context, in Petroleum Market Law, 90 days of oil stock has been introduced and National Oil Stock Commission has been established to take concerning decision about oil stocks.

National Oil Stock Commission has been authorized to set and take decision about the actual number of days, liabilities, term, type, quantity, locations and sales from oil stocks, other decision and measures.

Stock releasing decision is taken by National Oil Stock Commission and notified to Energy Market Regulatory Authority by General Directorate of Petroleum Affairs carrying out Secretariat of Commission for implementation.

Furthermore, other measures such as demand restraints, production increase and fuel switching are applied to mitigate the effects of difficulties in the supply of crude oil and petroleum products.

The National Protection Law No: 79/1960, the Petroleum Law No:6326/1954 and the National Security Law No: 3634/1939 define the authority to implement all types of demand restraint measures in an emergency. Demand restraints are implemented by the Emergency Management Directorate, being on duty for 24 hours, which was established within the body of Prime Ministry in 2000.

Special procedure is applicable for war time.

At present, National Oil Stock Commission has been assigned the authority to take related decisions on drawing from stocks and determining priority users.

HYDROCARBON

(CONT'D)

3- Licensing procedures

Q: In relation with granting and using authorizations for the prospection, exploration and production of hydrocarbons, has a decision been taken as to which would be the "competent authorities" as referred to under article 10 of Directive 94/22/EC of the European Parliament and of the Council of 30 May 1994?

A: General Directorate of Petroleum Affairs (GDPA) is 'the competent authority' in relation with granting and using authorizations for the prospection, exploration and production of hydrocarbons according to the Petroleum Law No.6326 which was published in Official Gazette on 16 March 1954.

Q: As the case may be, have all provisions which might reserve to a single entity the right to obtain authorizations in a specific geographical area within the national territory been abolished?

A: There is no restriction for companies to obtain authorization in oil fields. However, special permission is required for certain areas such as areas adjacent to military zones and state frontiers, historic or religious sites.

Q: Which measures, if any, have been taken to ensure that authorizations are granted following a procedures in compliance with the acquis?

A: Petroleum sector has recently been restructured. In this respect, downstream activities are regulated by Petroleum Market Law (No: 5015, Official Gazette: December, 2003) and LPG Market Law (No:5307, Official Gazette: March, 2005). The Draft Petroleum Law for regulating upstream activities is on the agenda of Turkish Grand National Assembly. In this framework, procedures on the conditions for granting and using authorizations for prospection, exploration are being rearranged to improve transparency and non-discrimination.

Q: Which measures, if any, have been to be taken to establish criteria for the delimitation of the geographical areas in compliance with the acquis, as well as to limit the duration of the authorizations?

A: Petroleum districts are set in pursuance with the provision of Article 45 of The Petroleum Law No:6326.

The whole or any part of petroleum districts may be declared open to license or lease, or an open area may be modified or closed in whole or in part by the decision of the Council of Ministers.

The granting of license or lease in the seas beyond the territorial waters, and the terms and conditions relevant to the tenure and obligations of such licenses and leases shall be determined by Council of Ministers as appropriate.

HYDROCARBON

(CONT'D)

Q: Have the criteria for grating the authorizations as well as the conditions and requirements concerning the exercise or termination of the activities in question been drawn up?

- **Criteria for grating the authorizations:**
  - In order to grant or reject a petroleum right, the following provisions are taken into consideration.
- **Conditions and requirements concerning the applicant:**
  - Compliance with applicable Laws, regulations and instructions.
  - Previous activities indicating the intent to operate in furtherance of the objective of the Law,
  - Previous experience in conducting similar operations,
  - Financial ability to conduct the contemplated petroleum operation,
  - Working program to be submitted to the authority,
  - Priority of application, in the case of applicants are equally eligible under the foregoing criteria.
- **Conditions and requirements concerning the exercise:**
  - Permit, licence and lease are needed for petroleum operation.
  - An authorization by Ministry of Energy and Natural Resources is needed in order to conduct a petroleum operation in specific areas such as military zone, historic or religious sites or instillation, a structure, a water instillation, a road or public thoroughfare, a municipal development area of a city or town.
  - Regional drilling obligation is required.
- **Termination of the activities**
  - The activities of the petroleum right holder are cancelled when the requirements of the Petroleum Law No: 6326 are not fulfilled under the Article 132 of the Law.

HYDROCARBON

(CONT'D)

Q: Has the Government of the country already decided which areas of the national territory, if any, would be available under article 3.3. of directive 94/22/EC?

Petroleum districts are determined upon applications. Petroleum fields are open to applications for petroleum exploration as long as no authorization has been granted previously.

Article 52 of the Petroleum Law No: 6326;

1. The contents of licence applications for fields, shall kept confidential for four work days following the date of application.

a. In the event of another or more than one application is made within this period for the same pilot of land either partly or wholly, these applications shall be considered and evaluated by the General Directorate of Petroleum Affairs, Ministry of Energy and Natural Resources (GDPA) in the scope of Article 4 and 51 of this Law.

b. In the event no other licence application is made within four work days following the first application, for the same pilot of land either partly or wholly, the request shall be resolved by the GDPA, taking into consideration the provisions specified in article 4 and 51.

c. Licence applications made after four work days following the date of the first application, for a pilot of land either partly or wholly, shall not be subject to evaluation.

2. The above provision shall be applicable to applications to loged for a rejected application area or relinquished licence area, upon which the final decision has been published in the Official Gazette.

3. Applications made in compliance with the procedures shall be finalized by the GDPA and submitted to the Minister at the latest within tree months. The Minister shall reach a final decision within 20 days at the latest.

Procedure for the applications is envisaged to be rearranged within the framework of Draft Petroleum Law.

HYDROCARBON

(CONT'D)

Q: Which measures, if any, have been taken to produce and publish an annual report which shall include information on the geographical areas which have been opened for prospecting, explorations and productions, authorizations granted, entities holding authorizations and the composition thereof and the estimated reserves contained in its territory?

An annual report is published by the competent authority GDPA. This report includes the information specified below.

- Activities related to permit,
- Activities related to exploration licences applications made and exploration licences granted,
- Activities related to production leases,
- Royalties and surface rentals (state shares),
- Capital imported and declared by foreign petroleum companies to GDPA,
- Remittances made by foreign companies,
- Customs exemptions and permissions for the imported materials,
- Geological and Geophysical field studies,
- Exploration and Production wells,
- Discoveries,
- Crude Oil and Natural Gas production,
- Crude Oil and Natural Gas reserves,
- Archive activities.

HYDROCARBON

(CONT'D)

4. Registration for crude oil imports and deliveries

Q: "What measures, if any, have been taken to produce statistical summaries as required under Council Regulation (ec) 2964/95 of 20 December 1995?"

A: Information about crude oil imports and deliveries is gathered from the market participants and oil producers in accordance with the provisions of By-Law on Information System. However, the current database is being used until the establishment of the new database system by the RIS (Regulatory Information System) project.

5. Crude Oil Supply costs & consumer prices of petroleum products

Q: In particular, regarding the consumer prices of petroleum products, what would be the methodology used in order to calculate the most representative price levels charged to consumers in a given category of products (prices in force each Monday and on the 15th day of each month)?

A: Indicative liquid fuel prices of distribution undertakings which may be ceiling or recommended price to the vendors depending on the purchase contract of vendors have been published in the EMRA web site daily.

Also pursuant to the Decree of Council of Ministers, to be used for public procurement purposes, liquid fuel prices determined for the European zone of Istanbul via obtaining prices from the 8 distribution companies with the highest market share, have been selected as representative prices. These prices are published in the EMRA web site daily which may be used for this purpose.

Q: "As regards crude oil supply costs, what is the percentage of the in land production in the total crude oil supply of the country (based on the annual quantities)?

A : According to the data provided by the TUPRAS Refinery in 2005, inland production is 8,5% of the total crude oil supply.

NUCLEAR ENERGY

Part 1 - RADIATION PROTECTION (TITLE II, CHPT. 3 EURATOM)

I. General Information:

Radiation protection profile of the country

1. Number of employers/undertakings identified as being responsible for practices involving ionising radiation (grouped by sector)?

Radiation Practice Establishments: 6188

Maintenance and Repair Companies: 79

Import-Export Companies: 85

Total: 6352

Turkish Atomic Energy Authority (TAEK) and Istanbul Technical University (ITU) are the only employers identified as being responsible for practices concerning nuclear installations.

2. Number of work areas (facilities/establishments) involving exposure to ionising radiation declared or authorised (grouped by sectors)?

As of 01 June 2006:

- $^{99}Mo/^{99m}Tc$ generator production facilities: 2
- 11 MeV cyclotrons: 3
- Irradiation facilities: 2
- Diagnostic radiology departments: 4801
- Nuclear medicine laboratories: 161
- RIA laboratories: 111
- Radiotherapy departments: 112
- Industrial radiography companies: 218
- Nuclear gauges companies: 748

- Research and education laboratories: 30

There are three work areas involving exposure to ionising radiation. TAEK operates a 5 MW TR-2 research reactor and a fuel pilot plant, both located at Cekmece Nuclear Research and Training Center (CNAEM) in Istanbul. ITU operates 250 kW TRIGA MARK II research reactor located at the Energy Institute.

3. Estimated number of workers receiving an effective dose higher than 1 mSv a year ("exposed workers")

According to the National Dose Registry System records, about 22000 workers are under monitoring programme (12647 film and 9629 TLD users). It is estimated that about 6% of workers received an effective dose higher than 1 mSv in 2005.

Organisation and tasks of the competent authority(ies)

4. Is there an independent regulatory authority responsible for Radiation Protection? (new)

Turkish Atomic Energy Authority (TAEK) is the regulatory authority responsible for radiation protection in Turkey. TAEK was established by the Turkish Atomic Energy Authority Law No. 2690 in 1982 and replaced the General Secretariat of Turkish Atomic Energy Commission that had been established in 1956.

TAEK undertakes all regulatory activities concerning nuclear safety and security, radiation safety, waste safety, transport safety and safeguards. TAEK is authorized to inspect radiation practices and nuclear installations to ensure that the conditions laid down in relevant legislation and in the licences are implemented by the licensee.

5. Is a planned and systematic inspection programme established? Please give details

For radiation practices, before issuing a licence, on-site radiation inspection is conducted according to the article 53 of the By-law on Radiation Safety. Licensed practices are inspected according to the articles 18 and 19 of the Regulation on Radiation Safety and article 67 of the By-law.

Regulation on Radiation Safety

Article 18- Governmental and private institutions and establishments and real entities covered by this Regulation are subject to inspection by TAEK.

Article 19- Inspection may be performed anytime with or without notification. Inspection covers the examination of the locations of radiation sources in terms

of physical aspects, measurement of radiation levels and radioactive material amounts (concentration) and whether the principals stipulated in this Regulation and the By-law are observed during entry into and export from the country, transportation and transit passage of radiation sources.

By-law on Radiation Safety

Article 67 – General principles of the inspection shall be implemented in conformity with the provisions of the related Articles of the Regulation, and in addition, shall cover the following issues:

a) Inspection of physical conditions of the sites of the radiation sources;

b) Measurement of the radiation levels, radioactivity quantities and/or concentrations, at various sites and points;

c) Determination of whether or not the general licensing terms and the special conditions given in the related chapters according to the type of licenses are conformed with;

d) Investigation of whether or not the records are kept properly and in compliance with the procedures set forth in the Article 69 of this By-law;

e) Investigation of whether or not the measures prescribed in the Regulation and this By-law to ensure radiation safety of the radiation workers, public and environment are taken;

f) Investigation of whether or not the provisions of the Regulation and this By-law, and other related legal requirements regarding radiation safety during the export, import, transport and transit of radiation sources are complied with.

Regulatory inspections of nuclear installations are implemented in accordance with the legislation given below.

Law on Turkish Atomic Energy Authority No. 2690 (Official Gazette 13 July 1982, no. 17753)

Article 4e – TAEK has a duty: "To grant approval, permit and licences related to siting, construction, operation and environmental safety of nuclear power and research reactors and nuclear fuel cycle facilities; to perform necessary inspections, to restrict the operation in case of non-compliance with the conditions of the permit or licence; to suspend or revoke the permit or licence and to make recommendations to the Prime Minister for the shut down of those installations; to prepare necessary technical legislation for these purposes."

Article 8- To carry out the duties written in this Law the following Specialized Department and a General Secretariat shall be established within the structure of the Turkish Atomic Energy Authority. The Head of the Departments shall be

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Part 1 - RADIATION PROTECTION (TITLE II, CHPT. 3 EURATOM)

(CONT'D)

appointed from among the specialized people in their subject in conformity with the procedure. The duties of those departments and of the General Secretariat are as follows:

a) Department of Nuclear Safety:

Among the duties stated in Article 4 of this Law; to carry out those related to nuclear safety and those concerning siting, instruction, system engineering, commissioning, operating, physical protection of nuclear facilities, radiation protection, safety and **control** of nuclear materials, environmental protection and the other related duties.

Regulation on Issue of Licences for Nuclear Installations (Official Gazette 19 December 1983, no. 18256)

Part Four - Inspection and Various Rules

Section One - **Inspection**:

Article 51 - As per rules of this Regulation, the nuclear installations to be granted a licence are subjected to the inspection of the Authority whether or not safety standards and regulations are applied and the conditions of the license are met during the all licensing phases and steps, and operation.

The inspectors of TAEK are therefore fully authorized to enter and inspect all work in the relevant nuclear installations to request end examine any document necessary beginning from the first site studies for the nuclear installation, and continuing during the detailed site studies, the preparation of the site for the construction, during all the phases regarding construction, fabrication erection, commissioning and operation of the relevant nuclear installations, for the commencement of the inspections, it is compulsory that the applicant notifies the Authority, at least one month prior to the beginning of the first site study.

Inspection Procedure:

Article 52 - The inspections mentioned under Article 51 may be carried out announced or unannounced. The details of the inspection procedure are established with a regulation.

Special Inspection:

Article 53 - To be able to carry out the necessary inspections following the accidents and anticipated operational occurrences, the applicant must notify the Authority about the incident. After completion of the inspection the applicant is obligated to comply with the instructions issued by the Authority.

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By-Law on Quality Assurance and Inspection of Nuclear Installations (Official Gazette 13 March 1997, no. 22932)

Section III - **Inspection** - Basic Rules

Article 17- Owner, Contractor and Operator shall implement the inspections as per the approved Inspection Program by the Authority in order to check the compliance to the pre-determined requirements**.**

Article 18- Changes to the approved program shall be effective after the approval of the Authority**.**

Article 19- During the construction and operation of the Nuclear Installations at any phase of the activity where the Authority deems necessary, the Authority may execute inspections on the activities of the Owner, Contractor, Sub-Contractors and Operator, either programmed or at any time and announced or unannounced.

6. Does the government or other national concerned organisations provide for

- **training and education**

Nuclear Engineering Department of Hacettepe University in Ankara, Institute for Energy of Istanbul Technical University, and Institute for Nuclear Sciences of Ege University in Izmir have graduate/postgraduate nuclear engineering programs.

The postgraduate education program for medical physicists in the radiation oncology was begun in the Institute for Oncology in Istanbul University in 1986. Hacettepe University Oncology Institute in Ankara also gives the postgraduate education program for medical physicist in the radiation oncology.

Diagnostic and Nuclear Medicine Physicist postgraduate education programme has been continuing in Ankara in the Department of Physics Engineering of the Faculty of Engineering since 1999. In the 9 Eylul University in Izmir, Institute for Health Sciences, postgraduate education program for Nuclear Medicine Physicists also exists.

The postgraduate education programme for Radiation Protection Expert has been initiated under the Division of Radiological Sciences and Applications in the Institute for Nuclear Sciences of Hacettepe University last year.

The two years education programs are going on in 23 universities for radiology technicians after high schools. Two of them include specific programmes for radiotherapy technicians

When it is requested, Authority experts contribute to the courses organized both at the universities and by the related institutions, as lecturers. Additionally, TAEK gives some courses to health practitioners, industrial radiographers, custom officers, police officers, cargo handlers, civil aviation personnel, civil defence personnel and city health directorates etc. The on site training courses to the workers in industrial applications are also given by TAEK.

- **dosimetry:**

According to By-law on Radiation Safety, Art. 21, Category A workers are obliged to use personal dosimeters. Individual monitoring for external radiation is carried out by using films and TLD dosimeters. The total number of workers receiving services are around 22000. A National Dose Registry System is located at Sarayköy Nuclear Research and Training Centre (SANAEM) of TAEK.

- **calibration:**

Calibration service is provided at the SSDL and IDCL (Individual Dosimetry Calibration Laboratory) at CNAEM and SANAEM,

- **archiving of dose and medical examination records:**

Dose records are archived at National Dose Registry System. The medical examination record keeping is under the responsibility of Licensee.

Article 35 and 36 of the Treaty (Environmental Monitoring)

7. Is there an active network of measuring stations to monitor environmental radioactivity?

Turkey has installed its own Early Warning Environmental Radiation Monitoring System-EWERMS (RESA) for early warning of nuclear and radiological emergencies. The system is also used for routine air gamma dose rate measurements. The system has 67 radiation monitoring stations. All parameters of the remote stations are controlled and data is transferred between remote stations and the control center via phone lines. There is a plan for supplying the data taken from this system to EURDEP (EUropean Radiological Data Exchange Platform).

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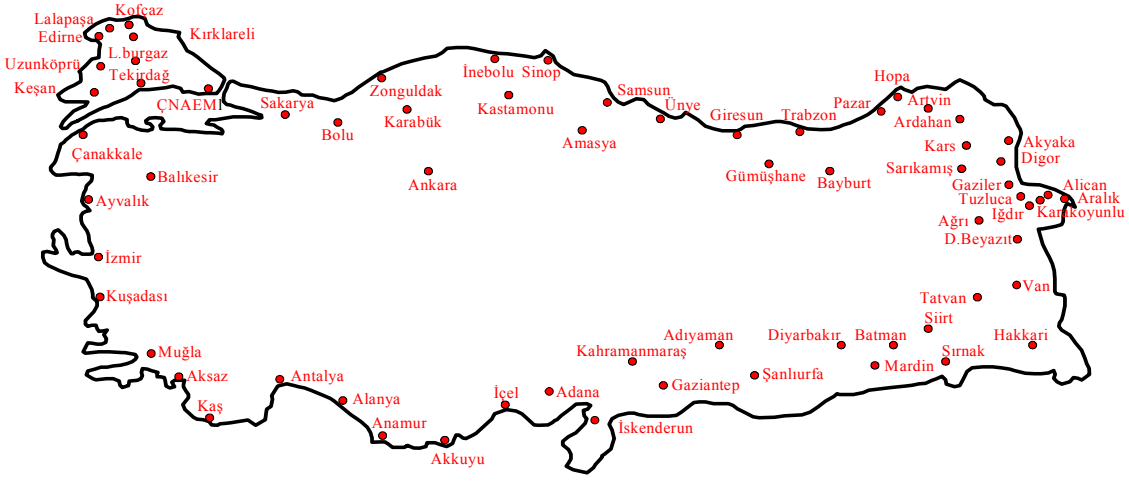
Locations of the remote stations are shown on the map.



Source : TAEK

Locations of RESA Stations

8. Have you identified contaminated areas or areas with a potential risk requiring a special environmental surveillance?

The Metsamor nuclear power plant (Armenia) is about 16 km away from the eastern border of Turkey. Kozlodoy (Bulgaria) and Cernavoda (Romania) nuclear reactors are about 300 km away from the north-western border of Turkey. Remote monitoring stations of the RESA system are installed densly in these regions.

In the eastern region, a dedicated radioactivity measurement laboratory has also been set up at Kars Kafkas University for making measurements especially around the Armenian NPP.

Article 37 of the Treaty

9. Are discharges into the environment subject to prior authorization? Please give details.

Articles 34 and 35 of the By-law on Radiation Safety are related to the rules on discharge of radioactive substances and requirements for monitoring and inspection of radioactive materials discharged to the environment.

Article 34 – It is obligatory to obtain a permit from the Authority (TAEK) beforehand for the practices requiring discharge of radioactive substances to the environment. In order to get this permit, the Licensee shall prepare a report

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involving the following information, and make a written application to the Authority:

a) The characteristics, quantity and radioactivity level of the radioactive substances to be discharged to the environment;

b) The critical groups likely to be exposed;

c) Pathways by which discharged radionuclides can deliver exposure to the critical groups;

d) The measures to be taken regarding radiation safety.

Discharge of radioactive substances of certain characteristics and quantities shall be permitted by the Authority, if the issues included in the report are considered as appropriate from the point of view of radiation safety and environmental health. In case of any deficiency found by the Authority experts in the report, such deficiencies shall be completed within a given period and release of radioactive substances shall not be permitted during this period.

Articled 35 –The establishments discharging radioactive substances to the environment are required to comply with the limits permitted by the Authority, and shall be responsible for carrying out inspections, monitoring, and reporting the results to the Authority, periodically. If the Authority deems necessary, may carry out an additional environmental monitoring program.

The By-law on Wastes from the Use of Radioactive Materials regulates discharges to the environment regarding radioisotopes of half-life less than 100 days.

For nuclear installations, the means and amount of discharge to the environment need to be declared within the Safety Analyses Report of the installation and is a part of the operating licence conditions. As long as discharges remain within these limits, discharge to the environment does not require a prior authorisation. However, there are no explicit limits set for the discharge to the environment.

For ITU TRIGA MARK II research reactor, it has been stated that discharges to the environment will be performed according to the "10 CFR 20 of US Code of Federal Regulations."

For TR-2 research reactor, it has been stated that discharge to the environment should not exceed 3.7×10^4 Bq/m^3 in liquid form in a single discharge. Monthly discharge may not exceed 10 ALI_{min} (Annual Limits on Intake), which is described in ICRP Publication 61. Gaseous discharges to the environment are performed according to ICRP Publication 30 and 60.

Both cases were found satisfactory and reactors are authorised to operate within the limits described in their respective safety analyses reports without any requirement for prior authorisation for discharges to the environment.

Radiation protection of workers and the population

10. National legislation on radiation protection. Please give an overview of existing legislation together with relevant regulations or government decrees in the following areas:

a) Health protection of the population;

b) Health protection of workers;

c) Medical applications of ionising radiation;

d) Emergency preparedness and information;

e) Contamination of foodstuffs and feeding stuffs;

f) Controls on shipments of radioactive waste and radioactive substances;

g) Management of high activity sealed sources and orphan sources

Radiation Safety and Protection Legislation:

- Turkish Atomic Energy Authority Law- 13 July 1982
- Regulation on Radiation Safety - 7 September 1985 (under revision)
- By-law on Radiation Safety - 24 March 2000 (revised on 29 September 2004)
- By-law on Nuclear and Radiological Emergency Preparedness, 15 January 2000
- By-law on the Licensing and Safety of Gamma and Electron Beam Irradiation Facilities- 18 June 1994
- By-law on Licensing of the Facilities Including Ionising Radiation Sources for Therapy Purposes in Medicine- 21 July 1994
- By-law on the Safe Transport of Radioactive Materials- September 1997 (revised on 8 July 2005)
- By-law on Wastes Arising from Usage of Radioactive substances, 2 September 2004

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- By-law on Licensing and Radiation Protection in Industrial Radiography, 8 July 2005

a, b, c) CHAPTER III of the By-law on Radiation Safety consists of four sections which are occupational (Section I), medical (Section II), public (Section III) and emergency exposures (Section IV), and sets the requirements according to types of exposures to ionising radiation.

d) CHAPTER III – Section IV of the by-law sets the requirements for emergency exposures.

By-law on Prime Ministry Crisis Management Center (Official Gazette: 9 January 1997, no. 22872 and amended Official Gazette: 21 August 2002, no. 24853)

This by-law regulates the constitution of the Prime Ministry Crisis Management Center, the definition of crises, the responsibilities of organizations that may take part during the management of crises.

By-law on Nuclear and Radiological Emergency Preparedness (Official Gazette: 15 January 2000, no. 23934)

This by-law prescribes duties and responsibilities of different organizations that may participate in nuclear or radiological emergencies.

Referring to this by-law, implementation instructions of TAEK Emergency Response Center covers the following items:

- description of the emergency organization
- emergency preparedness activities
- protective measures
- intervention levels
- contact points of national and international organizations
- notification procedures

Law on Civil Protection (Cabinet Decree: 9 June 1958, no. 7126; Official Gazette: 13 June 1958, no. 9931)

Partially related articles referring to emergency notification.

By-law on Individual Commitment, Evacuation, Deconcentration and Planning in Civil Protection (Cabinet of Decree: 5 June 1964, no. 6/3150; Official Gazette: 18 July 1964 no. 11757)

Partially related articles referring to evacuation.

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Instructions on the Establishment, Duties and Operations of Civil Protection Warning and Radiological Protection Organization (Date of Issue: 16 September 1974)

Partially related articles referring to emergency notification.

Public Information is covered by the By-law on Nuclear and Radiological Emergency and also with the implementation instructions of TAEK Emergency Response Center.

e) By-law on Nuclear and Radiological Emergency covers responsibilities of governmental organizations for sampling, monitoring and restricting the sale of contaminated foodstuffs or feeding stuffs in case of an emergency

Foodstuff Regulations for POST-CHERNOBYL ACCIDENT

After the Chernobyl nuclear accident, foodstuffs to be exported are monitored and certified for radioactive contamination by the research centers of TAEK, taking into account the limits recommended by the relevant EU legislation.

For the import of foodstuffs, there is a control mechanism established by the Undersecretariat of Foreign Trade in coordination with TAEK, according to the principles laid down in the relevant EU legislation.

By-law on Customs Article 214 states that items listed in Commission Regulation 2000/1609/EC are subject to certification from TAEK.

Foodstuff Regulations / FUTURE ACCIDENTS

This issue has been included in the implementation instructions of TAEK Emergency Response Center.

f) Transport of radioactive materials is subject to the By-law on Safe Transport of Radioactive Materials that complies with 1996 edition of By-laws for the Safe Transport of Radioactive Material of the IAEA. Draft By-laws are prepared in compliance with the Regulation (Euratom) No 1493/93 and Directive 92/3.

g) A draft by-law, complying with Council Directive 2003/122/EURATOM on the control of high-activity sealed radioactive sources and orphan sources has been prepared and submitted for approval.

Article 21 of By-law on Radiation Safety states that, in case of loss and theft of the radiation sources, necessary measures are promptly taken by the responsible officials and TAEK shall be notified about the situation.

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Part 1 - RADIATION PROTECTION (TITLE II, CHPT. 3 EURATOM)

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11. Is a system of notification / authorisation for practices involving ionising radiation in place? Are there clearly defined, established criteria within the authorisation procedures for any refusal, renewal, suspension or revocation?

Chapter II – Section II of the Regulation on Radiation Safety and Chapter IV – Section I of the By-law on Radiation Safety cover notification, authorisation for practices involving ionising radiation and, refusal, renewal, suspension and revocation of authorization.

According to Article 4e of Turkish Atomic Energy Authority Law, TAEK grants authorisation for siting, construction and operation of nuclear power and research reactors and other fuel cycle facilities.

Article 4e – TAEK has a duty "To grant approval, permit and licences related to siting, construction, operation and environmental safety of nuclear power and research reactors and nuclear fuel cycle facilities; to perform necessary inspections, to restrict the operation in case of non-compliance with the conditions of the permit or licence; to suspend or revoke the permit or licence and to make recommendations to the Prime Minister for the shut down of those installations; to prepare necessary technical legislation for these purposes."

Regulation on Issue of Licences for Nuclear Installations, Article 2 defines the nuclear facilities that need authorisation, which covers all relevant practices from mining to final depository of wastes.

Nuclear Reactor Facilities:

1. Training reactors,
2. Research reactors,
3. Materials testing reactors,
4. Test reactors,
5. Prototype reactors,
6. Reactors for heat production,
7. Reactors for electrical power production.

Nuclear Fuel Cycle Facilities:

1. Mining, milling and refining facilities,
2. Conversion facilities,
3. Enrichment facilities,

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4. Nuclear fuel element fabrication facilities,

5. Reprocessing facilities for used fuel elements,

6. Radioactive waste management facilities (including ultimate storage)

Decommissioning is not explicitly declared, however, all authorisation activities on environmental safety regarding nuclear installations are also within the responsibilities of TAEK. All exploitation facilities for uranium and thorium mining are considered nuclear installations by the Regulation.

Chapter II of this regulation defines the authorisation procedures to be followed for nuclear reactors and other fuel cycle facilities, separately. Within the procedures, requirements for applications, which are also considered as reason for refusal if they are not fulfilled to the satisfaction of the Authority, are defined in various articles of the regulation. Articles 35 and 50 describe the conditions for suspension and revocation of operating licences for nuclear reactors and other fuel cycle facilities, respectively.

The licensing process for nuclear installations is completed in three phases:

Phase I. Site Licence

1. Site preparation, water and electricity supply, road and harbour construction, etc;

2. Construction of buildings and installations other than nuclear reactor facility itself.

Phase II. Construction Licence

Step I. Limited Work Permit; (PSAR)

1. Installation of foundations of safety related building and facilities;

2. Construction of non-safety related building, systems and components.

Step II. Construction License

1. Construction of all safety related structures;

2. Erection of all the systems of nuclear reactor facility.

Phase III. Operating Licence

Step I. Commissioning Permit: Commissioning of the selected plant components and systems of particular importance to the nuclear and environmental safety.

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Step II. Fuel Loading and Pre-operational Permit: (FSAR)

1. Loading of the core;

2. Pre-operational tests up to full reactor power.

Step III. Full Power Operating Permit and Operating License: Commercial operation up to the licensed full reactor power.

However, for all these licenses and permits, the procedure is almost the same.

Each licensing stage requires submission of plans and relevant safety reports, a thorough examination, assessment and evaluation of these plans and generation of reports before approval. Contents of these plans and reports are defined in the Regulation.

The regulation does not specifically states an expiration date for operating licenses, which is interpreted as granting the licenses for lifetime of the installation. Therefore, renewal of authorisation is only a case after a suspension or revocation, as it is described in Article 54.

12. Have the principles of justification, optimisation and dose limitation been incorporated in your national legislation?

Regulation on Radiation Safety:

Article 7 – Three basic principles of dose limitation system used in radiation protection are given below:

a) Justification of Practices: By taking into account the health detriments of exposure, no practice involving ionising radiation exposure shall be authorized unless it produces clear sufficient benefit;

b) Optimisation of Radiation Protection: In all applications requiring radiation exposure, except for medical purposes, the magnitude of individual doses and the number of persons exposed shall be kept as low as reasonably achievable, economic and social factors being taken into account;

c) Dose limitation: The normal exposure of individuals, and the effective and equivalent dose delivered to the related tissue or organ due to any permitted radiation exposure, shall not exceed the annual dose limits provided in the Article 10 of this Regulation.

13. What are the dose limits for exposed workers and population?

According to the By-law on Radiation Safety:

The effective dose for radiation workers shall not exceed 50 mSv in any single year, and 20 mSv per year averaged over 5 consecutive years. The annual equivalent dose limits are 500 mSv for hands, feet or skin, and 150 mSv for the lens of the eye. For skin, equivalent dose of a 1 cm^2 area exposed to highest radiation dose is accepted as average skin equivalent dose regardless of the dose received by the other areas.

The effective dose for members of the public shall not exceed 5 mSv in a single year, and shall not exceed 1 mSv per year averaged over 5 consecutive years. The annual equivalent dose limits are 50 mSv for the hands, feet or skin, and 15 mSv for the lens of the eye.

According to the Article 6 of the By-law, persons under the age of 18 cannot be assigned to any work involving radiation applications. In the areas specified in the Article 15 of this By-law, the effective dose for apprentices and students of age 16-18 who need to use sources for education or training shall not exceed 6 mSv in a single year, provided that such practice is solely for educational purposes. In this case, the annual equivalent dose limits are 150 mSv for the hands, feet or skin, and 50 mSv for the lens of the eye. For nuclear installations, dose limits are the same as given in Article 10 of "By-law on Radiation Safety" (Official Gazette: 24 March 2000, no 23999).

Operational protection of workers

14. How is the compliance with the dose limits ensured (dosimetric services, occupational health services; experts in radiation protection; measurement, assessment and recording of exposures, etc.)?

According to By-law on Radiation Safety, Art. 21, Category A workers are obliged to use personal dosimeters. Doses of workers are monitored by individual dosimeters (film and TLD). Establishment of the occupational health services is planned. Licensees are obliged to procure a radiation safety officer and keep the records.

Compliance on radiation protection during practices concerning nuclear installations is ensured by review and assessment of Radiation Protection Programme, required by Articles 26 and 45 of the Regulation on Issue of Licences for Nuclear Installations for granting operating licence for nuclear reactors and other fuel cycle facilities, respectively. Granting the operating license requires assessment of the Radiation Protection Programme to the satisfaction of the Authority.

During the operation of the facility, compliance is ensured through inspections of the installation in accordance with the Chapter IV – Section I of the Regulation.

15. Are suitable radiation protection training programmes established and maintained for the training of the exposed workers? Is there a formal recognition (certificate)?

TAEK organizes the training programmes for radiation safety and protection for different audiences in different levels when necessary. Participants are certified following an examination.

To have an established Training Programme, including retraining, and to notify the Authority on any changes in this programme is required from research reactors by the Article 23 of "By-law on Operating Organisation, Personnel Qualification and Operating Personnel Licences for Research Reactors" (Official Gazette: 21 October 2005, no 25973). According to the article 24, radiation protection should be a part of this training.

Exposed workers are classified in four groups in research reactors as chief operator, operator, radiation protection personnel and maintenance personnel. Technical competence of these personnel is certified within the Training Programme through examinations, according to article 27.

For radiation protection and maintenance personnel of the facility, a notification of assignment is required by article 6, where the certification is a requirement for them by articles 19 and 20.

Chief operators and operators need to be licensed by the Authority by articles 10 and 11, respectively, according to the procedures described in section 7 of the above mentioned by-law.

16. Did your competent authority define criteria for the classification of working areas?

Controlled Areas and Supervised Areas are identified in the By-law on Radiation Safety, Art. 15.

a) Controlled areas: the area with the restricted access and the work carried out under the specific rules regarding radiation protection and the radiation worker likely to be exposed to radiation more than 3/10 of the average annual equivalent dose limits of five consecutive years.

Radiation warning signs shall be available at the entrances of, and in the controlled areas:

1) Basic radiation symbols indicating radiation areas.

2) Signs with necessary information, symbols and colours to clearly indicate the significance and magnitude of the radiation exposure hazard.

3) Warning signs, indicating the necessity to use protective clothes and tools, and the necessity of time limitation,

b) Supervised Areas: the area where 1/20 of the annual dose limits for radiation workers is likely to be exceeded but, 3/10 of the doses is not expected to exceed and where individual dose monitoring is not obligatory but work place radiation monitoring is required.

17. How is the medical surveillance of exposed workers organised? Do occupational medical doctors receive specific training in radiation protection if they have to monitor exposed workers?

In Article 23 of the By-law on Radiation Safety: For the radiation workers to be employed in the radiation areas, pre- employment medical examination report is required.

Hematological examinations for the persons working in the controlled areas shall be made at least once a year. The hematological examinations for the personnel working in the controlled areas shall be carried out at least once a year. These periods may be shortened if considered necessary by the TAEK, and the related reports are preserved.

There is no specific training in radiation protection for medical doctors who examine the exposed workers.

18. Are there specific provisions for outside undertakings (contractors of operators) the outside workers?

A draft by-law to adopt the Directive 90/641/EC on the operational protection of outside workers exposed to the risk of ionising radiation during their activities in controlled areas has been prepared and submitted for approval.

Work activities

19. Are work activities involving a significant increase of exposure to natural radiation (in the sense of Title VII of Directive 96/29/Euratom) covered by your radiation protection legislation? (a) If yes could you indicate in which sectors and (b) what are the main requirements?

Article 38 of the By-law on Radiation Safety states the work activities that involve the presence of natural radiation sources and lead to a significant increase in the exposure of workers or members of the public that cannot be disregarded from the radiation protection point of view. It is essential to take

measures in order to protect flight personnel and workers who work in mining and processing activities of mine ores involving uranium and thorium, and mines (mineral salts, phosphorus materials) involving natural radionuclides with high-level radioactivity. Workers working in the scope of this article are informed about the radiation they received and related health risks.

Intervention

20. Has a national plan been established?

In Turkey, the main responsible organization for wide scale emergency management is the Crises Management Center (CMC) under supervision of Prime Ministry. It is responsible for all kind of disasters including large-scale nuclear and radiological emergencies, and acts as a coordination center among ministries and governmental authorities relevant to the disaster.

Except its small core group, CMC is not a permanent organization. It is constituted in case of any wide scale emergencies. The leading authority under the CMC is selected depending on the type of emergency. TAEK is the leading organization for the wide scale nuclear emergencies.

The By-law on Nuclear and Radiological Emergency prescribes duties and responsibilities of different organizations that may participate in nuclear or radiological emergencies. Also, Implementation Instructions of TAEK Emergency Response Center to be used in the event of a nuclear accident or radiological emergency.

These Instructions cover the following items:

- description of the emergency organization
- emergency preparedness activities
- protective measures
- intervention levels
- contact points of national and international organizations
- notification procedure

During a nuclear or radiological emergency, TAEK gives advices for protective measures and the measures are implemented in coordination with the other relevant agencies. Protective measures like sheltering, evacuation, distribution of iodine tablets, decontamination are recommended by TAEK, decided by CMC and applied by the related ministry and entities.

Nuclear and Radiological Emergency Response Instructions of TAEK, aiming the determination of the measures to be taken and activities to be performed in order to protect individuals, public and the environment, is to be activated with the initial notification of emergency and deactivated when all related agencies have completed their tasks. In the Instructions, implemented and coordinated by the TAEK, emergency organization, emergency preparedness activities, and protective measures are briefly explained and intervention levels, contact points of national and international organizations, notification procedures, inventory of monitoring equipment, etc. are included as well.

21. (if relevant) Are local and national plans tested at regular intervals? Are these plans periodically validated by emergency exercises and if so with what frequency?

TAEK carries out and participates in national and international exercises on radiation emergencies, but not at regular intervals.

According to the articles 26 and 45 of Regulation on Issue of Licences for Nuclear Installations, having an emergency response plan is a requirement for granting operating license for nuclear reactors and other fuel cycle facilities, respectively. Even though, there is no explicit requirement for the frequency of regular emergency drills for testing and validating the plan, the periodic testing of the plan is a part of information to be provided in Safety Analyses Report of the installation which will be thoroughly reviewed and assessed according to international best practices before granting any authorisation.

22. Are there national arrangements for rapidly informing neighbouring countries on bilateral basis about emergency situations and when such situations arise? Indicate those neighbouring countries with which there is a bilateral arrangement of emergency information exchange.

Bilateral agreements on "early notification of nuclear accidents" were concluded with Bulgaria (1997) and Ukraine (2001). Negotiations with Russia and Romania are in progress.

23. Is prior information delivered to the population groups in connection with the intervention plans? (in the sense of Directive 89/618/Euratom)?

This subject is covered by the By-law on Nuclear and Radiological Emergency. "… TAEK performs all kinds of training activities by posters, brochures, magazines, books, etc. publications and mass media tools such as radio, television in order to inform the public on measures to be taken in case of dangerous situations, on the effects of radiation and similar issues. TAEK cooperates with Ministry of Internal Affairs, Ministry of Health, Ministry of National Education, Ministry of Agriculture and Village Affairs, Ministry of

Environment and other ministries, institutions and their affiliates during those activities…"

24. Is there a requirement to provide immediate information to the public in the case of an accident and if so what channels of communication are needed?

In case of an accident the public is informed through radio, television, the emergency notification system, the Internet and printed media.

Medical exposures

25. Are there specific provisions for the radiation protection in the medical field?

Chapter III – Section II of the By-law on Radiation Safety is on "Medical Exposures" is constructed on 97/43 Directive. It consists of the Articles given below:

- Radiation protection of patients,
- Justification of the medical exposures,
- Optimisation of the medical exposures,
- Quality assurance in medical exposures,
- Guidance levels for medical exposures,
- Exposures for medical research purposes,
- Dose Limitation for Volunteers and visitors,
- The patient discharge limits,
- Missadmistration of patients.

It is planned that the 97/43/Euratom Directive on Medical Exposures will be adopted separately and enforced by the Ministry of Health.

26. Are diagnostic reference levels used to inform medical doctors on the doses they deliver during examinations?

Diagnostic reference levels for diagnostic radiology and nuclear medicine are placed in Annex-4 of the By-law on Radiation Safety.

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Part 1 - RADIATION PROTECTION (TITLE II, CHPT. 3 EURATOM)

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27. Which category of professionals can take the clinical responsibility for the medical exposure to ionising radiation (prescriber, radiologist, nuclear medicine specialists, radiotherapist or another health professional)?

Radiologists in diagnostic radiology, radiotherapist in radiotherapy and nuclear medicine specialists in nuclear medicine can take the clinical responsibility.

28. How many experts in medical physics are available in your country? What is their scientific background and which training did they receive? Are experts in medical physics involved in all fields (radiotherapy, nuclear medicine and radiodiagnostic)?

The postgraduate education programs for medical physicists in the radiation oncology are held in the Institute for Oncology in Istanbul University and Oncology Institute of Hacettepe University in Ankara. These programs essentially cover radiotherapy physics, treatment planning, radiobiology, anatomy, and radiation protection continuing for 2 - 3 years including the thesis.

Diagnostic and Nuclear Medicine Physicist postgraduate education programme has been continuing in the Department of Physics Engineering of the Faculty of Engineering in Ankara and Institute for Health Sciences of 9 Eylul University in İzmir.

In the "Regulation for Licensing of Radiotherapy Facilities", the licensee is liable to employ a physician qualified in radiation therapy, sufficient number of radiotherapy physicists one of whom having at least two years clinical experience, a radiation protection officer, and a sufficient number of technicians with certified radiotherapy education. The number of medical physics experts in nuclear medicine and diagnostic radiology is very limited.

29. How is the radiation protection training of medical doctors, dentists, radiologists, technicians and radiographers organised? Does continuing training exist? If so, by whom is it organised?

Ministry of Health recognizes the diplomas of medical doctors, dentists, radiologists, technicians and radiographers. There is not a standard radiation protection courses in their syllabus. They may participate in TAEK's radiation protection programmes.

30. Are there specific provisions on medical equipment?

Article 26 and 27 of the By-law on Radiation Safety give requirements for medical equipment.

Article 26 – a) The equipment used in medical exposure shall be so designed that; failure of a single component of the system be promptly detectable so that any unplanned medical exposure of patients is minimized;

b) The equipment must incorporate the features required to keep the exposure at minimum level in cases of unplanned exposures, which may occur due to human fault;

c) The information relating to issues which may lead to cases specified under paragraph (a) and (b) shall be obtained from the supplier;

d) The characteristics of the equipment must be in compliance with the Turkish Standards (TS), if these are not available, with the standards of International Standardization Organization (ISO), International Electro-Technical Committee (IEC), European Union, or with the other equivalent national standards;

e) Performance specifications and operating and maintenance instructions shall also include Radiation Protection and Safety Instructions.

f) Technical specifications of the equipment shall be in conformity with the provisions of the relevant specific regulations.

Article 27 – a) Quality inspections of the equipments including quality controls are performed by the Institution and/or organizations authorized by the TAEK.

Foodstuffs and feeding stuffs

31. Is there any legislation establishing maximum levels of contamination of foodstuffs in case of radiological emergency?

This issue has already been included in the implementation instructions of TAEK Emergency Response Center.

Same provisions will be inserted into By-law on Nuclear and Radiological Emergency that is under revision.

Appropriate mechanisms for sampling, monitoring and restricting the sale of contaminated foodstuffs or feeding stuffs have already been established by the By-law on Nuclear and Radiological Emergency. According to this by-law, TAEK is responsible for monitoring, Ministry of Agriculture is responsible for sampling and governor of the province is responsible for the restriction of foodstuffs and feeding stuffs, in the case of any nuclear accident or other radiological emergency.

32. Is there an official control mechanism (inspectorate) as well as laboratory monitoring facilities capable of checking the levels of radioactive contamination of foodstuffs and feeding stuffs placed on the market?

Taking into account the Recommendation 2000/473/Euratom concerning the monitoring of the levels of radioactivity in the environment for the purpose of assessing the exposure of the population as a whole, coordination with Ministry of Agriculture is carried out.

In this context, samples of foodstuffs and feeding stuffs taken by the local authorities are analysed in the laboratories of TAEK. Sampling program covers all country and aims to compile all necessary data on the background environmental radiation.

For the suspicious material or for any demand TAEK has the capability and is ready to make necessary measurements and controls.

33. Are the points of entry into your territory and the production and trade sectors equipped with measurements devices?

Points of entry into territory are monitored by stationary or portable radiation measurement devices.

Controls on shipments of radioactive waste and radioactive substances

34. How are these kind of shipments supervised? Is there an administrative procedure in place?

According to the Regulation on Radiation Safety transportation, export and import of the radiation sources are subject to obtaining permits from TAEK. Those who want to transit radiation sources are required to notify TAEK. Inspection is performed by TAEK experts at the point of commencement of transportation or customs if necessary. Chapter IV – Section II of the By-law on Radiation Safety prescribe procedures for licences and permits.

Transport of radioactive materials is regulated by the By-law on Safe Transport of Radioactive Materials that complies with 1996 edition of Regulations for the Safe Transport of Radioactive Material of the IAEA. A legislation that would comply with 93/1493/Euratom Regulation and 92/3/Euratom Directive is under preparation.

Safe management of high-activity sealed radioactive sources and orphan sources

35. How is the traceability of high activity sealed radioactive sources ensured in your country? Is there a register of sources / source holders?

Article 50 of the By-law on Radiation Safety it is obligatory to get license from the Authority to produce, export, import, purchase, sale, transport, store, maintain, repair, install, dismantle, replace, work with and to posses and use for all purposes of the radiation sources.

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Part 1 - RADIATION PROTECTION (TITLE II, CHPT. 3 EURATOM)

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According to article 36, used sealed radioactive sources shall not be transferred by the licensee to other persons or organizations written notification to TAEK in advance.

Sealed radioactive sources shall not be transferred by the licensee to other persons or organizations without written notification to TAEK in advance.

Article 47 in CH. III – Section IV states that in case a radiation source is lost, stolen or damaged, the Licensee shall immediately take necessary precautions and notify TAEK about the situation promptly.

Radioactive sources, facilities and licence holders are registered at a database at TAEK.

36. Are there specific provisions dealing with the safe recovery of orphan sources?

Article 21 of the Regulation on Radiation Safety states that, in case of loss and theft of radiation sources, necessary measures are promptly taken by the responsible officials and the situation shall be promptly notified to TAEK.

- All scrap metal importing facilities have stationary and mobile radiation detection systems and emergency plans.
- TAEK trains the staff of metal processing facilities.
- Main border passages to Turkey are monitored by radiation detection systems.

A draft by-law, complying with Council Directive 2003/122/EURATOM on the control of high-activity sealed radioactive sources and orphan sources has been prepared and submitted for approval.

Final consideration

37. What is the estimated timetable for compliance with the Euratom Treaty and derived legislation provisions on radiation protection? Please provide any draft amendments or draft new legislation under consideration for the future.

TAEK legislation is mostly in-line with the relevant Euratom legislation.

The following legislation is under revision with the aim of full compliance:

i- By-law on Accounting for and Control of Nuclear Materials (Official Gazette: 10 September 1997, no. 23106)

ii- By-law on Nuclear and Radiological Emergency Preparedness (Official Gazette: 15 January 2000, no. 23934)

Additionally, technical studies for the following legislation are in progress:

i- By-law on Shipments of Radioactive Substance and Waste

ii- By-law on Radiation Protection of Outside Workers

iii- By-law on High Activity Sealed Sources and Orphan Sources

iv- By-law on Laying Down Basic Safety Standards for the Protection of the Health of Workers and the General Public Against the Dangers of Ionising Radiation

Screening Chapter 15 Energy

NUCLEAR ENERGY

Part 2 - SUPPLIES (TITLE II, CHAPTER 6)

1. **Are there any nuclear materials within the territory of the candidate countries? (For the purposes of this question, the term "nuclear materials" includes any of the ores, source materials and special fissile materials as defined in Article 197 of the EURATOM Treaty, irrespective of the quantity of the nuclear materials.)**

   Yes. Detailed information is given in the answer of the second question.

2. **Are there persons, undertakings or other entities within the territory of the candidate countries who/which may be concerned, directly or indirectly, in transactions relating to nuclear materials? (The Agency is not aware of any nuclear power plants operating within the territory of the candidate countries; please confirm whether or not it is so. Please indicate also any research reactors or commercial companies, which may act as intermediaries, if any.)**

   Legislation concerning nuclear mineral exploration, exploitation and mining are as follows:

   i- Law on Boron Minerals, Trona and Asphaltit Mines and Exploitation of Nuclear Energy Raw Materials No. 3971 (Official Gazette: 19 February 1994, no. 21854)

   ii- Mining Law No. 3213 (Official Gazette: 15 June 1985, no. 18785, amended by Law No. 5177 Official Gazette: 5 June 2004, no. 25483)

   According to Article 2 of the Law No. 3971, "uranium and thorium exploration and exploitation can only be conducted by the State".

   General Directorate of Mineral Research and Exploration (MTA) carries out exploration of uranium and thorium according to the establishment laws.

   ETİ MINE, a state enterprise, holds the exclusive right of exploitation of uranium and thorium minerals according to the Cabinet Decree No. 7/16681 (Official Gazette: 31 October 1978, no. 16462).

   The Mining Law 3213 establishes principles, requirements and procedures regarding exploration, operation, ownership and abandonment of mines. General Directorate of Mining Affairs of Ministry of Energy and Natural Resources regulates mining activities in Turkey and responsible for licensing and inspection of mining activities.

NUCLEAR ENERGY

Part 2 - SUPPLIES (TITLE II, CHAPTER 6)
(CONT'D)

Article 2 of the Mining Law classifies minerals into five groups:

i- Sand and gravel

ii- Marbles and aggregates

iii- Dissolved salts and CO2

iv- Metallic, industrial and energy minerals (including uranium and thorium)

v- Precious stones

Article 7 of the Mining Law defines permissions for mining activities and determines the principles with regard to the performance of environmental impact assessment, issues on non-sanitary establishments and accessing the land.

Article 16 of the Mining Law defines principles for application, licensing and assessment.

According to Article 24 of the Mining Law, before the end of the exploration license term, the license holder applies for an operation license submitting an exploration activity report that includes reserve information of the detected minerals and the restoration plan of the mining area. If the proven reserve is still available, license duration may be extended.

Article 50 of the Mining Law states that "produced uranium and thorium ores shall be sold to the State or to entities determined by the Council of Ministers."

According to Articles 4.b, 4.d, 4.e, 4.j, 8.a and 8.b of Turkish Atomic Energy Authority (TAEK) Law No. 2690 (Official Gazette: 13 July 1982, no. 17753), TAEK deals with the issue from safeguards, physical protection/security and safety points of view; and grants permits or licenses to exploit, import, export, hold, store, transfer or transport of nuclear materials, based on the amount of special fissionable material, its form, usage purpose, etc.

Secondary legislations issued for these purposes:

i- Regulation on Issue of Licenses for Nuclear Installations (Official Gazette: 19 December 1983, no. 18256): defines procedures and requirements for licensing of nuclear reactors and nuclear fuel cycle facilities, including permits for transportation of nuclear fuel to the nuclear reactor facility and fuel loading.

ii- By-law on Accounting for and Control of Nuclear Materials (Official Gazette: 10 September 1997, no. 23106): defines procedures and requirements concerning safeguards of nuclear materials.

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Part 2 - SUPPLIES (TITLE II, CHAPTER 6)
(CONT'D)

iii- By-law on Physical Protection of Special Nuclear Materials (Official Gazette: 20 July 1979, no. 16702): defines procedures and requirements concerning Physical Protection of Special Nuclear Materials.

iv- By-law on the Safe Transport of Radioactive Materials (Official Gazette: 10 September 1997, no. 23106) (revised – Official Gazette: 8 July 2005, no. 25869): defines procedures and requirements concerning the transport of nuclear/ radioactive materials.

v- By-law on Permitting Exports of Materials, Equipment and Related Technology Used in Nuclear Field" (Official Gazette: 15 February 2000, no. 23965): covers provisions on permissions required for exports of nuclear materials included in the lists of Nuclear Suppliers Group and Zangger Committee and of those materials, equipment and components used in nuclear field.

vi- Communiqué on the Import of Radioactive Materials and Devices" No 2006/3 (Official Gazette: 31 September 2005, no 26040): gives Harmonized Tariff System (HTS) list for the nuclear materials require import permissions from Turkish Atomic Energy Authority.

HTS 2612.10.10 Uranium ores and pitchblende, and concentrates thereof, with a uranium content of more than 5% by weight,

HTS 2612.20.10 Monazite; urano-thorianite and other thorium ores and concentrates, with a thorium content of more than 20% by weight,

HTS 2844 Radioactive chemical elements and radioactive isotopes (including the fissile or fertile chemical elements and isotopes) and their compounds; mixtures and residues containing these products,

HTS 2845 Isotopes other than those of heading 2844; compounds, inorganic or organic, of such isotopes, whether or not chemically defined

HTS 8401 Nuclear reactors; fuel elements (cartridges), non-irradiated, for nuclear reactors; machinery and apparatus for isotopic separation

vii- Regulation on Radiation Safety (Official Gazette: 7 September 1985, no. 18861) (under revision) and By-law on Radiation Safety (Official Gazette: 24 March 2000, no. 23999) (revised – Official Gazette: 29 September 2004, no. 25598): defines procedures and requirements concerning safety of nuclear/ radioactive materials.

NUCLEAR ENERGY

Part 2 - SUPPLIES (TITLE II, CHAPTER 6)
(CONT'D)

a) If yes, have such persons/undertakings/entities concluded any contract which may possibly fall under the scope of Chapter VI of the Treaty?

There are three nuclear installations using nuclear fuel or nuclear material.

i- TAEK is operating a research reactor which is 5 MW pool type with MTR type fuel (TR-2) in Çekmece Nuclear Research and Training Center (ÇNAEM) at Istanbul. It is used for radioisotope production, material tests and educational purposes.

ii- There is a Nuclear Fuel Pilot Plant being operated in ÇNAEM since 1986. It is a home-made facility, using natural uranium, covering uranium refining and conversion to sinterable UO2, and manufacturing UO2 pellets.

iii- There is a 250 kW TRIGA Mark II pulse reactor in Energy Institute of Istanbul Technical University, which is still being operated for educational purposes.

TR-2 Research Reactor fuel was supplied in 1992. Currently, there is no plan to purchase new fuel for TR-2.

All fuel of TRIGA Mark II Research Reactor was supplied in 1979. Existing fuel considered sufficient for lifetime operation. Hence, there is no plan to purchase new fuel.

U_3O_8 and thorium are used at Nuclear Fuel Pilot Plant for trial pellet production. Currently, there is no plan to purchase new raw nuclear material.

Exploration studies for uranium and thorium reserves were mostly conducted before 1990. Approximately 9000 tonne U_3O_8 and 380000 tonne ThO_2 reserves were determined during these studies. A pilot mining installation has been operated. Currently, there is no uranium or thorium mining in Turkey, because known reserves considered not economical.

NUCLEAR ENERGY

Part 2 - SUPPLIES (TITLE II, CHAPTER 6)
(CONT'D)

b) If not, are there any resident in the candidate countries who intends to engage in transactions with nuclear materials or any plans relating to the establishment of nuclear installations (such as nuclear power plants, research reactors, other installations within the front-end nuclear fuel cycle or intermediary companies)?

Nuclear energy

Part 3 - SAFEGUARDS (TITLE II, CHAPTER 7 EURATOM)

1. Do any locations in your country have the status of Facility or LOF under IAEA Safeguards?

We have three facilities in Turkey under IAEA safeguards. Two of the facilities are TR-2 research reactor (TR-A) and fuel pilot plant (TR-C), both located in Cekmece Nuclear Research and Training Center, Istanbul. The third facility is a Triga Mark II research reactor (TR-B) located at the Energy Institute of Istanbul Technical University. Turkey has no Location Outside Facility (LOF) under IAEA safeguards.

Please provide co-ordinates of the State System of Accountancy and Control (SSAC) (name of the Head of the service, contact details, identify the ministry responsible)

Turkish Atomic Energy Authority (TAEK) is the responsible authority for regulating the State System of Accountancy and Control activities in Turkey. Nuclear Safety Department of TAEK is carrying out those activities related to accountancy and control of nuclear materials.

Contact details:
Nuclear Safety Department
Turkish Atomic Energy Authority
Eskisehir yolu, 9.km
06530 Ankara – Turkey

2. Is there a national system of Safeguards Inspections? If yes, is it integrated into the SSAC?

The national system of Safeguards Inspections is integrated into the SSAC. Inspection of nuclear facilities is carried out by TAEK. There are two types of safeguards inspections performed by TAEK: routine inspections and special inspections. Routine inspections are for verification of accountancy data and Physical Inventory Verification (PIV). Special inspections are performed in case of unusual events, such as unauthorized movement or loss of nuclear materials or destruction of special seals pertaining to the IAEA or TAEK.

3. Do national inspectors accompany IAEA inspectors on Safeguards inspections or on complementary accesses under the Additional Protocol?

National inspectors accompany IAEA inspectors when they carry out the inspections under the Safeguards Agreement or on the complementary accesses under the Additional Protocol.

4. Is reporting to the IAEA under the Additional Protocol carried out by the SSAC?

Reporting to the IAEA under the Additional Protocol is carried out by the SSAC.

5. Are there any SITES as defined in the Additional Protocol?

There are two sites as defined in the Additional Protocol. One of them is Cekmece Nuclear Research and Training Center, which includes TR-A and TR-C, Istanbul. The other one is the Energy Institute of Istanbul Technical University, which includes TR-B.

6. Please provide information on the number of locations holding U or Pu exempted from IAEA Safeguards according to Articles 36 or 37 of the Comprehensive Safeguards Agreement?

According to Articles 36 or 37 of the Comprehensive Safeguards Agreement, TR-A and TR-C facilities also hold U or Pu exempted from IAEA Safeguards.

7. Please provide a list of any international agreement -in particular with US, Canada or Australia- covering the supply of nuclear materials which impose requirements on tracking of nuclear materials or physical protection of nuclear materials or special safeguarding measures. If yes has any material or equipment been transferred under the agreement in question?

Bilateral Agreements	Date of ratification
Agreement between the Government of **Canada** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	12.02.1986
Agreement between the Government of the Republic of Turkey and the Government of the **Argentine Republic** for Co-operation in the Peaceful Uses of Nuclear Energy	08.05.1991
Agreement between the Government of **Korea** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	18.03.1999
Agreement between the Government **French Republic** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	signed (not yet ratified)
Agreement between the **United States of America** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	signed (not yet ratified)
Agreement between the Government of the **Federal Republic of Germany** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	signed (not yet ratified)

TR-2 Research Reactor fuel was obtained from France in 1992. All fuel of TRIGA Mark II Research Reactor was supplied by USA in 1979. U_3O_8 being used at Nuclear Fuel Pilot Plant was purchased from Canada in 1986. In the facility, there is also thorium, which was purchased from France in 1998.

Two sub-agreements were concluded between TAEK and AECL-Canada under the framework agreement in 1995 and 1999.

Screening Chapter 15 Energy

Nuclear energy

Part 4 – EXTERNAL RELATIONS (TITLE II, CHAPTER 10 EURATOM)

1. What bilateral agreements has your country concluded in the field of nuclear energy?

Turkey has concluded bilateral agreements on “cooperation in the peaceful uses of nuclear energy” and on “early notification of a nuclear accident”. Table 1 lists these bilateral agreements.

Table 1. Bilateral Agreements

Agreements	Date of ratification
Agreement between the Government of **Canada** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	29.06.1986
Agreement between the Government of the Republic of Turkey and the Government of the **Argentine Republic** for Co-operation in the Peaceful Uses of Nuclear Energy	08.02.1992
Agreement between the Government of **Korea** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	12.04.1999
Agreement between the Government **French Republic** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	signed (not yet ratified)
Agreement between the **United States of America** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	signed (not yet ratified)
Agreement between the Government of the **Federal Republic of Germany** and the Government of the Republic of Turkey for Co-operation in the Peaceful Uses of Nuclear Energy	signed (not yet ratified)
Agreement between the Government of the Republic of Turkey and the **Cabinet of Ministers of Ukraine** on Early Notification of a Nuclear Accident and Exchange of Information on Nuclear Facilities	02.05.2001
Agreement between The Government of Turkey and the Republic of **Bulgaria** on Early Notification of a Nuclear Accident and Exchange of Information on Nuclear Facilities	11.09.1997

Also, "Memorandum of Understanding for Technical Cooperation and Exchange of Information in Nuclear Regulatory Matters between the Turkish Atomic Energy Authority and **the State Nuclear Regulatory Committee of Ukraine**" signed on June 2005 was submitted for ratification.

These cooperation agreements are framework agreements that define the cooperation areas, general provisions and procedures concerning their implementation. The following are the general possible cooperation areas explicitly defined in most of those agreements:

a) basic and applied research and development with respect to the peaceful uses of nuclear energy;

b) scientific and technological research and development, design, construction, commissioning, operation, test and maintenance, decommissioning of nuclear facilities;

c) utilization of research reactors and particle accelerators;

d) production and application of radioactive isotopes in industry, agriculture, medicine, and biotechnology;

e) licensing, nuclear safety, radiation protection, environment protection, radioactive waste management;

f) nuclear safeguards and physical protection, etc.

Cooperation may be undertaken in the following forms:

a) exchange and training of scientific and technical personnel;

b) exchange of scientific and technical information;

c) transfer of licenses and patent rights;

d) organization of scientific and technical meetings, and other joint activities;

e) supply and exchange of nuclear material, material, equipment and facilities;

f) provision of relevant technological consultancy and services;

g) setting up of joint working groups to carry out specific studies and projects on scientific research and development in the fields of mutual interest;

h) technology transfer under special agreements between related institutions regarding nuclear facilities; and

i) other forms of cooperation as may be agreed upon by the Parties.

These framework agreements will be implemented by concluding "implementing arrangements" between either Party or authorized persons/entities, which is specifying the terms and conditions of particular cooperative programs and projects, the procedures to be followed, financial agreements and other appropriate matters. Such implementing arrangements will be concluded in accordance with the respective laws and regulations of the Parties.

These framework agreements include also some provisions concerning retransfer, safeguards and physical protection of the nuclear material, material and equipment supplied pursuant to agreement. They are mostly concluded for a period of fifteen years and are automatically extended for five-year periods unless either Party notifies the other Party in writing its intention to terminate the agreement at least six months before the expiration date.

Except for the agreement concluded with Canada, there has been no implementation of those bilateral agreements on cooperation in the peaceful uses of nuclear energy, so far.

There were two sub-agreements based on the framework agreement, which were concluded between TAEK and AECL-Canada:

i- Technical Cooperation Agreement: It was concluded on July 1995 and remained valid for a period of one year. Some computer codes used for safety analysis of CANDU reactors were transferred to TAEK to facilitate the review of CANDU technology.

ii- Joint Research Project Agreement: It was concluded on February 1999 and remained valid for a period of four years. A scaled CANDU header experimental test facility was constructed at the Mechanical Engineering Department of Middle East Technical University (METU). CATHENA thermal-hydraulic analysis computer code was transferred to METU and TAEK for validation of the code by using the results of the experiments. Some experiments were conducted and their results were reported to AECL.

2. Is it presently negotiating such agreements?

Negotiations with Russia and Romania for "co-operation in the peaceful uses of nuclear energy" and "early notification of nuclear accidents" are in progress.

3. Is your country a party to multilateral agreements in the nuclear sector?

More particularly, what is your country's position concerning the following conventions:

(1) Convention on Nuclear Safety (signed in 1994);

(2) Convention on the Physical Protection of Nuclear Material (signed in 1980) and its amendment (signed on July 8th, 2005);

(3) Convention on Early Notification of a Nuclear Accident (adopted in 1986);

(4) Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency (signed in 1986);

(5) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (adopted in 1997)?

.Turkey is party to international Treaties, Conventions and Protocols. listed in Table 2 below.

Table 2. International Treaties, Conventions and Protocols

International Legal Instruments	**Date of ratification**
Treaty on the Non-proliferation of Nuclear Weapons	28.11.1979
Treaty Banning Nuclear Weapons Tests in the Atmosphere, in Outer Space and Under Water	15.05.1965
Convention for the Protection of the Mediterranean Sea Against Pollution Arbitration	12.06.1981
Protocol for the Protection of the Mediterranean Sea Against Pollution From Land-based Sources	18.03.1987
Convention on Long-Range Transboundary Air Pollution	23.03.1983
Convention on Railway Transportation	01.06.1985
Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency	03.09.1990

Table 2. (Cont'd)

Convention on Early Notification of a Nuclear Accident	03.09.1990
Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention)	06.03.1994
Convention on the Cooperation in the Atomic Energy Field between the NATO Members and Its Amendment	10.09.1956
International Labor Conference Convention Number 115 concerning the Protection of Workers Against Ionising Radiations	23.03.1968
Convention on Nuclear Safety	14.01.1995
Comprehensive Nuclear Test Ban Treaty	26.12.1999
Convention on The Physical Protection of Nuclear Material	07.08.1986
Paris Convention on Third Party Liability in the Field of Nuclear Energy	02.11.1984

Additionally, Turkey is a member of Zangger Committee and Nuclear Suppliers Group since 1999 and 2000, respectively.

Signing the "Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management" is under consideration and exchange of inforation between the related authorities is still going on.

5. Is your country actually preparing its accession to multilateral agreements?

Please refer to the answer to question 3.

Non-exhaustive list of issues and questions to facilitate the preparation of the bilateral meeting of June 2006

ENERGY EFFICIENCY AND DEMAND MANAGEMENT

Energy Star sector

1. **What are the actions being taken by Turkey/Croatia in energy efficiency of office equipment?**

   There is no specific action regarding energy efficiency of the office equipments. Public awareness activities are carried out by DG of Electrical Power Resources Survey and Development Administration (EIE) for promoting energy efficiency for all energy using products including office equipments.

2. **Is there national legislation in force?**

   There is no national legislation in force.

3. **What has to be done to be in line with community legislation?**

4. **Who are the competent bodies (e.g. ministry of economics, or ministry of environment, or …)**

5. **Who is supporting competent bodies (national energy agency …)?**

Intelligent Energy Europe

1. **Do Turkey / Croatia have a programme similar to IEE to support non-technical measures in the area of energy of energy efficiency, renewable energy sources and use of energy in the transport sector?**

   There are some activities similar to the IEE performed by General Directorate of Electrical Power Resources Survey and Development Administration (EIE) such as;

   - Energy Efficiency Week held annually: To increase the awareness of general public, stakeholders and decision-makers penetration of energy efficiency concept through public by focused TV spots, programmes, booklets, etc.
   - Contest among the industrial plants on project or plant bases on energy efficiency annually,
   - University courses / lectures, conferences and workshops,
   - Training programmes, for energy managers of industrial and building sector,

- Technical support to local authorities in establishment of energy management units,
- Discussion meetings with private sector to assist developing new renewable energy projects.

2. Does Turkey intend to ask for participation in the next Intelligent Energy Europe Programme by concluding a Memorandum of Understanding with the EU?

The subject is under consideration.

Renewable energy sources

General situation regarding transposition, target setting and support mechanisms

1. What is the status of the alignment with the Directive 2001/77/EC, what legislation has been adopted and what is still missing?

To promote electricity produced from renewable energy sources in the internal electricity market, "Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy" (Law No: 5346) has been put into force, (Official Gazette: 18 May 2005, no 25819) which is mostly in compliance with the Directive.

2. Has an ambitious target for the share of renewable electricity of total electricity consumption been set, if not what target is being considered and when will such a target be set?

There is no specific target in the Law No: 5346. However, at present, the share of renewables in total electricity generation is around 25%. The long term planning studies for the period of 2005-2020, indicate that this share will remain same.

3. What support mechanisms are in place to promote renewable electricity, and what is the envisaged pace and scope of further development of support mechanisms for promoting renewable electricity?

"The electricity generation resources suitable for wind, solar, geothermal, biomass, biogas, wave, current and tidal energy resources together with hydraulic generation plants either canal or run of river type or with a reservoir area of less than 15 square kilometers" are defined renewable energy resources (RES) to be supported in the scope of the Law No 5346. Large hydro power plants are also considered as renewable source, but they are not included in the support mechanism defined in the Law.

There is a purchase obligation for the retail sale companies in the market for RES based electricity generation. If RES certified electricity is sufficient in the market, purchase obligation ratio shall not be lower than 8% of the previous year's sales. Public retail sale companies are exempted from this obligation until 01 January 2007.

In addition to the support mechanisms in Law on Utilization of Renewable Energy Resources for the Purpose of Generating Electricity Law No. 5346, there are certain support mechanisms in the electricity related secondary legislation. According to Article 5(p) of Electricity Market Law No.4628 (Published in Official Gazette 3 March 2001 no 24335), one of the duties of Energy Market Regulatory Board is to take necessary measures for encouraging the utilization of renewable and domestic energy resources and to initiate actions with relevant agencies for provision and implementation of incentives in this field. The support mechanisms defined in the electricity market secondary legislation are given below.

a. The legal entities applying for licenses for construction of facilities based on domestic natural resources and renewable energy resources shall only pay one percent of the total licensing fee (By-Law On Licensing in Electricity Market, Article 12).

b. The generation facilities based on renewable and domestic energy resources shall not pay annual license fees for the first eight years following the facility completion date inserted in their respective licenses (By-Law On Licensing in Electricity Market, Article 12).

c. The legal entities engaged in generation activity at facilities based on renewable energy resources may purchase electricity from private sector wholesale companies on the condition not to exceed the annual average generation amounts indicated in their licenses in a calendar year (By-Law On Licensing in Electricity market, Article 17).

d. The retail licensees shall be obliged to purchase electricity based on renewables for the purposes of re-sale to the non-eligible consumers, provided that the price of electricity generated at generation facilities based on renewable energy resources is equal to or lower than the sales price of TETAS and if there is no cheaper alternative, (By-Law On Licensing in Electricity Market, Article 30)

e) TEIAS and/or distribution licensees shall assign priority for system connection of generation facilities based on domestic natural resources and renewable resources (By-Law On Licensing in Electricity Market, Article 38).

f) Until the By-Law on Balancing and Settlement takes effect, Article 6 of Communiqué on the Principles and Procedures of Financial Settlement in the Electricity Market which mentions the legal entities subject to settlement, shall not apply to wind generation facilities and canal-type hydro-electric generation facilities which sell the electricity they generate to wholesale and retail licensees (Provisional Article 4).

g) Generation facilities listed below are exempt from the liability of being a Balancing Mechanism entity unless otherwise requested by themselves.

a) Canal or river type hydroelectric generation facilities,

b) Generation facilities based on wind power,

c) Generation facilities based on solar energy,

d) Generation facilities based on wave,

e) Generation facilities based on tidal energy,

f) Cogeneration facilities,

g) Generation facilities based on fluidized bed technology

(By-Law on Electricity Market Balancing and Settlement, Article 18)

4. Are there any possible economic, political or legal difficulties in adopting specific parts of the directive 2001/77/EC?

There are no political and legal difficulties, there may be some temporary economic constraints.

Authorization procedures

1. Please describe in detail the authorization procedures applied for giving license to build and operate plants producing electricity from renewable, what actions have been taken to simplify authorisation procedures?

By-Law on Electricity Market Licensing sets forth the principles and procedures regarding the licenses to be granted to the legal entities in Turkish electricity market.

A license is required for building and operating plants producing electricity from renewables in the electricity market.

All legal entities shall obtain separate licenses for each activity they are engaged in, and for each facility where the same activity is conducted.

All legal entities subject to private law and applying for a license in order to operate in the electricity market, are required to have been established as joint stock or limited liability companies in accordance with the provisions of the Turkish Commercial Code no. 6762.

The legal entities shall apply to Energy Market Regulatory Authority (EMRA) by submitting the documents indicated in "List of Information and Documents to be submitted during License Application" defined by a EMRA Board decision, together with License Application Form and the Commitment Letter. The following are some of the documents and information that the applicants applying for a license are required to submit to EMRA.

- License application form
- Commitment letter
- The copy of the registration document proving that the applicant applying for a license has been registered in the commercial records and the copy of the Commercial Record Gazette in which the registration is announced.
- Shareholder structure of the applicant company, including the names and shares of each shareholder.
- The main chapters of the applicant and its shareholders which have, directly or indirectly, ten percent or more shares in the capital of the applicant.
- The names, addresses, and criminal records of the real persons holding directly or indirectly ten percent (5% if the applicant is a publicly traded company) or more shares in the applicant, as well as those of board members, general manager, assistant general manager, and auditors.

For generation, autoproducer and autoproducer group license applications; the applicants are required to submit to EMRA a work schedule prepared with due regard to the features of the generation facility to be licensed and that covers the period up to the completion of the facility, and the completion date indicated in that work schedule needs to be approved by EMRA.

In cases where in the applications for generation, autoproducer and autoproducer group licenses, the establishment of a generation facility to generate electricity from domestic natural resources such as; lignite, hard coal, bituminous schist, asphaltite, geothermal, waves, tide and solar energy is desired, the applicants shall document that;

a) For lignite, hard coal, asphaltite, bituminous schist and geothermal resources: The applicants shall demonstrate that they have signed the fuel supply agreement regarding the energy resource to be used or have acquired the right of use for the energy resource or other real property rights or that such rights have been guaranteed by the authorized real persons or legal entities,

b) For solar energy resources: If the land on which the generation facility is to be established is private property and no application for expropriation has been filed, the applicants shall demonstrate that they have obtained the ownership or other real property rights on the land or that such rights have been guaranteed by the authorized real persons or legal entities.

c) For hydraulic resources: The applicants shall demonstrate that they have signed the Water Usage Right Agreement or that they have the right to be eligible to sign Water Usage Right Agreement with General Directorate for State Hydraulic Works (DSI).

The evaluation regarding whether or not the documents requested from the legal entities for application have been duly delivered, shall be completed within 10 working days following the registration date of the application documents in EMRA and in case the application is deemed to be not duly delivered, the related applicant shall be notified to complete such lacking or missing information and documents within 10 working days, or otherwise the application documents shall be returned to the applicant.

The evaluation regarding whether the documents submitted during such period have been duly delivered shall be completed within 10 working days, and in case there are any missing or lacking data or documents the related applicant shall be notified in writing, for the last time, to complete such missing or lacking points within 10 working days. In case these are

not completed within the referred 10 working days, such applications shall not be taken into consideration and application documents shall be returned to the applicants.

In order to commence the review and evaluation process regarding license applications that are determined to be duly filed, the applicants shall be notified in writing to deposit 1% of the licensing fee in the account of EMRA within 10 working days following the date of notification. Such notification shall also state that the application shall be deemed rejected in case of failure to fulfill this obligation.

The review and evaluation process regarding any license application shall commence after demonstrating that 1% of the licensing fee is deposited in the EMRA's account and information regarding the application shall be announced on the bulletin board and on the website of EMRA.

For the generation, autoproducer and autoproducer group license applications under review and evaluation, EMRA shall request the opinion of TEIAS (state owned transmission system operator) and/or the distribution licensee in the distribution region wherein the generation facility is located, regarding the connection to the transmission and/or distribution system and system use by the generation facility to be constructed. These opinions shall be submitted to the EMRA within 45 days following the date of notification.

The license applications taken under review and evaluation process is concluded within 45 days following receiving of relevant authorities' and/or institutions' final opinions those asked according to provisions of applicable legislation and deemed necessary for granting a EMRA Board decision. If deemed necessary, that period may be extended by an EMRA Board decision and the time extension is notified to the applicant.

The review and evaluation conducted by EMRA is submitted to the EMRA Board and the license application is concluded with an EMRA Board decision. In cases where the license application is rejected, the grounds for that rejection are notified in writing to the legal entities within 10 working days following EMRA Board decision.

The legal entity that is deemed eligible for obtaining a license as a result of the review and evaluation process, is notified in writing that in order to be granted the related license, it must, within 90 days following EMRA Board decision;

a) Amend main charter of the company as required,

b) Submit to EMRA the document proving that the remaining amount of the licensing fee in the account of EMRA has been paid.

The legal entity fulfilling the requirements indicated in By-Law on Electricity Market Licensing is granted the related license by an EMRA Board decision. The commercial title of the legal entity and the type and term of the license is published in the Official Gazette and announced in the website of EMRA.

By-Law on Water Usage Right Agreement (WURA) was published in the Official Gazette no: 25150 on 26 June 2003. According to the By-Law, whenever a private company applies to any of the projects listed in DSI website, name of the company is published in DSI website during one month. After one month, the project will be closed for the other companies. DSI sends an official letter to the applicant companies in order for them to prepare the feasibility reports. Feasibility reports are prepared by companies and submitted to DSI in 3 or 6 months. Application, evaluation, design and construction of applied projects are still continuing at various levels (currently 721 projects with 11380 MW installed capacity). DSI evaluates the feasibility reports and sends the eligible project to EMRA. Depending on the EMRA's decision, DSI signs WURA and afterwards EMRA grants license to the private company.

Grid access

1. **Is electricity from renewable energy sources guaranteed access to the transmission and distribution grid? If the electricity system permits, is renewable electricity given priority access? If not, why?**

   TEIAS and distribution system operators are obliged to provide the grid access services for the connection to and use of transmission and distribution systems to all system users without discrimination in accordance with provisions of network and licence regulation (Electricity Market Law No.4628. Art.2/b).

   Transmission system operator (TEIAS) and/or distribution licensees shall assign priority for system connection of generation facilities based on domestic natural resources and renewable resources (By-Law on Electricity Market Licensing, Article 38 Paragraph 11).

2. **Have objective, transparent and non-discriminatory rules on how grid connection and other grid investment costs, such as reinforcement and extensions, shall be covered been published. Please describe in detail how such costs are shared? If this is not in place, what is the timeframe for putting publishing these rules?**

   All the rules and procedures are determined by the Electricity Market Law and respective secondary legislation (Electricity Market Grid Regulation, Electricity Market Licensing Regulation, Communiqué Regarding Connection to and Use of Transmission and Distribution Systems in the Electricity Market) which have already been published.

The investment costs related to system extension and reinforcement are undertaken by transmission and distribution companies. These expenses are recovered through the system use and system operation tariffs approved by EMRA. The charges are equally shared between generators and consumers.

For the connection to the existing system, predefined and published connection charge is paid by the generators.

3. **In the case that the producer has to pay all or part of the connection cost, are they provided with detailed estimates of costs?**

Connection charges are determined in accordance with the methodology issued by EMRA.

Guarantee of origin

1. **Has a system of guaranteeing the origin for electricity from renewable energy sources been put in place, if not, what is the timeframe for putting in place such a system?**

Yes, By-Law on Principles and Procedures for Granting Guarantee of Origin was issued in Official Gazette dated October 4, 2005; No: 25956). The scope of this Regulation covers the principles and procedures for granting Guarantee of Origin to the legal entities engaged in generation activities based on renewable energy resources.

Transposition of the Ecodesign Directive (2005/32/EC) and Implementing Directives

1. **Do you have any existing legislation (or voluntary schemes etc.) for ecodesign requirements for energy using products, and in particular for the products covered by the implementing directives?**

Ministry of Industry and Trade (MoIT) has already transposed the current Implementing Directives (92/42/EEC, 96/57/EC and 2000/55/EC).

2. **What legislative measures have you taken or are you planning to take to transpose the directive and the implementing directives into your national law? What is your timetable for this? Do you have any (draft) legislation?**

Transposition of the eco-design Directive 2005/32/EC has not commenced yet. The work to determine the responsible authority in Turkey for the transposition and implemantation of the said Directive is ongoing.

All provisions of the Implementing Directives 92/42/EEC, 96/57/EC and 2000/55/EC have been transposed into national legislation through the By-Laws stated below:

- By-law on New Hot-Water Boilers (92/42/EEC) was published in the Official Gazette: 31 March 2002, no: 24712, entered into mandatory implementation on 1 January 2004.
- By-law on Energy Efficiency Requirements for Household Electric Refrigerators, Freezers and Combinations Thereof (96/57/EC) was published in the Official Gazette: 22 January 2003, no. 25001, entered into mandatory implementation on 31 December 2005.
- By-law on the Energy Efficiency Requirements for Ballasts For Fluorescent Lighting (2000/55/EC) was published in the Official Gazette: 02 May 2003 no. 25096, entered into mandatory implementation on 15 January 2005. The second phase will be mandatory as from 15 July 2006.

The above By-Laws, which have already been transposed and put into force, have been sent to the European Commission for the exchange of opinion.

1. Have you (or do you have plans to) undertaken any promotional activity to explain ecodesign to the SMEs and to other manufacturers in your country?

Regarding the current Implementing Directives (92/42/EEC, 96/57/EC and 2000/55/EC), MoIT is already in contact with the representatives of the Sector Associations through periodical meetings of Sectoral Committees established under the coordination of MoIT.

MoIT provides the participation of all stakeholders and sector representatives in the processes related with the transposed Directives including the Directives 92/42/EEC, 96/57/EC and 2000/55/EC through the Sectoral Committees stated below:

- **Technical Committee on Industry of Electric Electronic (ELTEK),** The Communiqué regarding the establishment of this Committee published in the Turkish Official Gazette dated 09 January 2005. Committee is chaired by the DG for Industry of MoIT.
- **Technical Committee on Gas Appliances (GAZTEK)** - The Communiqué regarding the establishment of this Committee published in the Turkish Official Gazette dated 06 May 2004. Committee is chaired by the DG for Measurements and Standards of MoIT.

2. How do you intend to organize proper enforcement of the directive and its existing and future implementing directives? What administrative or organisational measures have you taken or are you planning to take? Which organization(s) will be in charge?

Implementing Directive 92/42/EEC :

DG for Measurement and Standards of Ministry of Industry and Trade is responsible for the transposition and implementation of Directive 92/42/EEC. All provisions of the "Implementing Directive 92/42/EEC" is transposed into national legislation through the By-Law on New Hot-Water Boilers (92/42/EEC) which was published in the Official Gazette: 31 March 2002, no: 24712, entered into mandatory implementation on 1 January 2004.

The application, assessment and designation procedures and the criteria for the Notified Bodies (NBs) to be designated by MoIT have been set out in the "Communiqué on the Criteria for Designation of Conformity Assessment Bodies for the Products Covered by New Hot Water Boilers" (Published in Official Gazette: 24 February 2003, no. 25030)

According to the Communiqué on the Criteria for Designation of Conformity Assessment Bodies for the Products Covered by New Hot Water Boilers, Conformity Assessment Bodies (CABs) interested to be appointed by the MoIT as a NB should fulfill:

- The requirements laid down in the "By-Law on Conformity Assessment and Notified Bodies" published in the Official Gazette. 17 January 2002, no. 24643.
- Minimum criteria for NBs set out in the Annex to the By-Law 92/42/EEC.

The Communiqué covers;

- Technical and administrative criteria to be met by CABs (no additional criteria other than those mentioned in the directive, reference to EN 45000 series)
- Application procedure (where to apply, accompanying documents for application)
- Evaluation procedure
- Designation
- Duties and responsibilities of CABs

MoIT signed a Protocol with Turkish Accreditation Agency (TURKAK) on 18 April 2003. According to this Protocol, TURKAK makes all necessary assessments for designation. Upon the positive assessment report of TURKAK,

MoIT makes the final decision to notify the candidate body to the Commission via Undersecretaries for Foreign Trade (UFT).

Applications from Turkish Standards Institute and Turkish Lloyd Foundation have been received under 92/42/EEC, and notified to the European Commission upon positive assessment by TURKAK and evaluation by MoIT. The Application of Chamber of Mechanical Engineers is under the assessment of TURKAK.

A Twinning project, aiming market surveillance support in the fields of textiles, civil explosives, protective equipment used in explosive environment, appliances burning gaseous fuels, non-automatic weighing instruments, legal metrology and pre-packaging, new hot boilers and lifts is being implemented by MoIT.

Implementing Directives 96/57/EC and 2000/55/EC :

DG for Industry of MoIT is responsible for the transposition and implementation of Directives 96/57/EC and 2000/55/EC. All provisions of the "Implementing Directives 96/57/EC and 2000/55/EC" are transposed into national legislation through:

- By-Law on Energy Efficiency Requirements for Household Electric Refrigerators, Freezers and Combinations Thereof (96/57/EC) was published in the Official Gazette. 22 January 2003, no. 25001, entered into mandatory implementation on 31.12.2005.

- By-Law on the Energy Efficiency Requirements for Ballasts For Fluorescent Lighting (2000/55/EC) was published in the Official Gazette: 02 May 2003, no. 25096, entered into mandatory implementation on 15.01.2005. The second phase will be mandatory as from 15.07.2006.

The Harmonized European Standards are transposed and published as national standards by Turkish Standards Institute. In this context, The Standard EN 153 as referred to in the Directive 96/57/EC and The Standard EN 50294 as referred to in the Directive 2000/55/EC have been transposed.

For By-Laws 96/57/EC and 2000/55/EC, no application has been received for appointment as a notified body by MoIT yet.

Market Surveillance :

According to Law No. 3143 on the Establishment and Duties of the MoIT, market controls on almost all industrial products have been performed by MoIT since 1985 with its inspectors at related General Directorates and 81 Provincial Directorates. MoIT strengthened and re-organized its existing system according to the new legislation.

Market Surveillance is carried out pursuant to the provisions of:

- The Law No 4703 On The Preparation and Implementation of Technical Legislation On Products (Official Gazette: 11 July 2001, no. 24459),
- By-law No 2001/3529 On Market Surveillance of Products (Official Gazette: 17January 2002, no. 24643),
- By-law on Procedures and Principles for Market Surveillance to be Performed by The MoIT (Official Gazette: 09 May 2003, no. 25103).

According to law no. 3143, three DGs are responsible for market surveillance together with 81 Provincial Directorates: DG for Industry, DG for Measurement and Standards, DG for Protection of Consumers and Competition.

The total number of inspectors of MoIT performing Market Surveillance within the scope of its responsibility area is 670. The distribution of these inspectors among the related DG's is as follows:

DG for Industry: 25

DG for Measurement and Standards: 25

DG for Protection of Consumers and Competition: 20

Provincial Directorates: 600

In order to ensure that only safe products are placed on the market, MoIT;

- Performs inspections at places like warehouses, shops, commercial houses and storage closeouts and other places which are subject to inspection,
- Reviews the documents and/or conformity markings referred in the relevant technical By-Law,
- Makes physical examination and inspection,
- Takes samples for testing if necessary,
- When necessary, benefits from the opinions and advices of experts.

In case of non-conformities found during market surveillance activities, the administrative fines as well as sanctions are imposed pursuant to the Law No. 4703.

Sanctions include withdrawal from the market and disposal of product, prohibition of placing on the market, setting deadlines to correct non-conformities, some of which are accompanied by administrative fine.

Measures taken by MoIT differ according to the level of non-compliance and those measures are implemented pursuant to the "principle of proportionality".

A Coordination Commission on Market Surveillance has been established within the Ministry. The Coordination Commission, consisting of the Director Generals of the DG for Industry, DG for Measurement and Standards, DG for Protection of Consumers and Competition and DG for EU Coordination, the First Legal Adviser, Head of Data Processing Department under the presidency of the Undersecretary of MoIT, meets every three months. The task of the Commission is to determine the general policy of MoIT and to ensure co-ordination among different DGs and Provincial Directorates concerning market surveillance.

Transposition of the Energy Labelling Directives (1992/75/EEC) and Implementing Directives

1. **Do you have any existing legislation (or voluntary schemes etc.) giving the public energy consumption (or other product information) for household appliances, and in particular for the products covered by implementing directives?**

   No.

2. **What legislative measures have you taken or are you planning to take to transpose the directive and the implementing directives into your national law? What is your timetable for this? Do you have any (draft) legislation.**

   The labelling directives on refrigerators, deep freezers, electric ovens, dish washers, washing machines, washer-driers, tumble driers and lamps have been transposed into national legislation in the form of communiqués, which are presently in force.

   Existing legislation list is as follows:

   - Communiqué on energy labelling of household electric refrigerators, freezers and their combinations (94/2/EC), Official Gazette: 24 March 2002, no 24706, Entered into force on 24 September 2002.
   - Communiqué on energy labelling of household washing machines (95/12/EC), Official Gazette: 20 August 2002, no 24852, Entered into force on 20 February 2003.
   - Communiqué on energy labelling of household electric tumble driers (95/13/EC), Official Gazette: 20 August 2002, no 24852, Entered into force on 20 February 2003.
   - Communiqué on energy labelling of household combined washer-driers (96/60/EC), Official Gazette: 20 August 2002, no 24852, Entered into force on 20 February 2003.

- Communiqué on energy labeling of household dishwashers (97/17/EC) 20.08.2002, Official Gazette: 20.08.2002, no 24852, Entered into force on 20 February 2003.
- Communiqué on energy labeling of household lamps (98/11/EC), Official Gazette: 20 August 2002, no 24852, Entered into force on 20 February 2002.
- Communiqué on energy labeling of household electric ovens (2002/40/EC), Official Gazette: 26 February 2003, no 25032, Entered into force on 26 February 2004.

On the other hand, the draft By-Law on energy labelling of household air-conditioners transposing the Directive (2002/31/EC) was sent to the European Commission for the exchange of opinion.

3. Have your standardization bodies adopted the harmonized EN standards as national standards?

Performance standards EN 153, EN 60456, EN 61 121, EN 50 229, EN 50 304, EN 814 and EN 255 have been adopted as national standards by Turkish Standards Institute (TSE).

4. Have you (or do you have plans to) undertaken any promotional activity to explain energy labelling to the public?

Within the context of the project named as "Capacity-Building Programme for the Removal of Barriers to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labelling in EU Candidate Countries", supported by UNDP-GEF, public awareness raising activities are planned through many instruments such as television programmes, publications, printed booklets, organized meeting with other stakeholders energy labelling.

5. Have you (or do you have plans to) educate or train stakeholders (in particular sales staff) on how best to make use of energy labelling?

Parallel to the market surveillance activities carried out by the Ministry of Industry and Trade Controllers, manufacturer and retailers are informed about the technical By-Laws and their obligations according to these By-Laws.

6. How do you intend to organize proper enforcement of the directive and its existing and future implementing directives? What administrative or organisational measures have you taken or are you planning to take? Which organization(s) will be in charge? Please distinguish between measures to ensure that :

a) products are labelled, and that fiches and 'distance selling' information is supplied; and

b) the information supplied is correct.

The Ministry of Industry and Trade (MoIT) is responsible for implementation and enforcement of Energy Labelling directives.

a) Ministry of Industry and Trade, in particular the General Directorate for Protection of Consumers and Competition carries out its inspections with 20 inspectors in centre organization and the 600 local inspectors scattered in 81 provinces as of May 2006.

The activities of market surveillance and inspection of products on producers and sellers are generally realized by controlling the existence of related documents, label and fiches, in the case of distance selling the internet mail order catalogues etc. through using a standard minute called the minute of market surveillance and inspection of products. The minutes are filled by the official personnel of the Ministry during the inspection stage and signed by the authorized personnel of the producers, distributors and sellers.

As regards sanctions imposed for non-compliance of the legislation, according to the national legislation, after giving 60 day period to manufacturers to end the infringement, a fine amounting to 4,390 YTL (~2250 Euro) is imposed in case of continuous incongruity upon control at the end of 60 days.

b) Accuracy of Information (Testing Laboratories):

Currently there are no laboratories owned by MoIT. An inventory regarding the testing facilities in Turkey has been prepared to determine the competent laboratories.

The potential laboratories according to this inventory are: Turkish Standards Institution (TSE - Ankara Central Laboratory and Gebze Laboratory) and Istanbul Technical University (ITU) (Only for Lamps and Ovens)

Energy Efficiency And Demand Management

Energy Efficiency And Demand Management in General

1. Please complete the annexed table on energy efficiency and demand management

(See the Table given as an Annex)

2. What kind of supporting mechanisms are available or planned (legislative, financial, organisational, educational)?

Legislative

By-law on the rational use of energy aiming at increasing efficiency in industrial energy use was issued in Official Gazette 22460 in November 11, 1995. According to this by-law, all industrial establishments with annual energy consumption over 2000 tonnes of oil equivalent (toe) are obliged to set up an energy management system in their plants.

Furthermore, a preliminary draft law on energy efficiency which has been prepared by the participation of all concerned organizations and institutions is currently at the Prime Ministry.

Financial

Preliminary draft law on energy efficiency includes certain provisions on financing energy efficiency initiatives and stimulating investments.

Organizational and Educational

The General Directorate of Electrical Power Resources Survey and Development

Administration (EIE) is the main responsible organization since 1981. EIE carries out energy efficiency studies, public awareness and energy audits. Energy manager training program for the industrial sector has been carried out since 1995. Training program for the building sector has launched in 2006. EIE authorized the Scientific and Technological Research Council of Turkey (TUBITAK), EGE University, Osmangazi University and Chamber of Engineers in order to extend energy audit and training activities.

Energy Conservation Coordination Board (ECCB*)* was established in 1981 as a consultant working group. The secretariat of the ECCB has been assigned to

EIE in 2001. The ECCB conducts public awareness activities to improve energy efficiency.

Preliminary draft law on energy efficiency includes provisions on establishing Energy Efficiency Coordination Board (EECB) as an administrative structure. The secretariat of EECB will be conducted by EIE. Preliminary draft also includes authorization of certain organizations to conduct energy efficiency services.

3. By whom are they managed (ministries, agencies, independent bodies)?

Current activities have been carried out by EIE and organizations authorized by EIE. According to the preliminary draft law on energy efficiency, management of financial issues will be conducted by EECB and EIE.

4. At what level do they exist (national, regional, local)?

National Level

5. How are these activities co-ordinated, monitored and evaluated?

Within the scope of the existing by-law, EIE organizes energy manager training programs for industrial and building sectors, conducts audits in industrial sector upon the requests of plant owners and monitors the training activities of the authorized organizations. Energy Conservation Board (ECCB) also coordinates the activities to increase public awareness.

EIE monitors energy managers in industrial establishments and evaluates their factory reports.

In accordance with the circular entitled "The measures to be taken by the Public Organizations in order to reduce energy consumptions" which was issued in November 1997 by the Prime Ministry, all public organizations have prepared reports for the energy consumptions in their buildings and these reports have been transmitted to EIE for evaluation.

There are some provisions on preliminary draft on energy efficiency for coordinating, monitoring and evaluating of these activities by EECB and EIE.

6. Is there international cooperation in the field of energy efficiency and demand management policy?

EIE has conducted many international projects since 1981 such as;

Energy efficiency audits have been carried out in iron & steel, aluminum, textile and glass factories under the project by UNIDO in 1981.

Energy efficiency studies conducted within eleven factories of five sectors, having high energy intensity, in cooperation with three foreign companies by using credits from World Bank in 1982- 1984.

Energy saving potential had been determined by energy efficiency studies for fifteen factories of iron & steel, chemistry, cement, electro-metallurgy, ceramic, beer and textile sectors, financed by World Bank between 1988-1991.

The studies in cooperation with Japan International Cooperation Agency (JICA) was started in 1995. Within the framework of this project, conducted in the years 1995 - 1996, Energy Efficiency Audit studies were performed for iron & steel, electric arc furnace, brick, textile and detergent sectors.

"Energy Conservation Project" has been completed by EIE in cooperation with JICA in 2000 – 2005 to improve the efficiency activities of EIE on energy efficiency training and audits.

Twinning project, aiming to strengthen the administrative and legal framework and to determine energy saving potentials, indicators and barriers on sectoral basis, has been carried out by EIE in cooperation with ADEME from France and SENTERNOVEM from the Netherlands. The project of 20 months was started in July 2005. EIE also acts as an international centre where courses are being organized for the engineers from the Black Sea, Balkan, Middle East, Asia and Mediterranean countries in the scope of Third Country Training Program Project in cooperation with JICA.

Within the scope of technical cooperation agreement between Turkish and German Governments, a project entitled "Efficient Utilization of Energy in the Building Sector of Turkey-Pilot Region Erzurum" has been initiated in 2002. The project was carried out in cooperation with German Technical Cooperation Agency (GTZ), EIE and the Municipality of Erzurum. The project was completed in October 2005.

The Project on "Capacity-Building Programme for the Removal of Barriers to the Cost-Effective Development and Implementation of Energy Efficiency Standards and Labelling in EU Candidate Countries" officially started at the end of July 2005 after the project document has been signed by the GEF Focal Points of the candidate countries (Bulgaria, Romania, Croatia and Turkey). Implementation Phase of the project, which will be carried out under the coordination of EIE and participation of Ministry of Industry and Trade, will commence at the first quarter of 2007.

Increasing Public Awareness on Energy Efficiency in Buildings under the EU-Turkey Financial Cooperation Programme will be commenced at the beginning of 2007. Within the project, training modules and awareness materials will be developed for determined target grups such as students, housewives, small constructers etc.

7. Is there cooperation with financial institutions (World Bank, EIB, EBRD, private banks) in the field of energy efficiency and demand management?

Cooperation with World Bank on energy efficiency projects took place in the years of 1982- 1984 and 1988-1991.

Cooperation with World Bank on Energy Sector Management Asssitance Programme took place between 1999-2000 and on Turkey-Energy and Environment Review" in 2002.

Promotion of cogeneration

1. Please provide details on the trends and current size and position of cogeneration in general and high efficiency cogeneration in particular within the energy sector (including fuel use, share in electricity generation capacity, position of the utilities, role of autoproducers, kind of applications agricultural/heating and cooling/industrial).

Cogeneration plants, most of which are autoproducers, reached a total installed capacity of 3600 MW by the end of 2004, corresponding to 9.8 % of total installed capacity of Turkey. This figure represents a nearly four-fold increase in cogeneration capacity during the period 1990-2004. The Law No:3096 on "Granting Authorization to Institutions other than the Turkish Electricity Authority for Generation, Transmission, Distribution and Trade of Electricity" provided incentives for the autoproducer plants until the enactment of the Electricity Market Law No:4628 in 2001. The Electricity generated by cogeneration plants was realized as 20.8 TWh (13.8 % of total electricity generation) in 2004.

Cogeneration plants utilize a diverse range of fuels, though the main source is natural gas. Since cogeneration plants are mostly autoproducers, they are utilized in industrial sector including the refineries (11 % in terms of total fuel use in 2004)

2. Please provide data on the efficiency of the cogeneration sector, the primary energy savings being reached and the way of establishing these (including the use of efficiency reference values and calculation methodology and possible differences with the approach in the cogeneration Directive and the outcome of the cogeneration committee).

TURKSTAT has been conducting a project in order to align the procedures pertaining to the statistics with EUROSTAT norms. Energy statistics, including the cogeneration sector, are being covered within the scope of this project so as to ensure harmonization. Transmission System Operator (TEIAS), which has been collecting data in the electricity sector for statistical purposes, is involved in this project. In the scope of this project, the necessary database is going to be established including the assessment of the performance of the

cogeneration plants, in accordance with EUROSTAT principles, procedures and methodologies.

3. What kind of definitions is currently being used for cogeneration and high efficiency cogeneration in legislation and by statistical agencies?

Cogeneration is defined as combined heat and power generation in the framework of the electricity market secondary legislation.

4. Is there a system in place to support (high efficiency) cogeneration and if so, please provide details, especially if market forces are used (guarantee of origin, certificate trading schemes, feed-in tariffs, priority grid access, ….). Are these systems managed by the government or independent bodies? Are changes planned in the context of the acquis, especially the cogeneration Directive?

Electricity Market secondary legislation includes certain provisions providing exemptions for cogeneration from certain requirements.

- Exemption from the "minimum frequency control requirement" for cogeneration facilities having a total efficiency over 70 % in terms of regional heating and commitments to supply heat and vapour to their customers. (Article 21 of By-Law on Grid - Official Gazette: 22 January 2003, no. 25001)

- Exemption from the requirements of participation to balancing and settlement for cogeneration facilities having a total efficiency of higher than 70 % in terms of regional heating and commitments to supply heat and steam to their customers. (Article 18 of By-Law on Balancing and Settlement - Official Gazette: 04 August 2002, no. 24836 ; Article 19 of By-Law on Licensing -Official Gazette: 04 August 2002, no. 24836)Supporting provisions regarding cogeneration are considered in the preliminary

Draft Law on Energy Efficiency.

5. If such a support system is in place, please provide details on the effects and cost-effectiveness for the promotion of cogeneration. Is there special consideration for micro and small scale cogeneration, or will there be?

See above.

6. What is the opinion on participating in the common model on CHP guarantees of origin being developed by the Commission and the Association of Issuing Bodies?

This issue will be evaluated after the finalization of the legislative studies.

7. What is the current situation on grid access for electricity from cogeneration? Is size of the CHP unit relevant? What steps are planned for grid access for small scale and micro cogeneration units and is the grid being prepared for this?

Tranmission System Operator (TEIAS) and distribution system operators are obliged to provide the grid access services for the connection to and use of transmission and distribution systems to all system users without discrimination in accordance with provisions of network and licence regulation (Electricity Market Law No.4628. Art.2/b).

Transmission system operator (TEIAS) and/or distribution licensees shall assign priority for system connection of generation facilities based on domestic natural resources and renewable resources (By-Law on Electricity Market Licensing, Article 38 Paragraph 11). Cogeneration plants falling under this scope are given priority for grid access.

8. There are many reporting obligations in the acquis on cogeneration (statistical data, analysis of the national potential, administrative barriers and procedures, evaluation of support schemes, progress in cogeneration). Which institutions or bodies will be involved and how will the reporting be coordinated?

This issue will be addressed after the finalization of the legislative studies.

9. How is the role and potential of cogeneration and the necessity for its promotion taken into account in related energy policy fields like the promotion of the use of biomass for heating and cooling, the energy performance of buildings, the promotion of energy services and energy service companies and in related environmental acquis (including allocations for emission trading and acquis on emissions) ?

Considering the significant growth in demand and the high level of import dependency in the primary fuel mix, cogeneration is addressed as an important tool to contribute in achievement of the security of supply and emission mitigation through improved efficiency.

Energy end-use and energy services

1. Please provide information on the dimension of the sector, including global figures on the number of energy service companies (including district heating and cooling) and their position in the total energy market.

There is no information available.

2. Which authority will probably be given responsibility for ensuring that Article 4.4 of the Directive is complied with?

According to the preliminary draft law on energy efficiency, The General Directorate of Electrical Power Resources Survey and Development Administration (EIE) will be the responsible authority.

3. Have you considered which 2 or more public sector obligations will be chosen from the Annex? How do you plan to implement them?

In Annex 6, item (d) and (e) can be considered eligible for implementation by the secondary legislation.

4. Have you considered how to place the obligations in Article 6, on the energy distribution companies or the retailers?

The preliminary draft law on energy efficiency includes the provisions in order to promote the energy efficiency service companies by giving authority so as to conduct energy efficiency services such as training, audits and consultancy services.

There is a provision in the preliminary draft law on energy efficiency on the demand side management measures to be regulated by the secondary legislation.

5. Do you fully understand the way to calculate the target and energy savings?

A training program would facilitate understanding.

6. Will you use a co-efficient for electricity, e.g. 2.5?

This issue is under evaluation at present.

7. How do you intend to implement the requirement on metering and billing?

The preliminary draft law on energy efficiency includes requirements for retail sale companies for electricity and gas, and for the heating systems for buildings.

8. Is your expectation there will be a fund for energy efficiency?

Preliminary draft law on EE includes some provisions on financial support for financing energy efficiency measures.

9. Will there be enough capacity to ensure the wide availability of independent high quality energy audits?

Energy audits have been carried out by audit teams of EIE and TUBITAK. Preliminary draft law envisages extension of this activity to private companies to

be authorized by EIE, universities and chamber of engineers upon completion of training programs.

Energy performance of buildings

1. **At which level/how are you informed about the EPBD implementation actions and implementation procedures in the MS (e.g. "Buildings Platform" and related newsletters, working groups for CEN standards used as basis for the EPBD certificate) in order to benefit from their experiences?**

   We are informed about EPBD implementation actions and implementation procedures in the Member States and the technical studies are ongoing.

2. **At which level/how are you informed about the EPBD related "SAVE" promotion projects? Are the experiences of those practical projects already used for the EPBD implementation process? Are there any contacts to the IEEA (coordinator of the SAVE projects)?**

   We are informed about SAVE promotion projects. However practical project experience in the content of SAVE and contact with IEEA were not realized.

3. **What is the situation concerning the experts who shall accomplish the certification of buildings according to EPBD? How many experts do you need, how many are there already and which training do they have? Who is/will be responsible for the accreditation of the experts? How is the independency of the experts guaranteed?**

   The number of the experts and the training requirements as well as necessary organizations about the qualification and training of the experts who shall accomplish the certification of buildings will be clarified upon finalizing the studies on the legislation about the implementation of the EPBD.

4. **What is the schedule for the implementation of the several articles of the EPBD?**

   The insulation part of the EPBD articles has already been covered in By-Law on Heat Insulation of Buildings, Official Gazette dated 8 May 2000, no 24043. Technical studies concerning the implementation of the EPBD are continuing.

5. **Who (of the government/ministries) will be responsible for the enforcement of the certification of buildings? Who will check the implementation of certification when a building is sold, newly rented out or refurbished?**

   The studies on the legislation regarding the implementation of the EPBD are in progress by the Ministry of Public Works and Settlement. The responsible body

for the certification will be clarified when the studies on the legislation about EPBD are completed.

6. Are there statistical data about the stock and the average energy performance condition of existing buildings for the whole country? If so, please provide global figures.

There are studies for the statistical data on the building stock. However these studies do not cover the average energy performance information of the existing buildings.

7. Have you been able to study the 31 CEN standards that have been developed to facilitate the integrated calculation methodology?

The 31 CEN standards will be taken into consideration during the studies on the legislation about the implementation of EPBD.

8. Which alternative will you use for inspecting boilers?

By-Law on The Control of the Air Pollution Caused by Heating (Official Gazette 13 January 2005, no: 25699) is concerned on restriction of the chimney smoke emission of the heating centres. This By-Law does not aim at inspection of general performance of boilers. On the other hand, inspections are being performed within the scope of emission control. Further measures for the inspection of boilers will be determined during the legislative studies.

9. Will you use asset values or metered values for measuring performance?

The methodology on measuring performance will be determined during the studies on the legislation.

Screening Chapter 15 Energy

ANNEXBrussels, 16 May 2006

INFORMATION RELATED TO ENERGY EFFICIENCY AND DEMAND MANAGEMENT

Main fields EU acquis	Turkish relevant legislation or existing support schemes[1]	Responsible services within Turkish administration (legislation, enforcement)	Main differences between Turkey and EU acquis
Promotion of high efficiency cogeneration	No explicit support mechanism at present	MENR, EIE	
Energy services, including ESCOs and district heating	-By-law on the Measures to be Taken to Increase Energy Efficiency in industrial Plants (Official Gazette: November 11, 1995, no 22460) **-**Preliminary Draft Law on Energy Efficiency	MENR, EIE	-Turkish existing by-Law and preliminary draft law on EE cover the energy managers, authorization of universities, chambers of engineers and private companies, financial supports for final customers, -In EU acquis, there is specific numerical target, giving responsibilities to energy distributors to conduct EE services, providing financial supports for Energy Service Companies

[1] Please include name legislation and reference to Turkish OJ + 1 page explanatory fiche per measure

Energy end-use efficiency in buildings (system approach; including energy efficiency aspects in building regulations and in legislation on construction materials)	-By-law on Construction Products (Official Gazette 8 September 2002 no: 24870) -By-law on Heat Insulation in Buildings (Official Gazette 8 May 2000, no 24043)	Ministry of Public Works and Settlements	-The Directive 89/106/EEC has been transposed into Turkish legislation within the customs union relationship between EU and Turkey and it is fully aligned. -By- law on heat insulation in buildings covers the envelope insulation and heating energy demand. -In EU acquis, energy efficiency in buildings means the total building energy performance
Energy end-use efficiency in appliances: minimum efficiency requirements (including lifecycle approaches)	**1. Regulation on New Hot-Water Boilers (92/42/EEC)** has been published in the Official Gazette No: 24712, dated 31 March 2002 and Entered into mandatory implementation on 1 January 2004. **2. Regulation on Energy Efficiency Requirements for Household Electric Refrigerators, Freezers and Combinations Thereof (96/57/EC)** has been published in	**Ministry of Industry and Trade is responsible for the transposition and implementation of Regulations 92/42/EEC, 96/57/EC and 2000/55/EC.**	All provisions of the Implementing Directives 92/42/EEC, 96/57/EC and 2000/55/EC are transposed into national legislation through the Regulations under consideration.

	the Official Gazette No. 25001, dated 22.01.2003, and entered into mandatory implementation on 31.12.2005. **3. Regulation on the Energy Efficiency Requirements for Ballasts For Fluorescent Lighting (2000/55/EC)** has been published in the Official Gazette No. 25096, dated 02.05.2003, and entered into mandatory implementation on 15.01.2005. The second phase will be mandatory as from 15.07.2006.		
Energy end-use efficiency in appliances: labelling	**1. Communiqué on energy labelling of household electric refrigerators, freezers and their combinations (94/2/EC),** Published in the OG of 24.03.2002, Entered into force on 24.09.2002 **2. Communiqué on energy labeling of household washing machines (95/12/EC),** Published in the OG of 20.08.2002, Entered into force on 20.02.2003 **3. Communiqué on energy labeling of household electric tumble driers (95/13/EC),** Published in the OG of 20.08.2002,	Ministry of Industry and Trade (MIT) is Responsible for Transposition and Enforcement of Energy Labelling Framework Directive (92/75/EEC) and Its Implementing Directives	All provisions of the directives were transposed, except 2003/66/EC. There are ongoing harmonization studies for the amendment of Communiqué on energy labelling of household electric refrigerators, freezers and their combinations (addition of A+ and A++ energy efficiency classes for refrigerators) for transposing directive 2003/66/EC

	Entered into force on 20.02.2003 **4. Communiqué on energy labeling of household combined washer-driers (96/60/EC),** Published in the OG of 20.08.2002, Entered into force on 20.02.2003 **5. Communiqué on energy labeling of household dishwashers (97/17/EC) 20.08.2002,** Published in the OG of 20.08.2002, Entered into force on 20.02.2003 **6. Communiqué on energy labeling of household lamps (98/11/EC),** Published in the OG of 24.03.2002, Entered into force on 24.09.2002, **7. Communiqué on energy labeling of household electric ovens (2002/40/EC),** Published in the OG of 26.02.2003, Entered into force on 26.02.2004. **8. Technical studies on energy labelling of household air-conditioners (2002/31/EC),** sent to the EU Commission for exchange of opinion.		

Energy end-use efficiency at the consumer level (including households and transport)	The present taxation regime favors less cylinder volume/fuel consuming passenger cars. Nearly 25% of tax deduction is applied on the rate of Special Consumption Tax for the purpose of replacing old (20 years old) cars with new ones.		