



Present Status of Turkey in Carbon Capture and Storage

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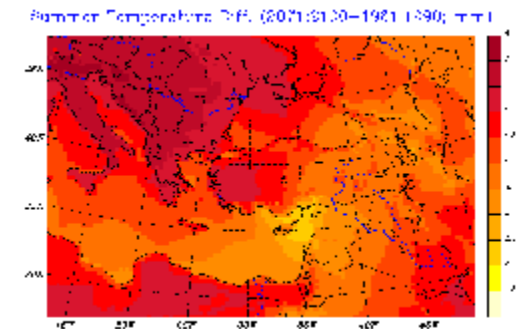
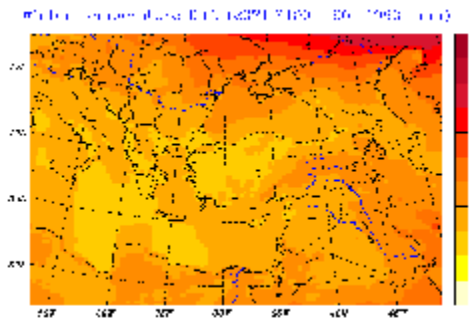
- Turkey is a mountainous country in the conjunction of Europe and Asian continents that has a surface area of 780,000 km² with 90% of its land laying at an altitude over 250 m. above the sea level. Turkey has unique biodiversity and richness in terms of topography, climate and flora cover. While, high mountain ecosystems parallel to the coast are located in the north and south regions, mountains in the western regions are situated vertically to the coast.

- Over 80% of the country's soil is under the risk of erosion of varying degrees. Although Turkey has high number of lakes and rivers, water resources are limited. Surface waters cover 1.6% of the land area. As renewable resources, forests cover 26% of the country.

- Turkey has mineral resources such as lignite, coal, copper and iron. There is also small amount of petroleum and natural gas production. There is a high potential for hydroelectricity and geothermal energy production.
- Due to migration and rapid urbanization, infrastructure requirements such as education, health, drinking water, sewerage, housing, urban transportation and environmental pollution of the urban areas have increased.

- **Air pollution:** The increase in the use of low quality coals by the urban poor has caused a rapid increase in air pollution in Turkey's urban areas. Other factors contributing to the high rates of air pollution in urban areas are incorrect placement of industrial facilities, gaps in the supervision of industrial production, and inadequacies in public transportation.

- **Access to water resources, water pollution and coastal destruction:** Large portions of Turkey's groundwater reserves used for drinking water have been depleted and surface waters are increasingly being used for that purpose. Turkey is extremely rich in marine resources, but due to the damages caused by developments in industry, transportation, urbanization and tourism, she cannot utilize them in a productive manner.



Turkey and Climate Change Effects

Temperature Changes

- decreasing trends in Black Sea region
- widespread decreasing tendency in the central Anatolian region

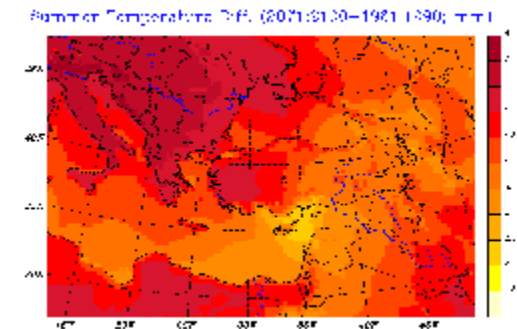
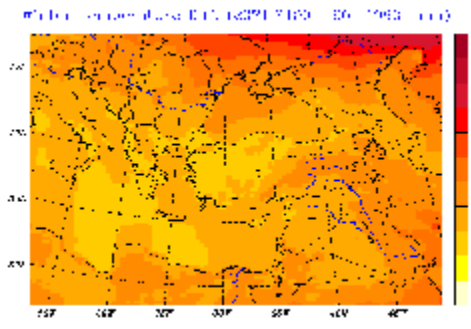
Rising sea-level

- increased flooding
- sedimentation across the delta plain
- interrupting agricultural activity

(Particularly on Kızılırmak, Yesilirmak, Gediz, Seyhan and Ceyhan plains)

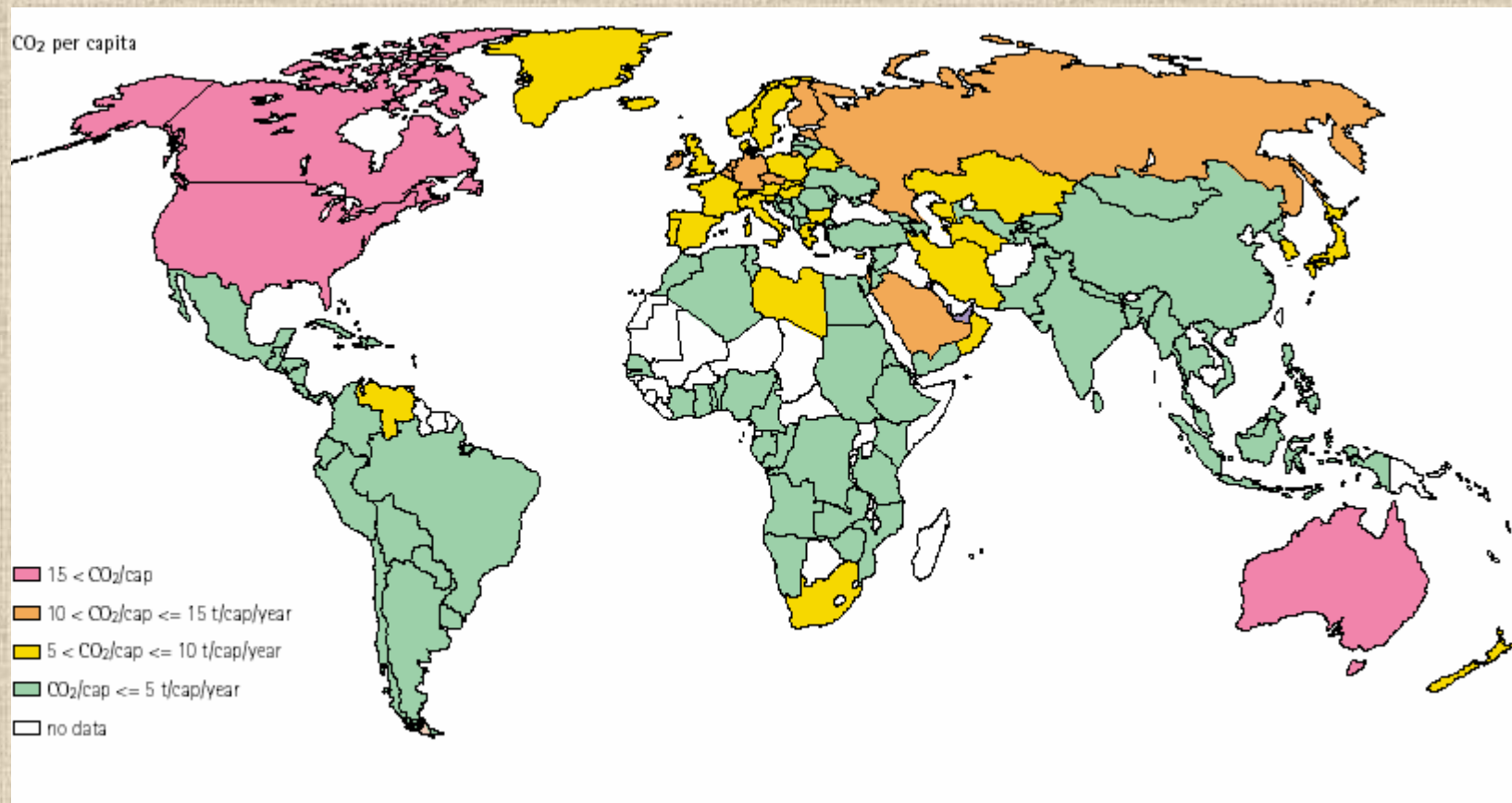
Example: Gediz River Basin

- second largest in the Aegean Region,
- total drainage area of about 18,000 km²
- water scarcity due to water competition among various uses (agriculture, textile, industry) and water allocation problems,
- environmental pollution in addition to the fact that the basin experiences droughtness,



Global Emission Trends and Turkey

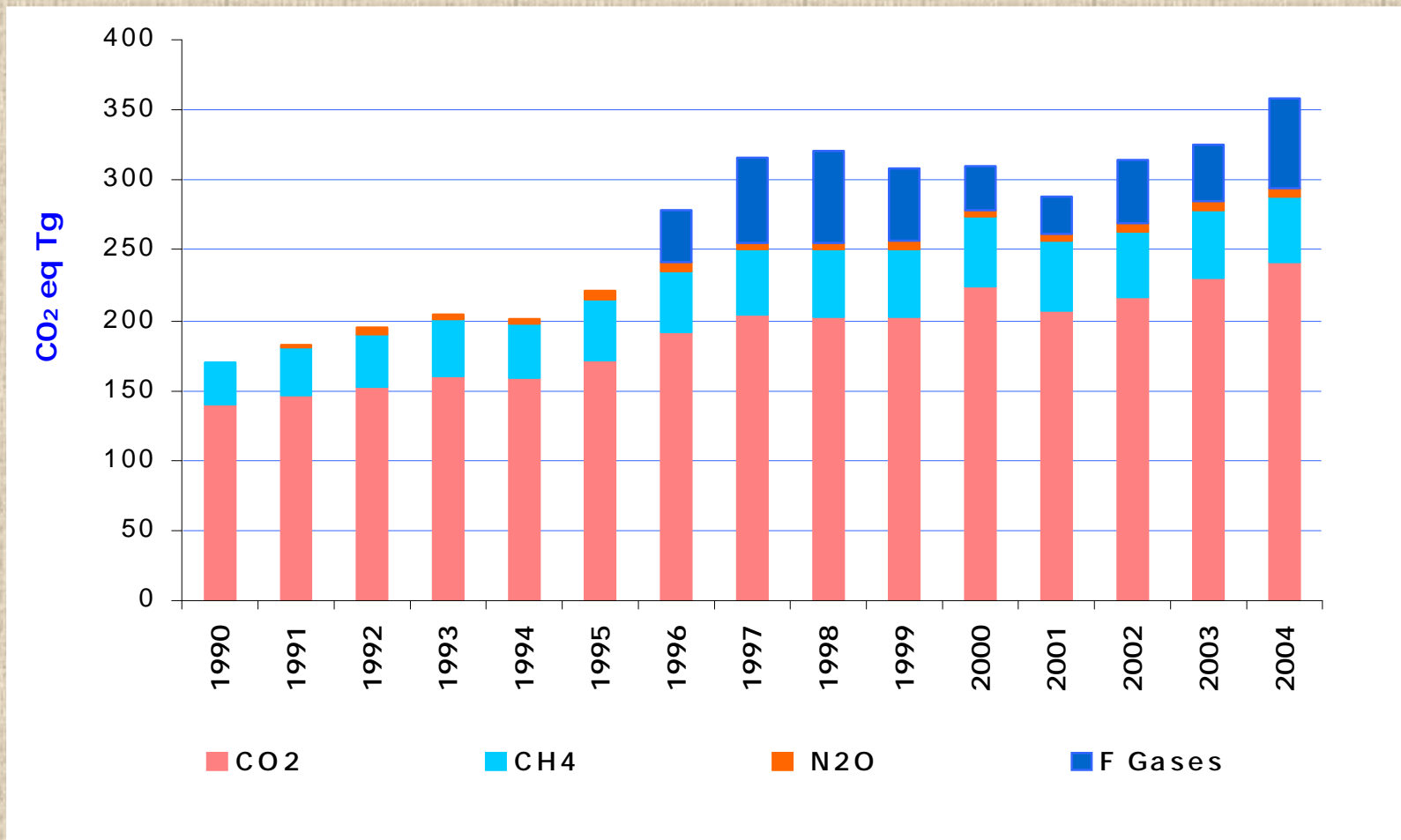
World CO₂ ton/ capita-year



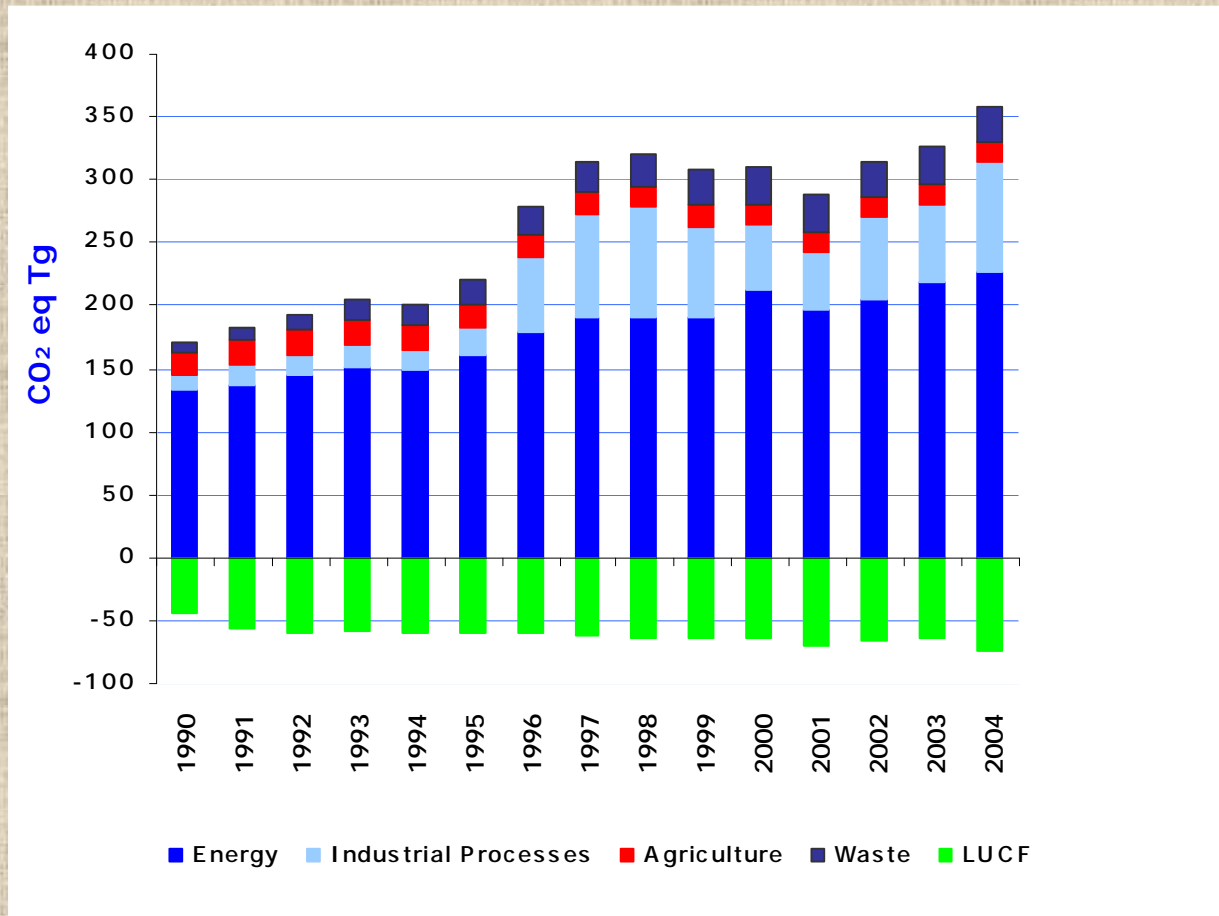
World and Turkey's CO₂ Emission Status

Parameters (2003)	Turkey	EU-15	OECD	World
CO ₂ Emissions (Tg)	0,231	3,447	12,780	24,983
CO ₂ /Per capita (ton)	3.3	9.0	11.1	4.0
Total GHG Emissions, CO ₂ eq (Tg)	0,325	4,18	n.a.	n.a.
GHG /capita CO ₂ eq (ton)	4.6	10.9	n.a.	n.a.

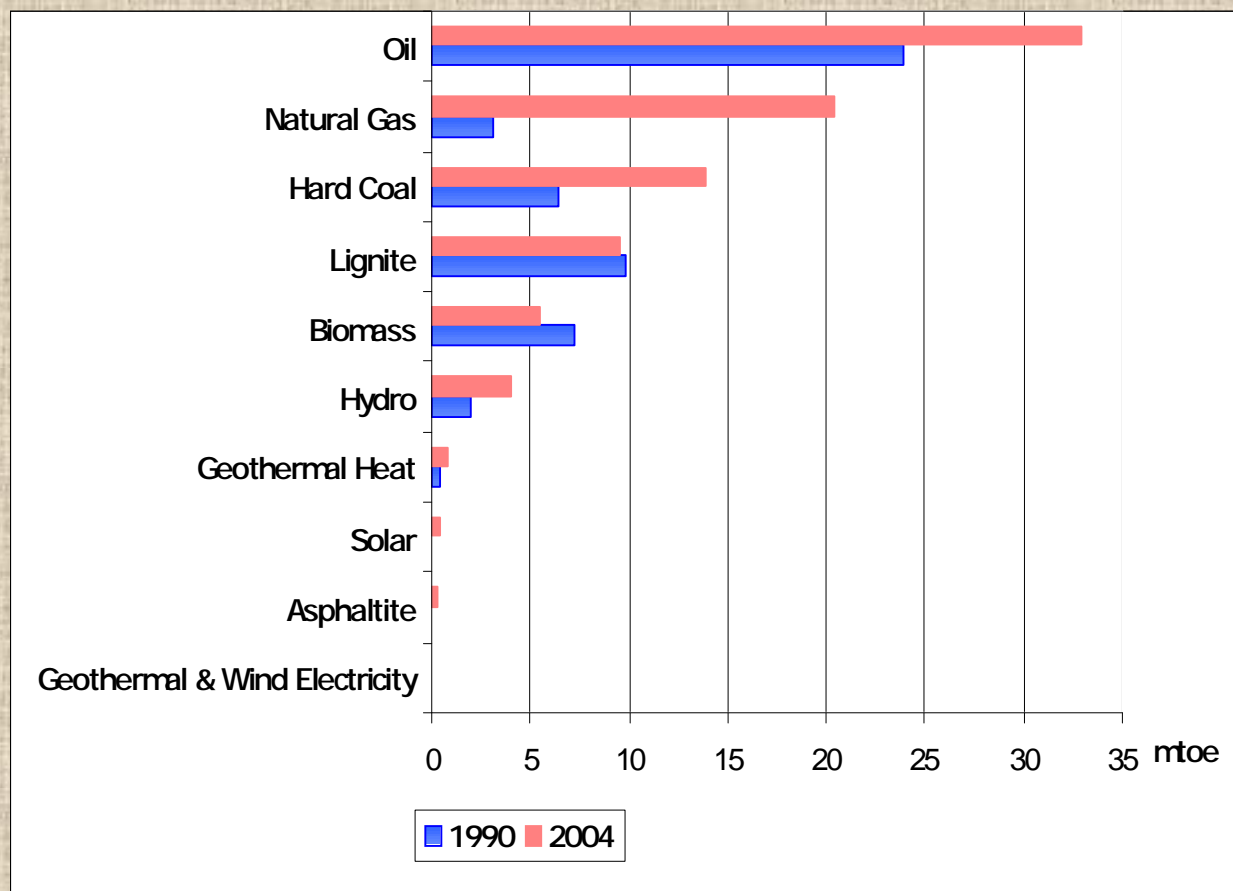
GHG Emissions of Turkey



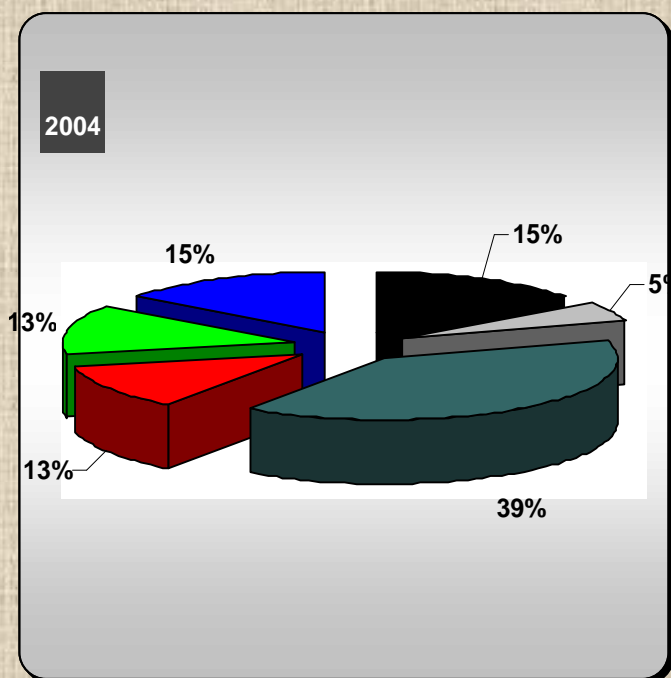
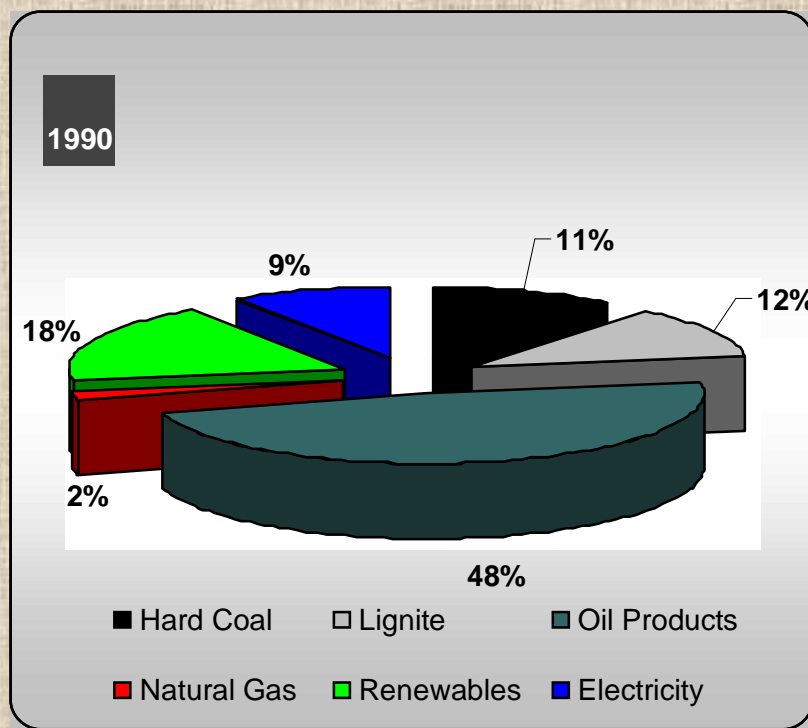
Sectoral GHG Emissions of Turkey



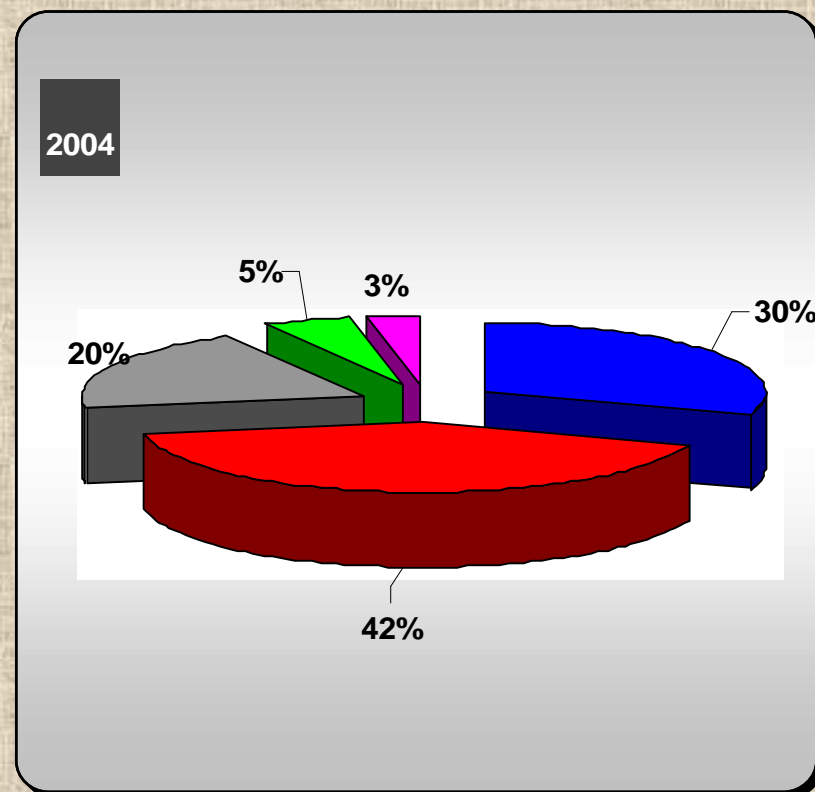
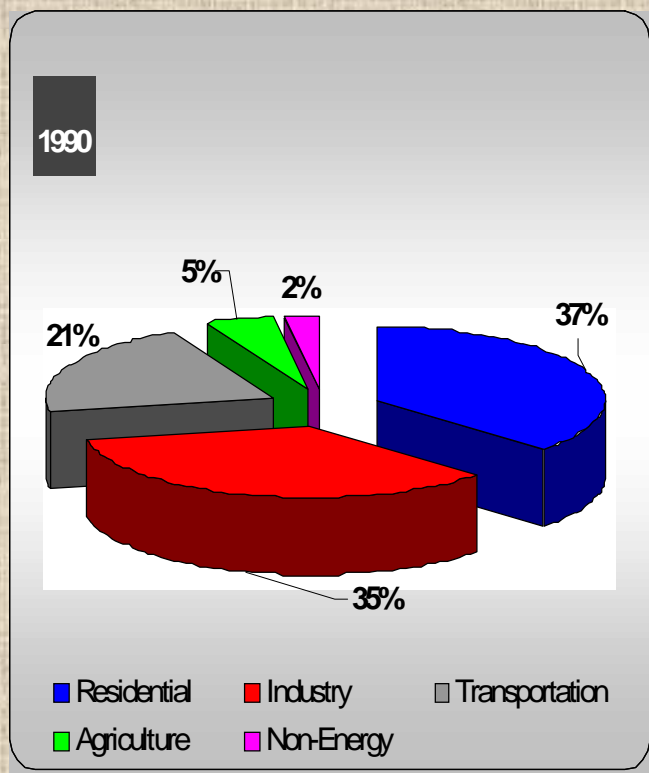
Total Primary Energy Production Supply in Turkey



The Distribution of Final Energy Consumption by Fuels in 1990-2004



The Distribution of Final Energy Consumption by Sectors in 1990-2004



- **Wind** : Technically and economically viable wind potential :
Total installed capacity has reached 50,000 MW, about 1,500 MW is licensed.
- **Forestation**: In 1990-2004, CO₂ removals have varied between 43 Mt to 73 Mt. In spite of covering 27% of the country's area, almost half of total forests are unfortunately unproductive and need to be rehabilitated and protected.
- **Geothermal**: More than 48,000 houses are heated by geothermal energy (1983-2005) with an average water temperature of 57-125 oC.

Turkey's 2006-2010 Environmental & Sustainable Development Programme

- The guiding principles of the EU's Environmental Action Programme, "Towards Sustainability" states that the implementation of any sustainable development strategy necessitates significant change in almost all areas of policy and, in particular, requires that environmental protection be integrated into the definition and implementation of other policies.
- Turkey is playing an important role in international environmental activities and is a party to the Biodiversity Convention, UN Convention to Combat Desertification, the Montreal Protocol and its amendments etc.. and the others.

Turkey's 2006-2010 Environmental & Sustainable Development Programme

- The proposed 6th Environmental Action Programme (2001-2010), "Environment 2010 - Our Future, Our Choice" of the EU, identifies the following priority areas; climate change, nature and biodiversity, environment and health, sustainable use of natural resources and management of wastes.
- Turkey, through the EU-MEDA funding, recently carried out a detailed analysis of Turkish environmental legislation to identify potential gaps with respect to the EU legislation. Now the work is under way for closing these gaps. A new regulation on Environmental Impact Assessment (EIA) has been adopted and environmental inspections are being improved and strengthened. Air and water quality will be improved through more effective regulation and enforcement.

Turkey's 2006-2010 Environmental & Sustainable Development Programme

1-Strengthen the conservation and sustainable use of natural resources by:

- Supporting efforts to establish a National Sustainable Development Strategy, in particular, programmes aimed at strengthening the capacity of the National Council for Sustainable Development (NCSD).
- Supporting preparation of Turkey's First and Following National Communications
- Supporting harmonization process of the EU regulation with the Turkish environmental legal and monitoring system.
- Supporting efforts to protect natural ecosystems and landscapes, in particular, programmes targeted at forests, specially protected areas and other regions with rich bio- and agro -diversity.

Turkey's 2006-2010 Environmental & Sustainable Development Programme

1-Strengthen the conservation and sustainable use of natural resources by:

-Supporting efforts to effectively manage water resources, in particular, programmes aimed at strengthening monitoring and control mechanisms, rehabilitating wastewater treatment plants and preventing trans-boundary pollution in the Black Sea water basin.

-Supporting efforts to prevent land degradation and combat desertification, in particular, programmes aimed at sustainable land management and agricultural practices in remote and vulnerable communities.

Support efforts to integrate sustainable development approaches in the private sector's practices.

Turkey's 2006-2010 Environmental & Sustainable Development Programme

Increase access to sustainable energy services
by:

Supporting efforts to strengthen capacity – building for the removal of barriers to the cost-effective development and implementation of energy efficient standards and labelling.

- Supporting to promote energy efficiency in buildings.

- Supporting efforts to design and implement a sustainable transport system for cities or regions taking into account the national needs in Turkey.

National Working Groups

<p>Working Group I Researching the Effects of Climate Change State Meteorological Services</p>	<p>Working Group II Emission Inventory of GHG State Institute of Statistics</p>
<p>Working Group III General Directorate of Electrical Power Resources Survey and Development Administration</p>	<p>Working Group IV Gen. Directorate of Energy Works</p>
<p>Working Group V General Directorate of Railways, Harbors and Airports Construction</p>	<p>Working Group VI Research and Development Department</p>
<p>Working Group VII Development of Policies and Strategies and Management Department</p>	<p>Working Group VIII Education and Public Awareness (MoEF) MoEF Air Management Department</p>

Rehabilitation Programme

- Rehabilitation of Existing Coal Fired Power Plants
- Natural Gas Market Law.
- Promoting Renewable Energy Sources
- Draft Law on Energy Efficiency
- Control of Air Pollution Arising from Motor Vehicles
- By-Law on the Quality of Petrol and Diesel Fuels

Thank You

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