2 December 1997

ENGLISH ONLY

UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

CONFERENCE OF THE PARTIES
Third session
Kyoto, 1-10 December 1997
Agenda item 3 (e)

REVIEW OF INFORMATION AND POSSIBLE DECISIONS UNDER ARTICLE 4.2(f)

Submission by Turkey

Note by the secretariat

1. The attached position paper has been submitted by Turkey in connection with the consideration by the Conference of the Parties of agenda item 3(e) “Review of information and possible decisions under Article 4.2(f)”.

1. In accordance with the procedure for miscellaneous documents, the submission is attached and has been reproduced in the language in which it was received and without formal editing.

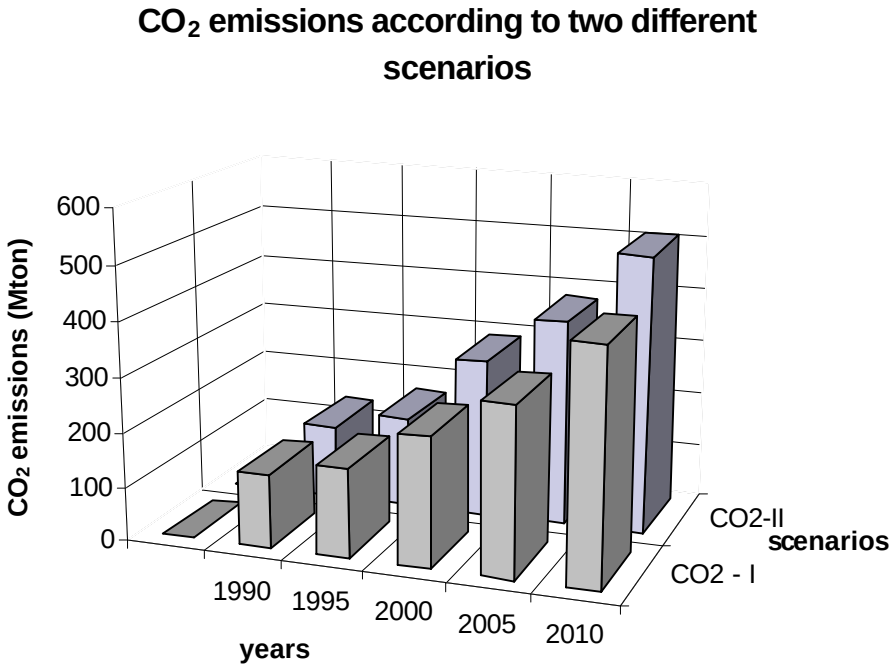
FCCC/CP/1997/MISC.3
GE.97-65069

PAPER NO.1: TURKEY

TURKEY

AND

GREENHOUSE GAS EMISSIONS



KYOTO, DECEMBER 1997

1. SOCIAL AND ECONOMIC FEATURES

1.1. Turkey, with approximately 64 million population in mid-1997, is one of the most populous countries in the world, and has the fastest population growth rate of all OECD countries (1.6% in 1997). Population is rapidly urbanizing at 4.4%. By 2000, 70% of the population will be living in urban areas. Life expectancy is slightly better than the average of lower middle-income countries; under-five mortality rate is similar.

Turkey has been growing at double the average for OECD countries. Industry and tourism are the fastest growing sectors of the economy. 42% of the economically active population are concentrated in the agriculture sector that accounts for only 16% of GNP. Wealth is unevenly distributed, both across socio-economic groups and regions.

Table 1- Population and GDP

Years	Population (1000)	GDP (Billion 1990 US$)	GDP/capita (US$/capita)
1973	38073	71.29	1872
1990	56203	150.68	2680
1995	61644	176.48	2863
2000	66834	231.74	3467
2005	71711	310.12	4325
2010	76278	415.01	5440

Source: OECD, State Institute of Statistics (SIS)

Table 2- Domestic Labor Market Indicators (15 + Age) (In Thousand)

	1990	%	1994	%	1996	%
Civilian Labor Force	19 954		21 403		22 236	
Civilian Employment	18 364	100.0	19 664	100.0	20 894	100.
Agriculture	8 731	47.5	8 806	44.8	9 379	0
Industry	2 773	15.1	3 223	16.4	3 327	44.9
Services	6 860	37.4	7 635	38.8	8 188	15.9
						39.2
Unemployment rate	8.0		8.1		6.1	
Underemployment rate	6.4		8.2		6.3	

Source: SIS, SPO

1.2. For the development of land and water resources, efforts concerning rural services and the formation of agricultural infrastructure, management and effective use of resources maintain their importance. By the end of 1996, electricity and telephone services reached nearly to every village. Nevertheless, only 70% of rural settlements are provided with safe water, 12% of rural settlements have healthy, but insufficient clean water while 18 % have neither healthy nor clean water.

Since a persistent and lasting basis could not have been established for rural development, the difference between the level of welfare of rural and urban areas led the rural population to crowd into the big cities, and this trend consequently, is leading to excessive aggregation, increased unemployment and problems with regard to settlement, housing, environment, infrastructure, transportation, education, health and public security.

Due to high urbanization rate, infrastructure and super-structure investments in the cities persist to be inadequate in meeting the requirements of the increasing population. Housing problem arising in line with the population growth, migration and high urbanization maintains its importance.

1.3. Currently, 80% of the population are literate. A quarter of the population is involved in some process of education and training each year, through which environmental awareness is being promoted.

As consequences of current policies, on the other hand, full implementation of the Customs Union with the European Union is expected to increase pressure for higher standards of environmental quality; accelerated privatization also, offers potential of improvement in environmental management.

As can easily be seen, Turkey is a developing country and still has some burdens to overcome regarding social and economic development.

2. ENERGY SECTOR

2.1 Main objective of the Turkish energy policy is to assure sufficient, reliable and economic energy supply necessary for the economic and social development of the country while paying due consideration to the environmental impacts.

Turkey's gross primary energy consumption was about 72 Mtoe in 1996. Almost 50% of this demand were met by imported resources consisting of mainly oil and natural gas. Turkey's electricity consumption was about 95 billion kWh in 1996. **This corresponds to 1.500 kWh per capita consumption that is one fifth of the OECD and one fourth of the EU averages. It is also considerably below the world average that is above 3000 kWh.**

Starting from 1997 Turkey is facing electricity shortage that is expected to further continue at least until 1999. Turkey has been experiencing a very high rate of electricity demand, 8-9% per year, for the last 15 years. It is expected that this level of growth in electricity consumption will continue in coming years. But even with this high growth rate, **per capita electricity consumption of the country in 2010 will be just half of the current per capita electricity consumption of the OECD averages.**

Table 3- Key Energy Indicators of Turkey

Years	TFC (Mtoe)	TFC/Capita (toe/capita)	TFC/GDP (toe/1000 US$)	Electricity Cons. (TWh)	Elec. Cons./Capita (kWh/capita)	Elec. Cons./GDP (kWh/US$)
1973	20.40	0.54	0.29	12.25	321.75	0.17
1990	41.30	0.73	0.27	57.54	1023.79	0.38
1995	48.65	0.79	0.28	86.25	1399.16	0.49
2000	70.46	1.05	0.30	130.35	1950.35	0.56
2005	91.30	1.27	0.29	186.63	2602.53	0.60
2010	118.35	1.55	0.29	271.45	3558.69	0.65

TFC: Total Final Consumption

Source: SIS

Table 4- Total Final Consumption of Energy per Unit of GDP and per Capita compared to other countries

	TFC/capita (TOE/capita)			
	1980	**1985**	**1990**	**1995**
Turkey	0.61	0.63	0.73	0.79
N. America	4.84	4.44	4.39	4.33
Australia-NZ	3.15	3.11	3.37	3.60
OECD/ Europe	2.38	2.30	2.34	2.35
EU	2.55	2.48	2.60	2.67
OECD	3.13	2.98	3.07	3.14

Source OECD-IAE

Notes: a) GDP at 1991 price levels and purchasing power parities.

b)TOE Values per unit of GDP include Western Germany only until 1990. Korea Czech Republic, Hungary and Poland are not included before 1995.

2.2 Conservation through energy efficiency improvement programs, expansion of natural gas use in power generation and in residential sector (consumption of domestic lignite is planned to be revised downward while that of natural gas is planned to increase from 8 billion m^3 in 1997, and to 50 billion m^3 in 2010), utilizing nuclear power as non CO_2 emitter energy source, employing solar energy in heating, promoting bio-climatic design of buildings, promoting energy efficient technologies, reducing losses in energy conversion, transmission and distribution, installing emission control and reduction systems in all thermal power plants, promoting mass transportation systems, completing standards related to energy production and consumption systems, increasing use of alternative energy sources in transportation sector such as natural gas-operated municipal buses and electricity based railway systems, promoting clean car technologies including green-trucks, supporting co-generation applications, considering environmental factors in the fuel cycles from energy production to consumption are among major concerns of Turkey's energy policy.

2.3 Recently, a large scale private sector involvement in the energy area from power generation to distribution has been encouraged and initiated. Also a price reform which aims at increasing energy efficiency is about to be developed. These are expected to result in higher efficiency, which then will bring lower emissions per energy produced and consumed.

3. ENVIRONMENT POLICIES

Turkey made great progress over the last fifteen years in creating mechanisms to address its environmental problems: the 1982 Constitution recognizes the right of citizens to live in a healthy and balanced environment; an Environment Act was passed in 1983; the Ministry of Environment was established in 1991; public awareness and demand for a clean environment are growing; and active non-governmental environmental organizations are emerging. Despite these positive developments, environmental issues have not been adequately incorporated into economic and social decisions yet.

This inadequacy is recognized and development of a national environmental strategy is called for in Turkey's Seventh Five-Year Development Plan for 1996-2000 which is the main instrument for coordinating government policies, including those for environmental management.

Thus, the National Environmental Action Plan (NEAP) which has been prepared over a two-year period responds to the need for a strategy and can supplement the existing Development Plan with concrete actions for integrating environment and development, "energy and environment" being one of the topics in its context. The options related to energy and environment policies listed in the NEAP are in Table 5.

Table 5- Options for the Production and Consumption of Energy

Policies	1. Measures to encourage wider use of natural gas; 2. Support the utilization of clean and renewable energy sources as well as passive solar energy applications; 3. Decentralization in energy generation; 4. Optimizing sustainability of energy supply and environmental costs; 5. Setting integrated energy consumption targets for Organized Industrial Zones;
Institutional Reform	6. Establishment of an Energy Observatory; 7. Organization of energy crisis management units at national and regional levels;
Legislative Arrangements	8. Enforcement of regulations and other arrangements to regulate the energy efficiency of domestic appliances; 9. Implementation of Heat Insulation Regulation;
Education-Training	10. Organization of energy conservation training at adult education centers; 11. Introducing energy conservation in formal education; 12. Organization of training for households in mass housing & rural areas;
Participation	13. People's participation to design and implement energy conservation programs; 14. Formation of energy management units by entrepreneurs in organized industrial zones and small-scale industrial sites;
Economic & Financial Measures	15. Introduction of emission taxes in the pricing of fuels; 16. Application of immovable property taxes by considering the limits of energy consumption to be determined with respect to areas; 17. Support for the spread of energy-efficient techniques and technologies; 18. Determination of value added tax rates linked to the energy efficiency of vehicles and equipment; 19. Imposing charges on any excess over determined emission standards;
Techniques	20. Encouraging the use of high efficiency - low emission stove and boiler systems; 21. Improvement of power transmission lines; 22. Promoting the diffusion and efficiency of central heating systems; 23. Wider use of process energy (e.g. co-generation); 24. Support for energy efficient technology transfers in industry; 25. Improvement of techniques for energy consumption calculations in buildings; 26. Support the replacement of appliances with low energy efficiency; 27. Establishment of energy management systems in enterprises consuming more than 2000 tons petroleum equivalent energy annually; 28. Use of fluidized bed boiler systems in power plants and industries; 29. Promoting mass transportation; 30. Introducing renewable energy sources for energy supply;

R&D	31. Identification and planning of research priorities in energy field; 32. Development of techniques and technologies that increase energy efficiency; 33. Inventory of carbon emissions.

1. GREENHOUSE GAS EMISSIONS

4.1. Measures with regard to Greenhouse Gas emissions are initiated. The National Climate Co-ordination Group published a report on GHG emissions in line with those conducted by member countries of the FCCC. This report recommends to enhance the use of renewable energy sources, in particular hydro electricity, and the use of advanced combustion technologies for fossil fuels.

A working group on climate change has been established to follow and evaluate scientific developments in the area of climate change, and to prepare a national GHG inventory.
In 1992, the Ministry of Environment issued a regulation providing for emissions testing for cars, trucks and vans. The regulation foresees penalties in case of non compliance with the maximum emissions allowed. Emission testing is mandatory for the sales of used vehicles. The regulation on "Air Quality Control" issued in 1986 sets emission limits with penalties for combustion plants, as well as global emissions limits in industrial and non-industrial regions.

4.2. Although the energy demand of the country increases rapidly**, Turkey's contribution to global greenhouse gas (GHG) emissions is considerably below the average of Annex 1 countries. Turkey has the lowest energy related CO_2 emissions per capita among IEA countries.**
Historical and projected levels of CO_2 and other GHG emissions in Turkey are illustrated in the following tables. **Recent measures to improve energy efficiency which would further mitigate the increase in emissions have not been taken into account.**

Table 6- CO_2, CH_4 and N_2O emissions by years in the case of energy consumption pattern in 1996

Years	CO_2 (Mt)	CO_2 /capita (ton/capita)	CO_2 /GDP (ton/1000 US$)	CH_4 (1000 ton)	CH_4 /capita (ton/capita)	CH_4 /GDP (kg/1000 US$)	N_2O (1000 ton)	N_2O /GDP (kg/1000 US$)
1973	57.00	1.50	0.80	102.82	0.0027	1.4	11.36	0.16
1990	138.50	2.46	0.92	149.66	0.0027	1.0	31.01	0.21
1995	160.50	2.60	0.91	135.68	0.0022	0.8	33.02	0.19
2000	238.00	3.56	1.03	189.43	0.0028	0.8	45.67	0.20
2005	308.20	4.30	0.99	201.63	0.0028	0.7	60.01	0.19
2010	424.50	5.57	1.02	211.63	0.0028	0.5	78.60	0.19

Source: OECD, SIS

Table 7- CO_2 emission/capita compared to other countries (tons)

	1985	**1990**	**1995**
WORLD	4.05	4.08	3.92
Annex 1 Parties	n.a.	(e) 12.02	11.18
OECD	10.88	11.10	11.08
Non-OECD Total	2.35	2.42	2.29
USA	19.43	19.64	19.88
Russian Federation	n.a.	n.a.	10.44
Rep. Of Korea	3.86	5.40	7.87
Mexico	3.59	3.58	3.46
TURKEY	1.97	2.46	2.60

Source: IEA, (e): IEA Secretariat Estimate,

5. ASSESSMENT

As seen from the review of energy and environment policies and practices outlined above, Turkey pays attention to climate change, and the process started by the Convention. Since the awareness about climate change first emerged, Turkey has acted accordingly.

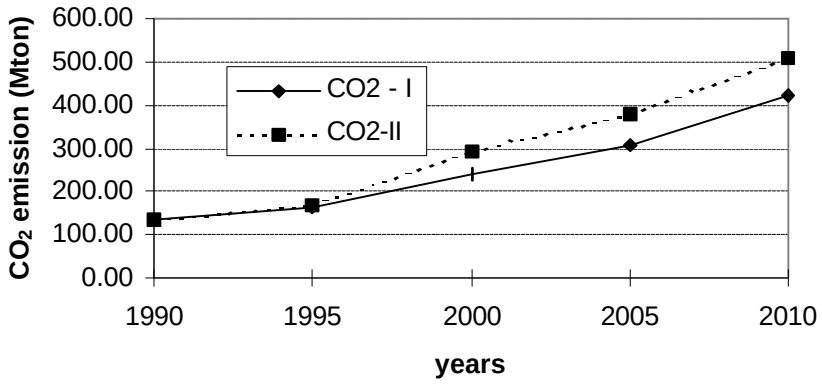
If Turkey's energy consumption and CO_2 emissions are projected basing on the energy consumption patterns in 1992, according to Scenario (2) and compared to the projections based on the consumption patterns in 1996, according to Scenario (1), which is the actual case, it can be realized that **if Turkey had not considered policy change regarding global warming since 1992, the CO_2 emissions would be 20% higher in 2010. (Compare Table 6 and Table 8, and see Figure 1).**

Table 8- CO_2, CH_4 and N_2O emissions by years in the case of energy consumption pattern in 1992

Years	CO_2 (Mt)	CO_2 /capita (ton/capita)	CO_2 /GDP (kg/1000 US$)	CH_4 (1000 ton)	CH_4 /capita (ton/capita)	CH_4 /GDP (kg/1000 US$)	N_2O (1000 ton)	N_2O /capita (ton/capita)	N_2O /GDP (kg/GDP)
1973	57.00	1.50	0.80	102.82	0.0027	1.4	11.36	4206.47	0.16
1990	138.50	2.46	0.92	149.66	0.0027	1.0	31.01	11645.43	0.21
1995	167.75	2.72	0.95	156.18	0.0025	0.9	34.61	13660.51	0.20
2000	291.55	4.36	1.26	208.43	0.0031	0.9	46.58	14936.08	0.20
2005	378.74	5.28	1.22	230.42	0.0032	0.7	57.21	17804.82	0.18
2010	508.84	6.67	1.23	249.59	0.0033	0.6	70.37	21506.00	0.17

Source: OECD, SIS

Figure 1: CO_2 emissions according to two different scenarios



Note:

CO_2-1: projections based on the case of energy pattern in 1996.

CO_2-2 projections based on the case of energy pattern in 1992.

6. POSITION OF TURKEY REGARDING UNFCCC

Turkey, albeit a **developing country**, is placed in the annexes 1 and 2. Turkey's opposition to its placement in the Annexes are noted INC/FCCC Secretariat document No. A/AC. 237/18, Part II, para 35 dated 16 October 1992. Further requests for deletion from the Annexes have been included, then on, in many Secretariat documents.

Turkey has a long standing demand of deletion of its name from the Annexes, to be able to become a party to the UNFCCC.

Turkey is not seeking any exemption from the exercise, on the contrary is **willing to be in the system**, and is **ready to accede to the convention**, following the necessary amendments in the Annexes.

Turkey's position vis-à-vis the UNFCCC process is that commitments should be based on equity and fairness by dully taking into account the **"differentiated responsibilities"** and "**individual circumstances"** of the Parties concerned.

The UNFCCC commits **the industrialized country Parties (not the developing nations)** to take lead in stabilizing greenhouse gas emissions. The stipulation is incorporated into the Convention because of the right to sustain socio-economic development and the acknowledgment of the specific needs and special circumstances of developing countries. Furthermore, **Turkey is acknowledged as a developing country in the Montreal (Ozone) Protocol**, relying on the fact that **the World Bank, OECD and UNDP have classified Turkey as a developing country.**

Turkey participates in the COP and Berlin Mandate processes, and **hopes** the negotiations will bring **an outcome that is fair and achievable for a better global result** in relation to greenhouse gas emissions.

Turkey is calling for equality of sacrifice rather than equal reduction in emissions.

It will only be just if, it in fact reflects the different structures and capabilities of economies.

Furthermore, it is noteworthy **that Turkey being aware of the fact that increase in the level of the global emissions of the greenhouse gases constitutes a threat to the future of the humankind, and that this situation affects especially the developing countries, has already being taking measures foreseen in the Convention to the extend possible as summarized above, and accomplishments in this regard have been substantial.**

Turkey is prepared to do its fair share in contributing to the objectives of the Convention. Yet that contribution is expected to be proportionate with the sustainable development objectives of the country.

- - - - -