

Trends of Emissions of Greenhouse Gases in Israel as Compared to Developed Countries

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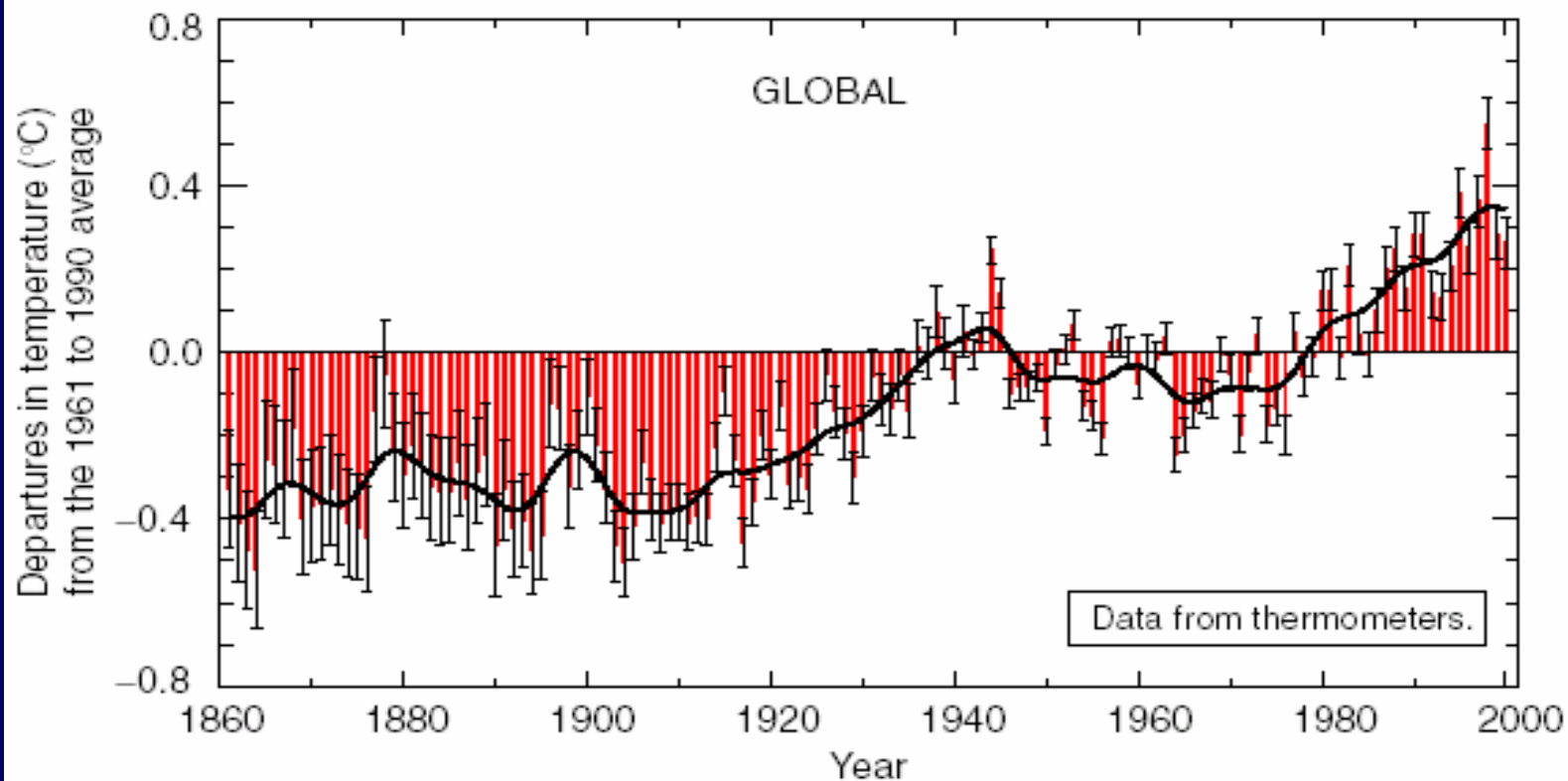
M. Yanai and R. Abudi
Central Bureau of Statistics

“The balance of evidence suggests a discernible human influence on global climate”

Intergovernmental Panel on Climate Change
Second Assessment Report, 1995

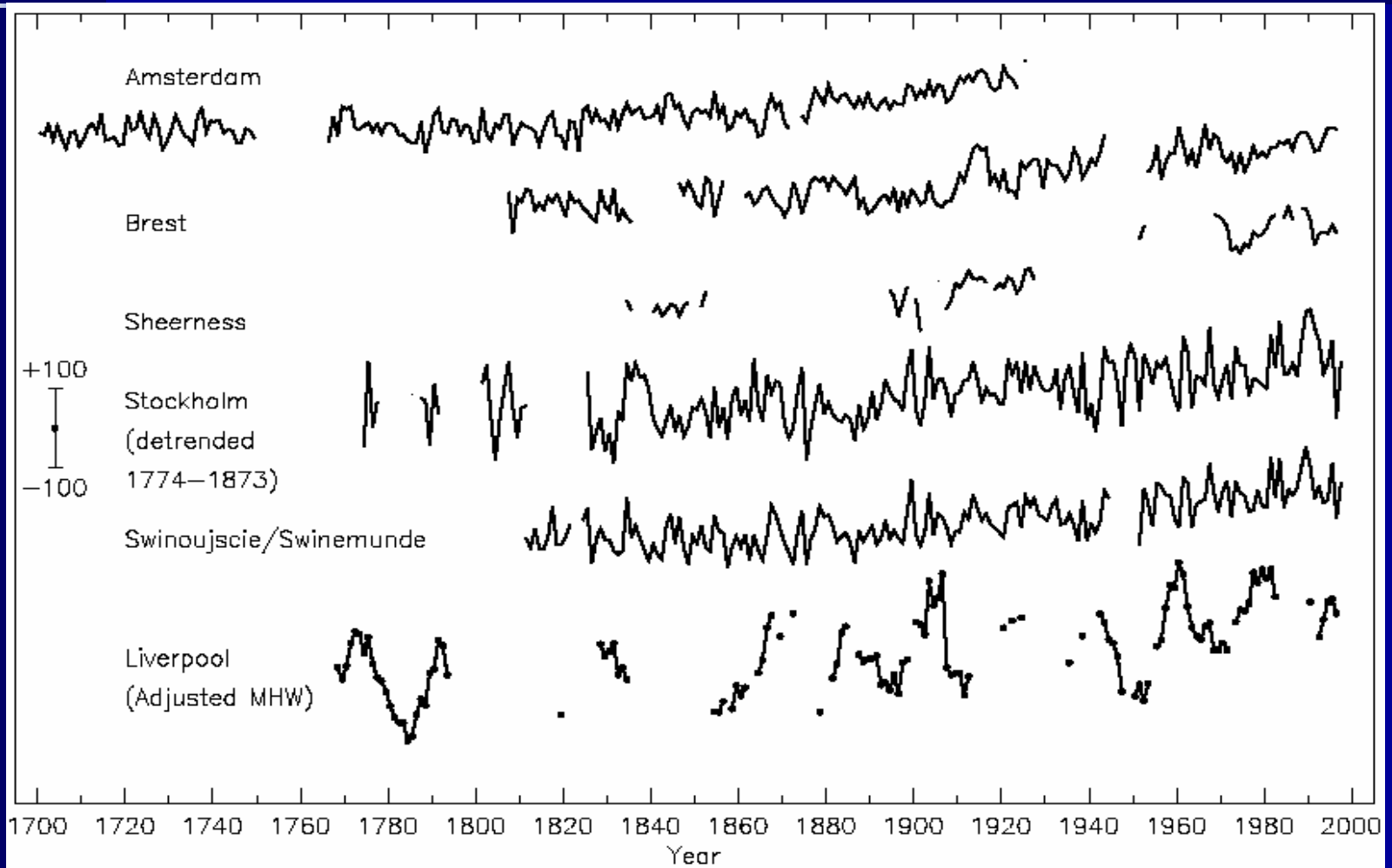
Variations of the Earth's surface temperature for:

(a) the past 140 years

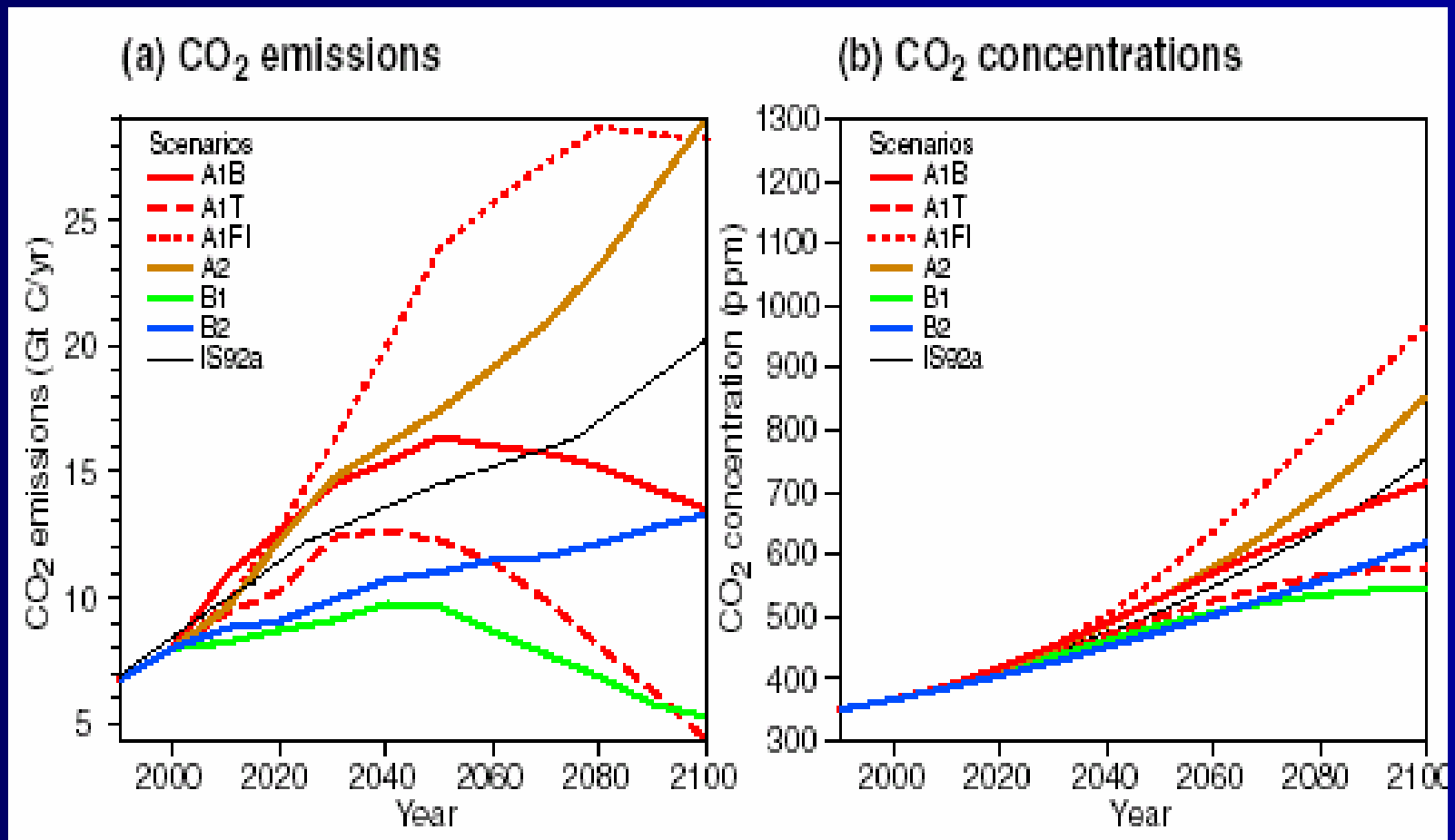


IPCC, Third Assessment Report, 2001

Variations of sea level for the past 300 years

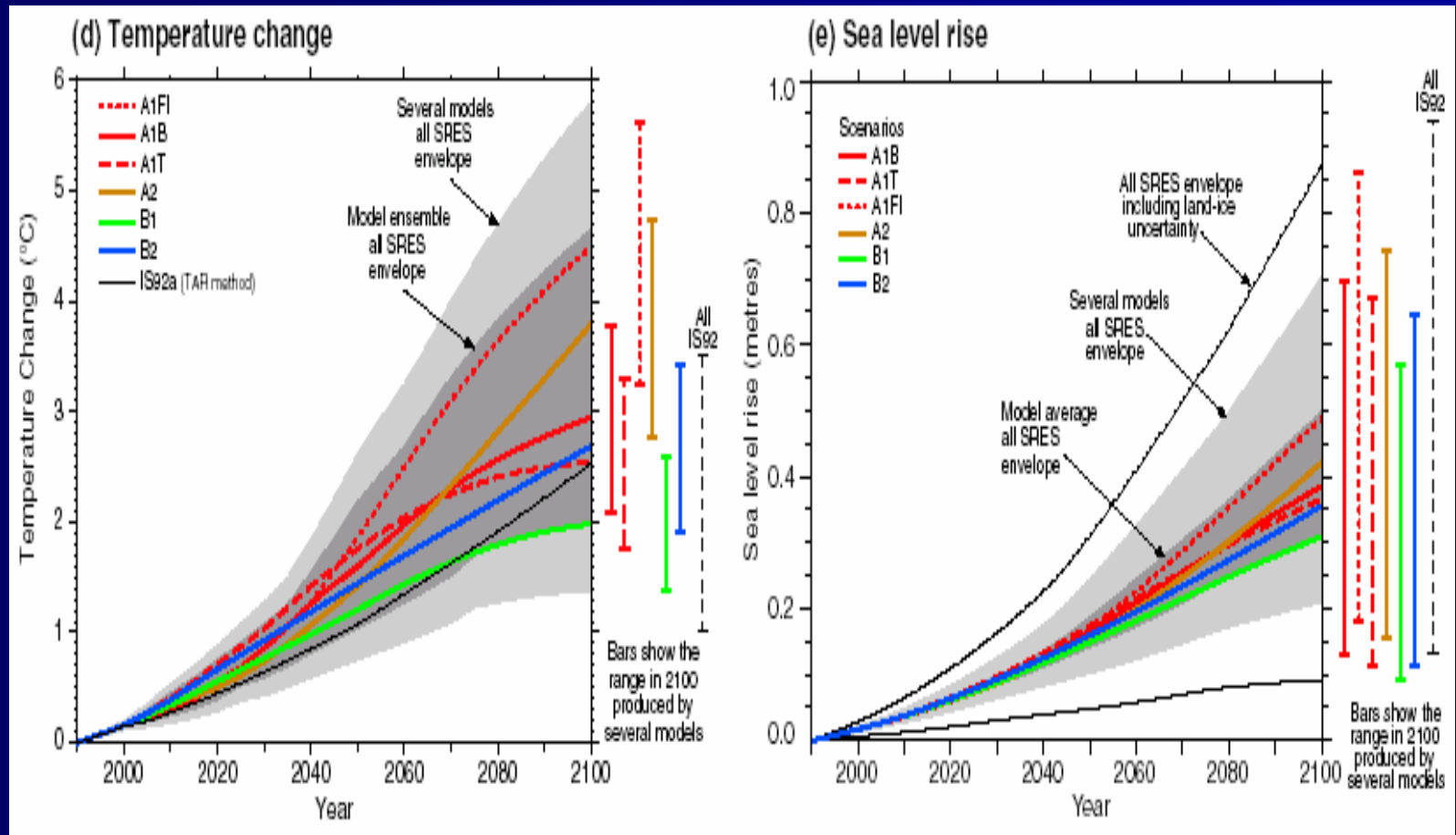


The global climate of the 21st century



IPCC, Third Assessment Report, 2001

The global climate of the 21st century



IPCC, Third Assessment Report, 2001

The U.N. Framework Convention for Climate Change

- The U.N. Conference on Environment and Development, Rio de Janeiro, 1992
- Kyoto Protocol, 1997

Commitments

- Annex-I Countries: Average 5% reduction of 1990 levels by 2008-2012
- Non-Annex-I Countries: To develop emission inventories and to formulate measures to reduce emissions

The U.N. Framework Convention for Climate Change (cont.)

Israel (Non-Annex-I Country)

■ Ratification

- UNFCCC: June 1996
- Kyoto Protocol: March 2004

■ 1st National Communication, November 2000

- National inventory of emissions and removals
- Policy guidelines to reduce GHG emissions

IPCC Guidelines for National Inventories GHGs and their Global Warming Potential

Direct GHGs

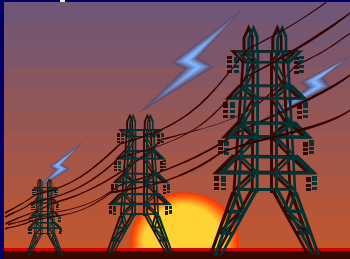
		GWP
➤	CO ₂	1
➤	CH ₄	23
➤	N ₂ O	296
➤	HFCs	CHF ₃ 12,000
➤	PFCs	CF ₄ 5,700
➤	SF ₆	22,200

Indirect GHGs

➤	CO	}	→	O ₃
➤	NO _x			
➤	NMVOOC			
➤	SO ₂		→	aerosols

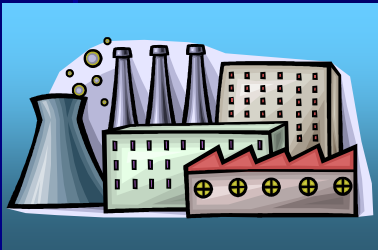
Source/Sink Categories

National Priorities



Energy

CO₂ from Fuel Combustion



Industrial Processes

- CO₂ from Cement Production
- N₂O from Nitric Acid Production



Agriculture

- CH₄ from Domestic Livestock
- N₂O from Soil Emissions

Source/Sink Categories

National Priorities (cont.)



Land Use Change and Forestry

CO₂ Removals from Forest Growth



Waste

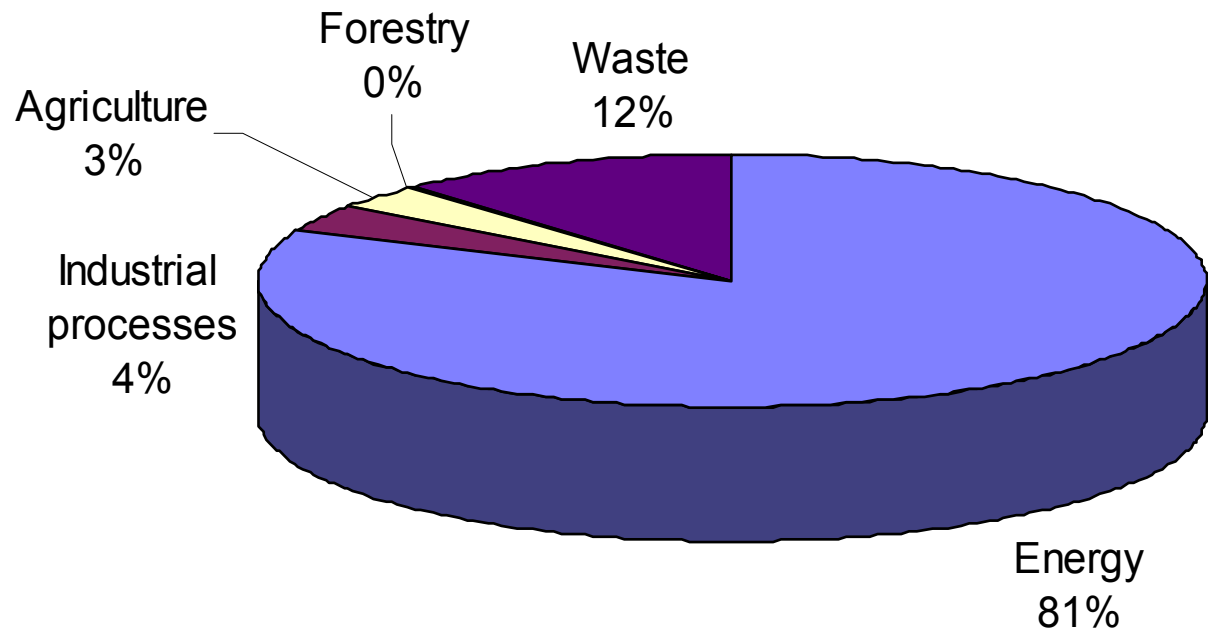
CH₄ Emissions

- Municipal Solid Waste
- Wastewater Treatment

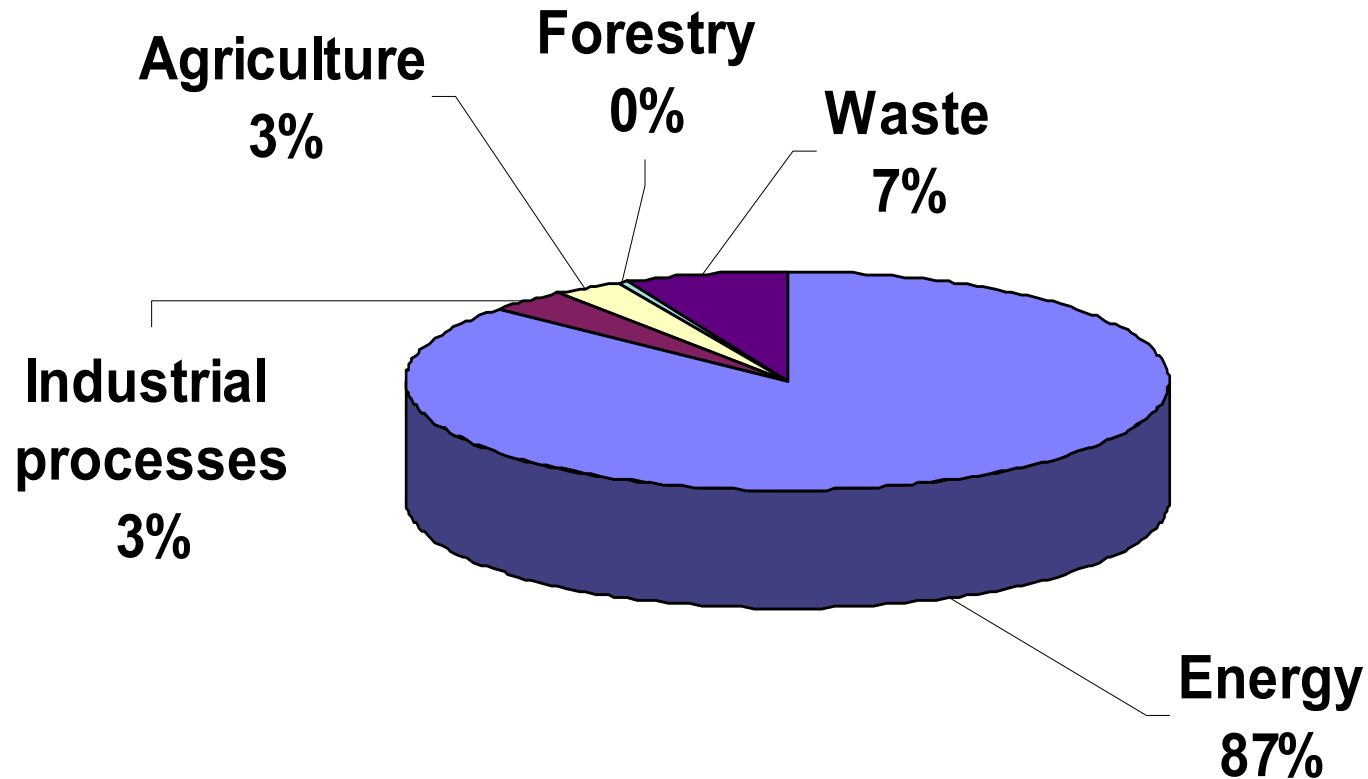
Inventory of GHG emissions and removals Israel – 2003 (kt)

Sector	CO₂	CH₄	N₂O	CO₂ eq.
Energy	62,015	3.4	0.73	62,309
Industrial processes	2,036	0.2	1.63	2,523
Agriculture		39.7	3.91	2,070
Land use change and Forestry	-213			-213
Waste		212.5	0.68	5,089
Total	63,838	255.8	6.95	71,778

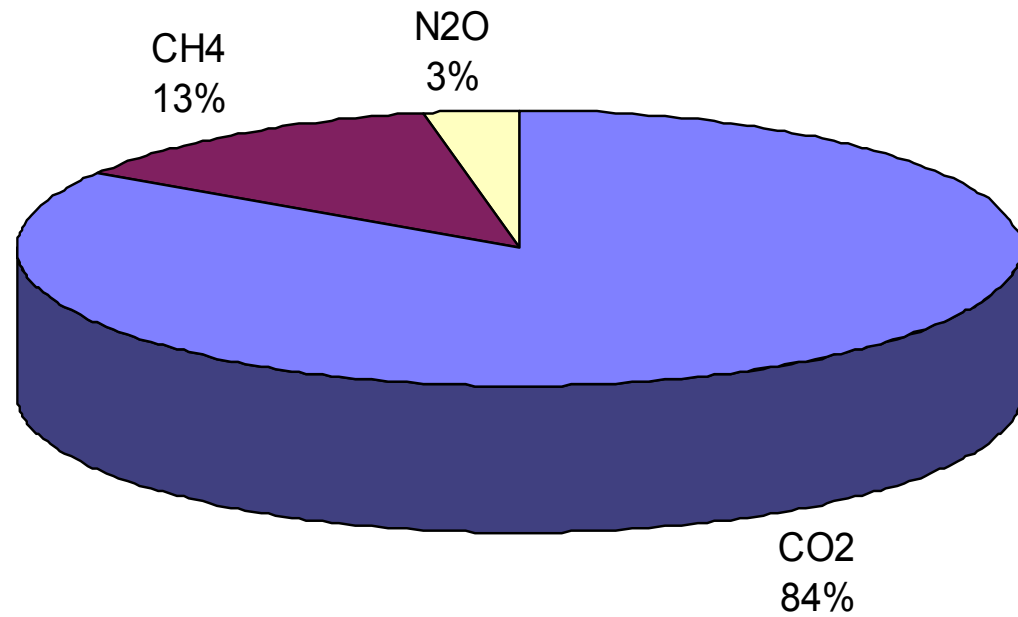
The contribution of the different sectors



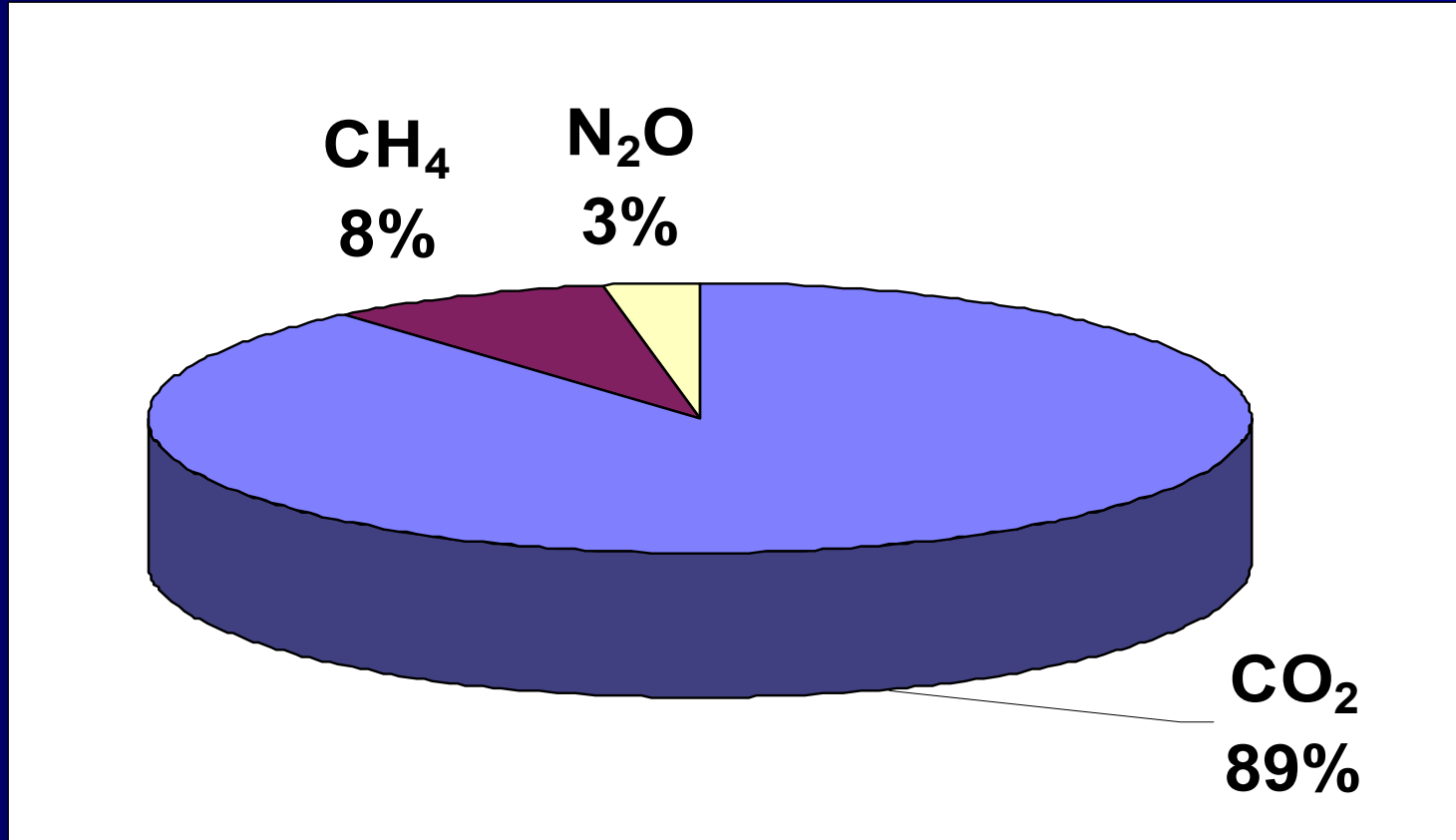
The contribution of the different sectors to CO₂ equivalent emissions



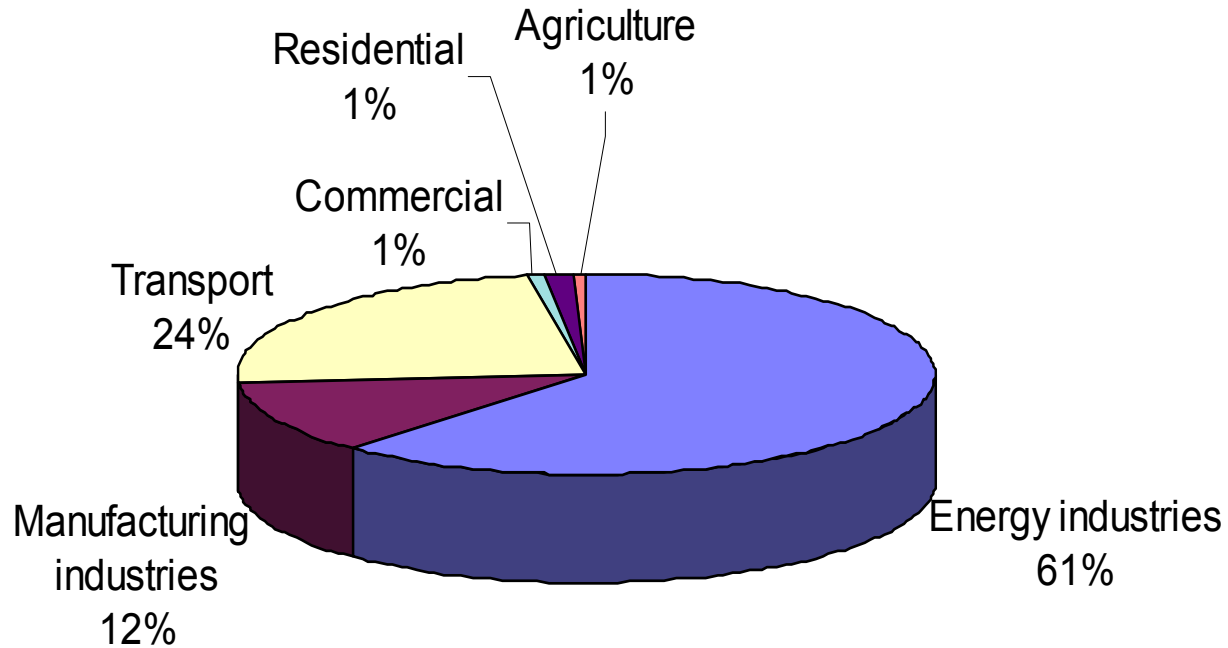
The contribution of the different gases



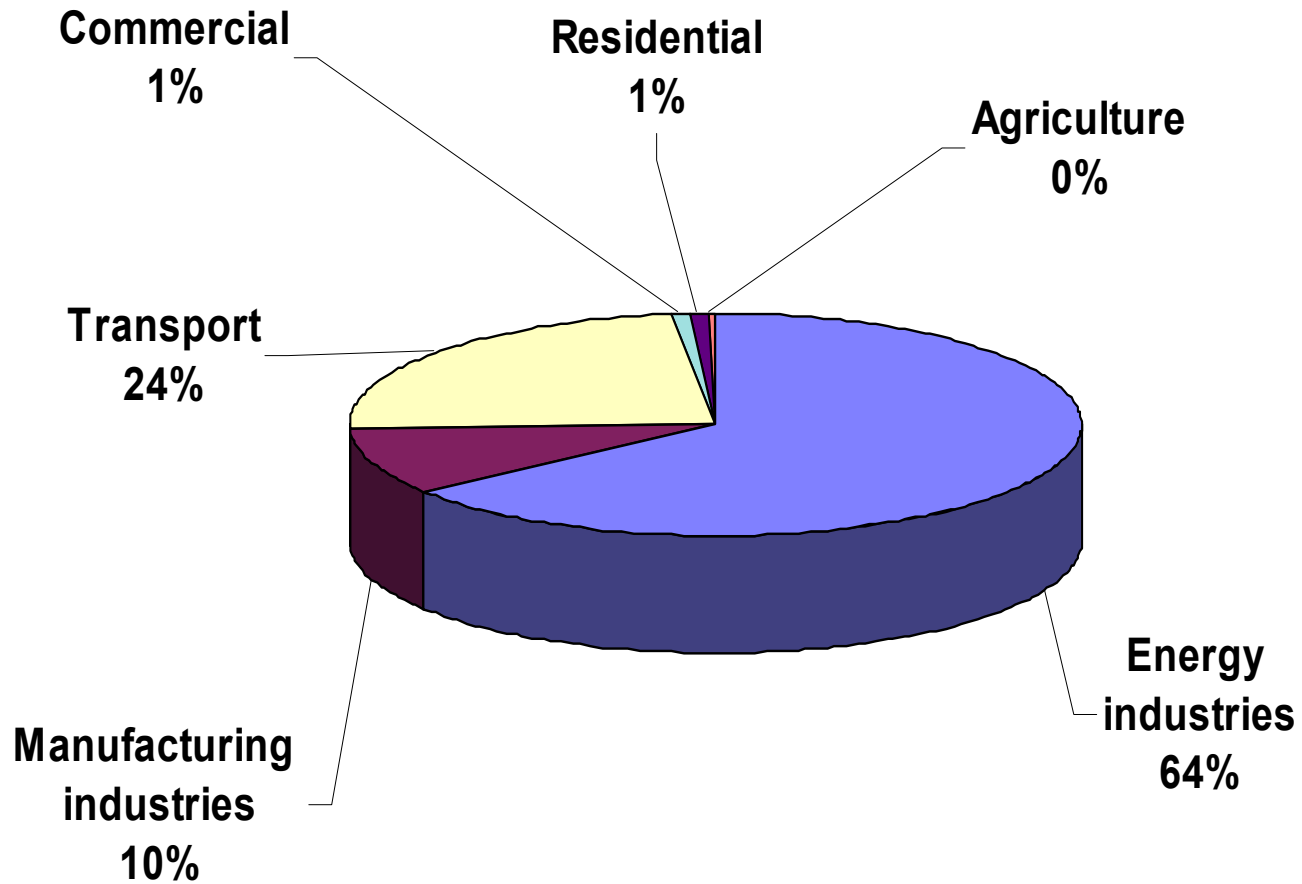
The contribution of the different gases to CO₂ equivalent emissions



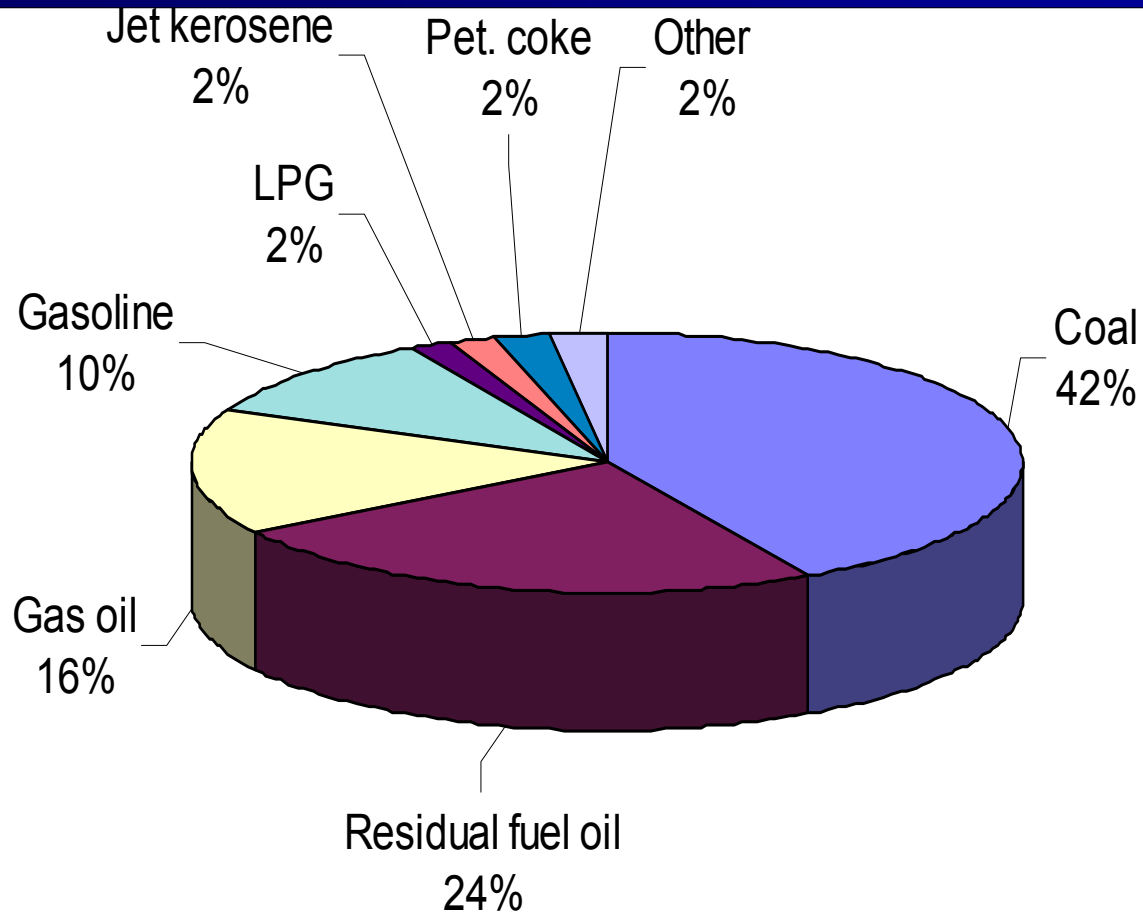
Energy by sectors



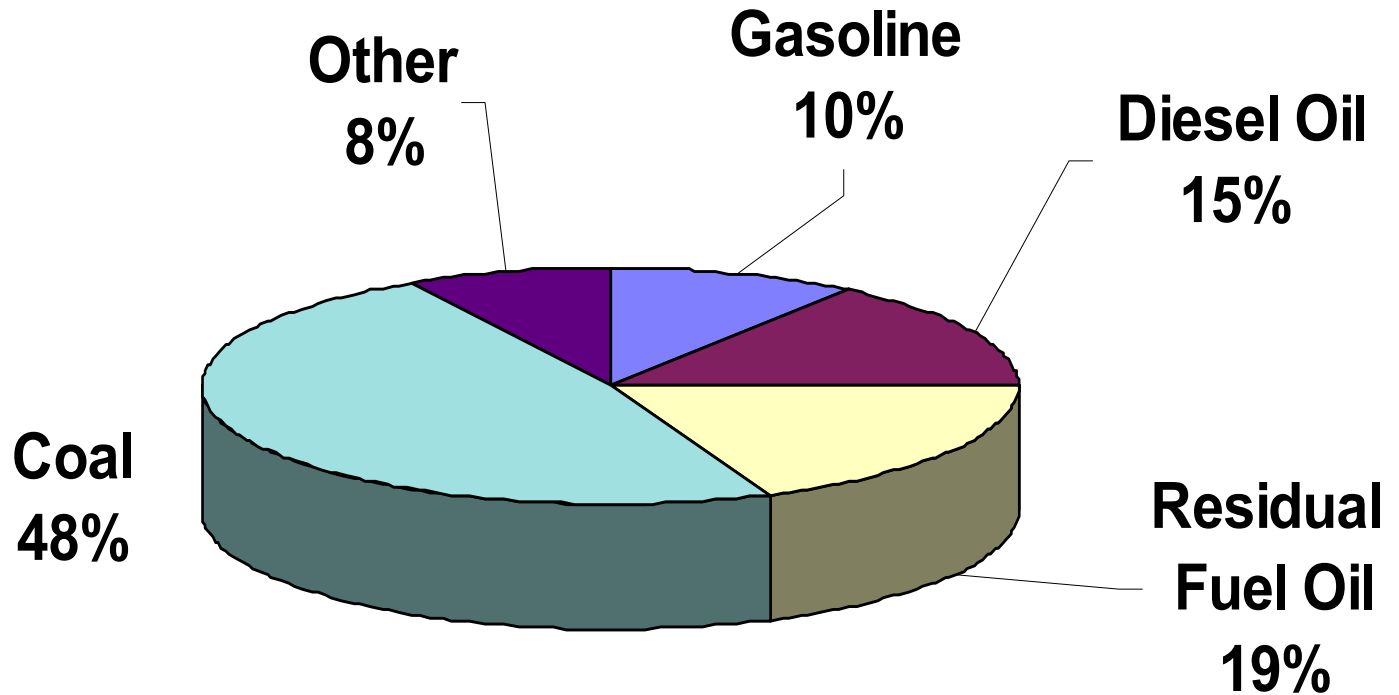
CO₂ emissions from energy by sectors



Energy by fuels

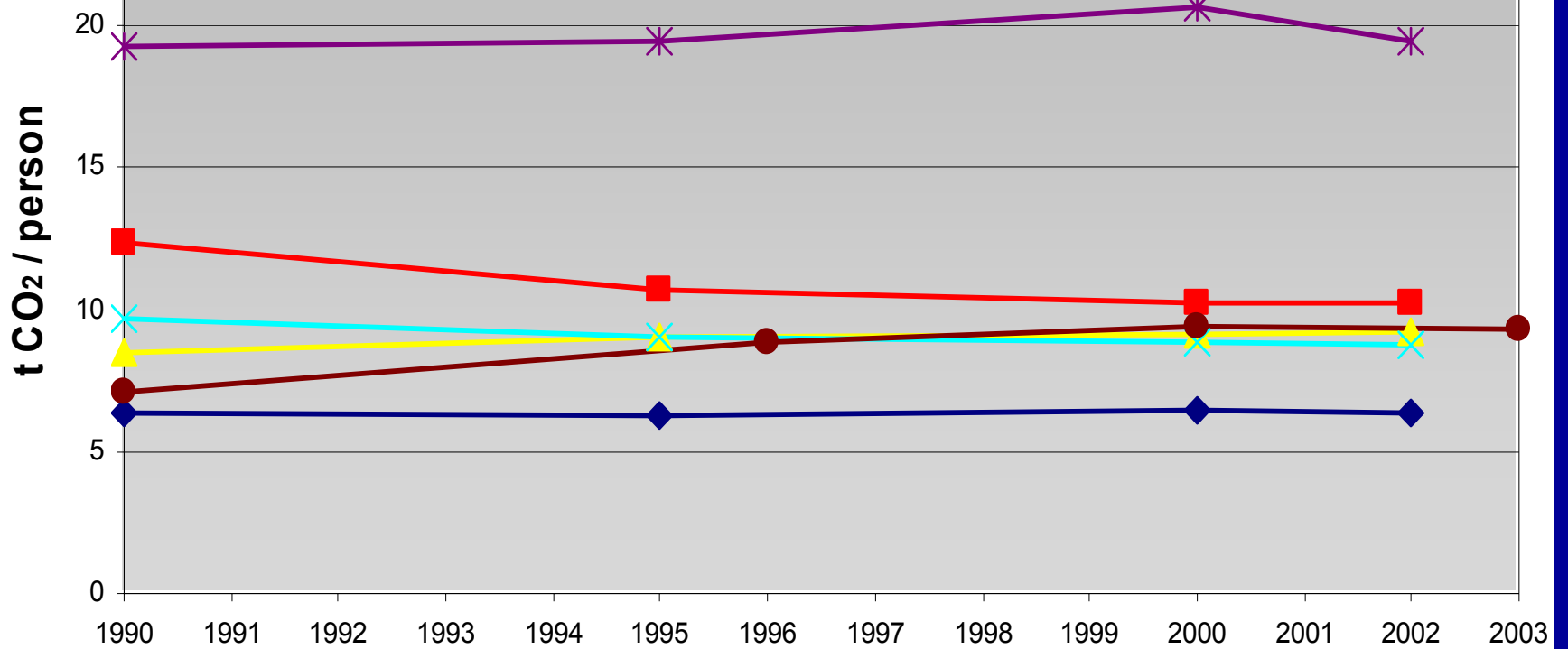


CO₂ emissions from energy by fuels

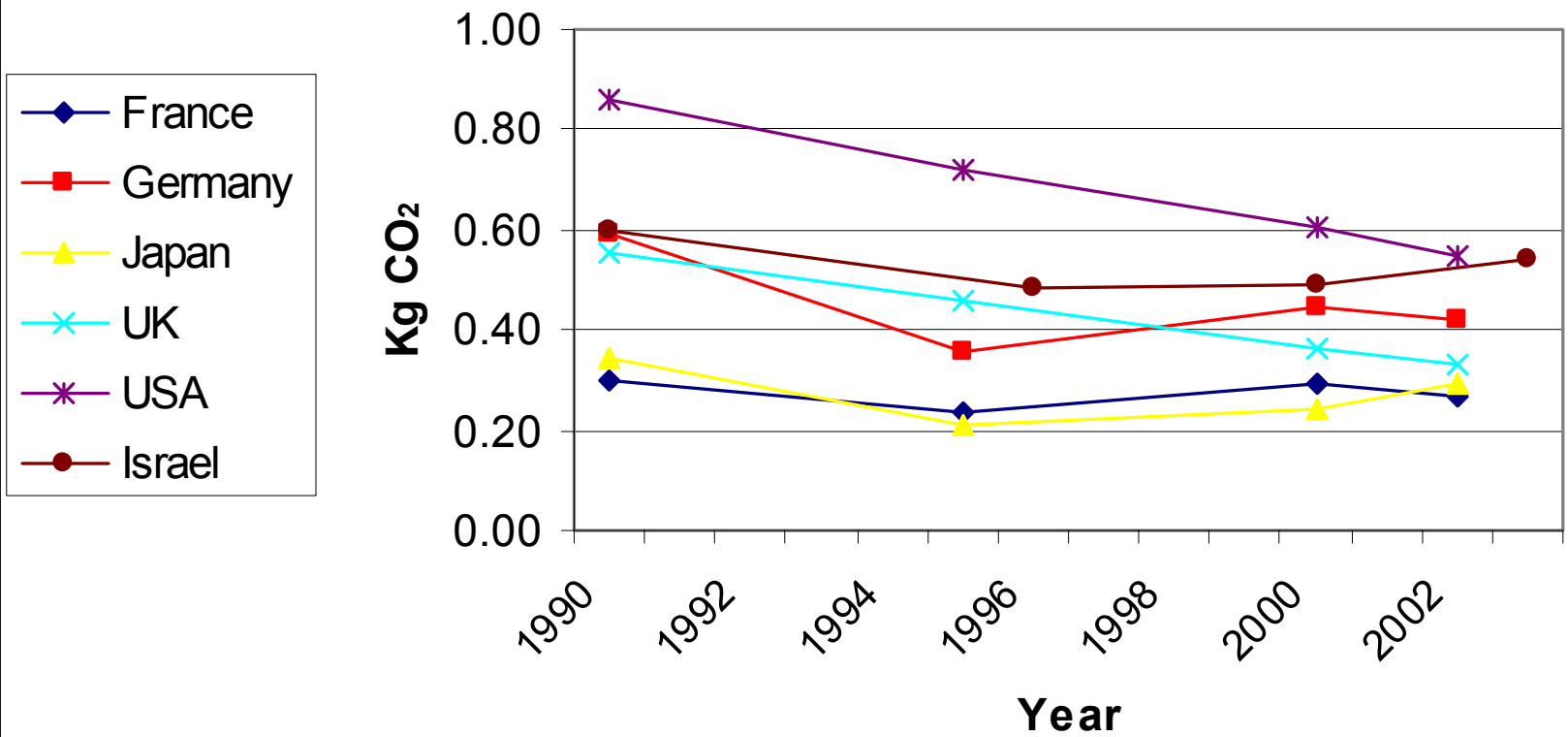


CO₂ emissions from fuel combustion

- ◆ France
- Germany
- ▲ Japan
- ✕ UK
- ✱ USA
- Israel



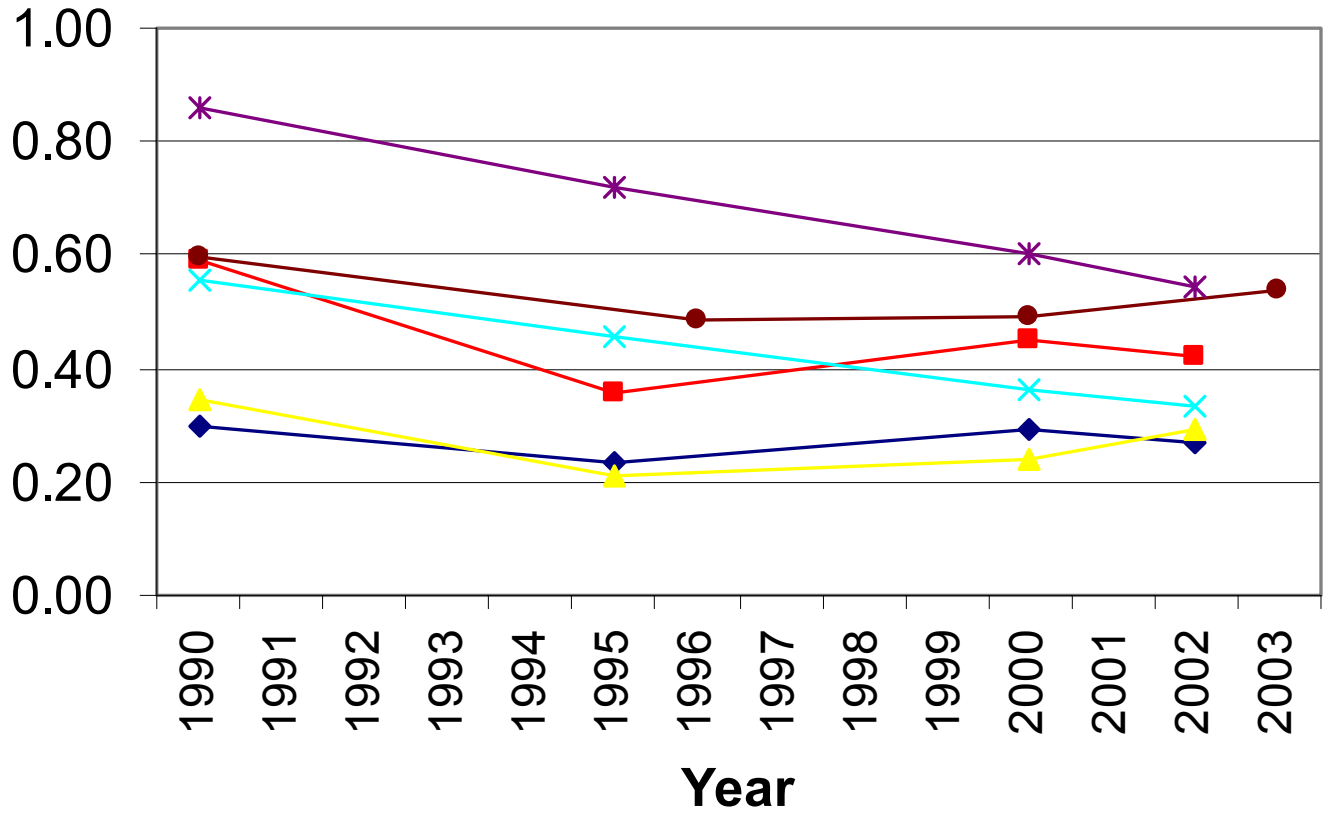
CO₂ Per \$ GDP



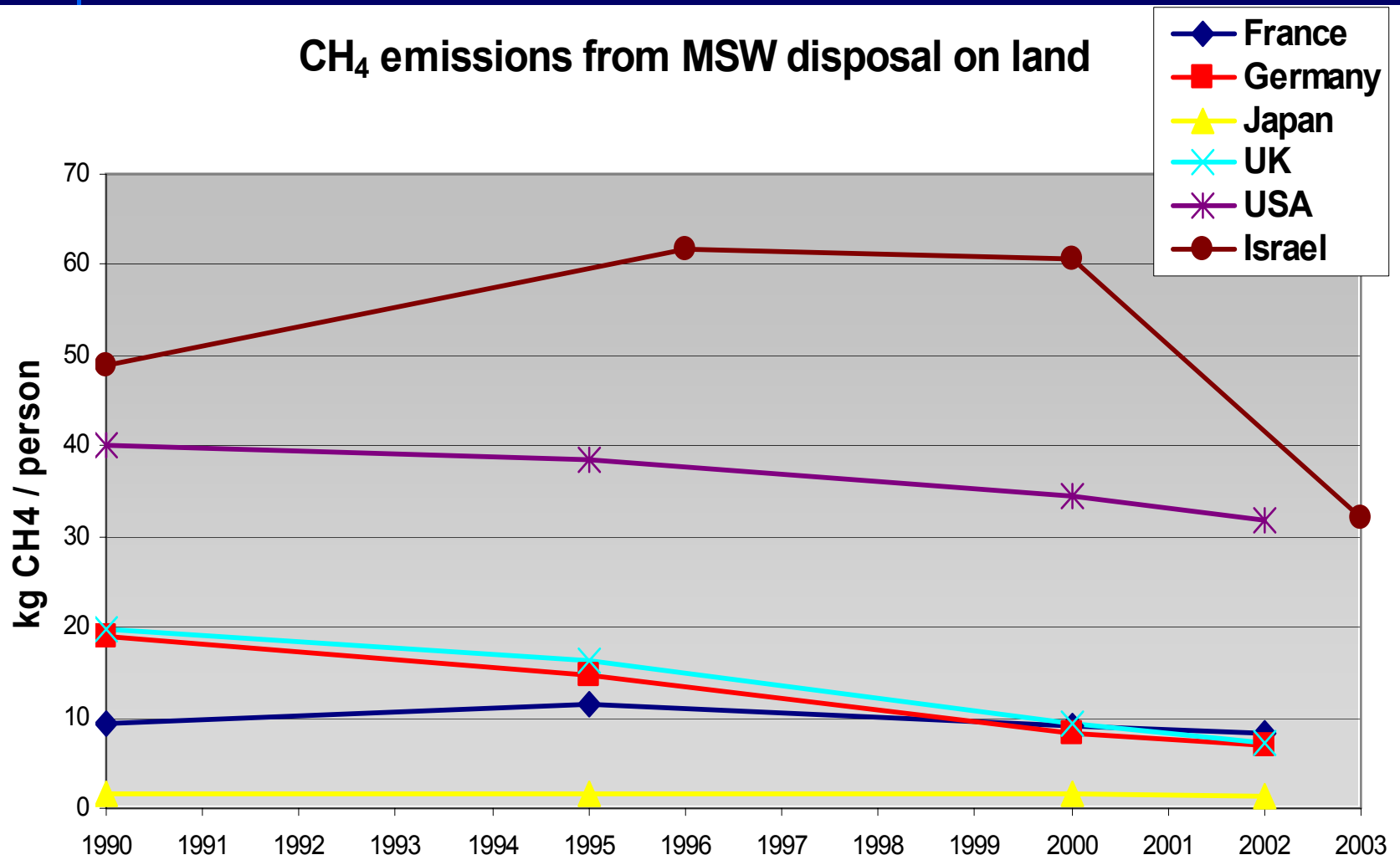
CO₂ emissions from fuel combustion

- ◆ France
- Germany
- ▲ Japan
- ✕ UK
- ✱ USA
- Israel

kg CO₂/ \$ GDP



CH₄ emissions from MSW disposal on land



A Proposal for “Recently-Developed” Countries to Participate in the Global Effort

Koch, Dayan and Amir, *Climatic Change* 57: 227-241, 2003

“Recently-developed” countries: Israel, South Korea, Singapore

- GDP per capita
- GDP annual growth rate

Voluntary commitments

- Environmentally responsible attitude
- Participation in the Clean Development Mechanism as an Annex-I country

A Proposal for “Recently-Developed” Countries to Participate in the Global Effort (cont.)

Encouragement for the “More Developed”
Countries to increase their participation

- Assuming more stringent reductions at home
- Transferring technological and financial means to the “Less Developed” Countries