

Table 4-1: ENERGY-RELATED STATISTICS FOR IEA MEMBER COUNTRIES, 1979

Country	IEA Government Energy RD&D Budgets (US\$ millions) (est.) <sup>(a)</sup>	Total Primary Energy Demand (TPE) (mtoe) <sup>(f)</sup> (1978 figures)	Gross Domestic Product (GDP) (US\$ billions) (est.)	Population (millions) (est.) <sup>(b)</sup>	IEA Government Energy RD&D per capita (US\$ (est.) <sup>(a)</sup>	GDP per Capita (US\$ thousands) (est.)	TPE per capita (toe) (est.)
Australia .....	n.a.	69.0	120.5	14.434	n.a.	8.3	4.78
Austria .....	31.9	24.9	68.9	7.506	4.25	9.2	3.32
Belgium <sup>(c)</sup> .....	97.7	46.1	111.5	9.860	9.90	11.3	4.68
Canada <sup>(e)</sup> .....	139.2	203.4	222.8	23.691	5.88	9.4	8.58
Denmark <sup>(c)</sup> .....	31.0	19.3	65.6	5.120	6.05	12.8	3.76
Germany <sup>(c)</sup> .....	1 048.0	270.2	755.8	61.337	17.09	12.3	4.41
Greece .....	4.1	14.6	37.5	9.444	0.43	4.0	1.56
Ireland <sup>(c)</sup> .....	4.7	8.2	14.9	3.256	1.44	4.6	2.52
Italy <sup>(c)</sup> .....	213.2	139.5	318.6	56.888	3.75	5.6	2.45
Japan .....	919.3	357.0	1 021.6	115.880	7.93	8.8	3.08
Netherlands <sup>(c)</sup> .....	111.7	64.2	151.8	14.030	7.89	10.8	4.58
New Zealand .....	8.5	10.5	21.1	3.160	2.69	6.7	3.32
Norway .....	39.5	21.3	45.3	4.074	9.70	11.1	5.23
Spain .....	79.3	70.2	197.4	37.554	2.11	5.3	1.87
Sweden .....	108.5	51.0	103.3	8.296	13.08	12.5	6.14
Switzerland .....	52.6	23.8	94.1	6.318	8.33	14.9	3.77
U.K. <sup>(c,d)</sup> .....	389.2	212.2	391.2	55.783	6.98	7.0	3.80
U.S. ....	3 783.4	1 842.1	2 349.0	220.415	17.16	10.7	8.36

(a) Exchange rates used are annual averages from the *IMF International Financial Statistics*.

(b) From OECD Main Economic Indicators, March 1980.

(c) The expenditures of the EC Member countries do not include their contributions to the EC programme.

(d) With respect to nationalized industries, the United Kingdom figures include only the expenditures on energy RD&D financed by government funds. Other expenditures by nationalized industries on energy RD&D were £125.8 million in 1979.

(e) Excludes Provincial Government RD&D budgets.

(f) mtoe = million tonnes of oil equivalent.

Source: International Energy Agency, 1980b, p. 18.

however, that consumption of more and more energy automatically improves the quality of life. It must be remembered that in exploiting energy resources in an irrational fashion we can deleteriously affect other parameters, such as the environment, and actually worsen the quality of life. Thus governments, in formulating energy policy, must seriously consider the social effects energy policies will produce.

A good energy policy should strive to ensure that plentiful, affordable energy is available so that the necessities of life can be guaranteed for all. It should at least endeavour to ensure maintenance of present standards of living and it should offer the hope of an even more prosperous future. It must not create unemployment; on the contrary, it should generate jobs and bring people to a greater awareness of how energy affects and, in many ways, controls their lives.

In recent years a new concept has been introduced into the energy debate. This philosophy attempts to deal with energy by concentrating on demand and in so doing divides energy options into two basically different approaches, called "soft" and "hard" energy paths. Soft energy paths are seen as those which restrain demand and enable a society to be based totally or primarily on renewable forms of energy and decentralized sources of supply. A major commitment to conservation is thus an integral part of the soft energy option since demand must not rise beyond a level which renewable energy sources can handle. All other approaches to energy policy which deal primarily with energy supply, and which presuppose large centralized facilities, are called hard energy paths.

The Committee feels that such an arbitrary division of energy policy options is unnecessary. In fact, it can