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REPORT FROM THE COMMISSION TO THE COUNCIL

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ENERGY COOPERATION WITH DEVELOPING COUNTRIES  
AND THE ROLE OF THE COMMUNITY

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COM(81) 96 final

SUMMARY

Energy cooperation with developing countries and  
the role of the Community

This communication is a response to the Council's invitation of 30 October 1978 concerning:

- the presentation of a world wide survey of ongoing activities in energy cooperation
- the presentation of different Community aid measures in energy
- the examination of the question of whether or not other Community actions might be useful

A first response was transmitted by the Commission in March 1979<sup>1/</sup>. The present communication provides a more complete survey of the action undertaken all over the world.<sup>2/</sup>

The Commission intends to put forward to the Council a further communication, in which the concept of its cooperation policy, in particular with respect to the Lomé II convention, will be presented.

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<sup>1/</sup> "First actions of cooperation with certain developing countries in the field of energy" COM(79)155 final of 21 March 1979 and "List of activities undertaken at international level and by the Member States" SEC(79)522 of 23 March 1979.

<sup>2/</sup> Statistics on this convention and a first set of short notes concerning the energy situation of 6 developing countries (Nigeria, Rwanda, Tunisia, Turkey, Pakistan, Ecuador, Mexico) will be submitted separately as a Commission staff paper.

ENERGY COOPERATION WITH DEVELOPING COUNTRIES AND  
THE ROLE OF THE COMMUNITY

1. International cooperation in the energy field

Given the importance of the problem and the everywhere extremely limited resources available for its solution there is a need for internationally coordinated action. However there are so many public and private organisations and bodies involved that comprehensive coordination is extremely time-consuming and difficult and may even do more harm than good as far as efficient action is concerned.

Basically then, the Commission has restricted itself to establishing technical contacts in matters of energy cooperation with a number of major international organisations (United Nations, World Bank, OECD/IEA, OPEC (Secretariat)).

With the EC and its Member States, these organisations and countries provide official development aid in the energy field amounting to some 2,300 million EUA in 1979, which represents some 85% of the official aid (grants and loans) spent on energy cooperation.

Information about the remaining aid especially about the Arab funds' activities will be transmitted later.

	<u>million EUA</u>	
	<u>1979</u>	<u>1980</u>
World Bank	1,565	1,639
EC (bilateral and Community)	503	703
USA	180	47
OPEC Special Fund	45	55
Japan	14	15
UNDP	3	14
	<hr/>	<hr/>
	2,310	2,473
Other States (S. Arabia, Kuwait, Gulf Emirates, Canada, Australia, Scandinavian countries)	± 400	± 500

The major part of the total amount of 2,300 million EUA allocated in 1979 to energy cooperation concerns loans (1,800 million EUA or 78%) whilst grants amount only to 500 million EUA or 22%. The forecasts for 1980 underline this situation (84% versus 16%). With regard to loans, the World Bank takes a leading position with 1,565 million EUA. As far as forecasts are concerned, the EC and its Member States are the major donors with 300 million EUA or 60% of total amount.

An analysis by energy sectors shows clearly a preference for the electricity sector: 1,833 million EUA or almost 80%:

	<u>million EUA</u>	
	<u>1979</u>	<u>1980</u>
Electricity	1,833	1,576
Oil/gas	221	404
Coal	188	382
Renewable sources	46	71
Training, studies, conferences, etc.	22	40

Hydrocarbons and coal account only for some 10% and 8% respectively of 1979 aid. The share of the renewable sources, 2%, is very low. For 1980 a better equilibrium may be obtained: the share of electricity drops to 64% in favour of the 3 other sectors, climbing to 16% for oil/gas, 15% for coal and 3% for renewables.

The amount of the technical assistance actions in training, R&D, energy-programming, studies and sending out experts, represents in total only 1% of the 1979 aid: 20 million EUA. Forecasts for 1980, however, are showing a 100% increase<sup>1/</sup>.

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<sup>1/</sup> For further figures the Commission's staff paper, Chapter I, tables 1 and 2.

2. Activities of the United Nations

Activities in the field of energy cooperation are financed by the United Nations mainly through the Development Program (UNDP: Grants for technical assistance) and the World Bank (loans for capital projects).<sup>1/</sup>

(a) UN Development Program (UNDP)

Up to now the UNDP has had only modest funds available for this field (approximately \$5 million in 1979 for 35 projects). For 1980, however, these resources are to be stepped up to \$20 million (for approximately 56 projects). The planned use of these resources is as follows:

	<u>1979</u>		<u>1980</u>	
	'000 \$	%	'000	%
Energy programming	1,160	24	2,050	10
Energy saving	250	5	210	1
Electricity	1,350	29	2,590	13
Fossil fuels (oil and coal)	910	19	7,910	40
Renewable sources (solar, geothermal, etc)	1,110	23	7,030	36
	<u>4,780</u>	<u>100</u>	<u>19,790</u>	<u>100</u>

The dominant feature of UNDP technical assistance in 1979 is the promotion of conventional energy production projects (electricity, coal and oil, which account for almost half the resources. Most of the operations involve the provision of experts for the exploration of energy resources, management training, and the setting up of training centres.

In 1980 the UN intends to concentrate far more on promoting the production of renewable energy supplies (geothermal, solar and wind) with the result that its 1979 share of 23% will increase to 36%. As a result of the promotion of a number of fairly large oil and coal projects (in India, Turkey, Malta and elsewhere) the proportion of aid going to fossil fuels is also increasing considerably; over three-quarters of the technical assistance will now be spent

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<sup>1/</sup> See also the specific comments made by the Commission in its list of the activities undertaken at international level and by the Member States (SEC(79)522 of 23 March 1979). Other detailed figures are given in the Commission's staff paper, Chap. I, tables 3 and 4.

on energy production (including hydroelectric power) compared with a little over half in 1979. Two fairly large technical assistance projects scheduled for 1980 - involving mineral oil exploration in Albania (\$ 1.5 million) and Malta (\$ 1.8 million) - are of particular significance.

An interesting feature of the UNDP aid is the financing of energy programming projects (Energy Resources Surveys and Planning). The UN has financed seven operations in this field in 1979 (in Bolivia, Central America, Jamaica, Kenya, Peru, Thailand and Uganda). Depending on the wishes of the developing countries in question, these operations involve resource evaluation, energy balances, or energy programming, which combines the other two. In 1979 approximately \$ 1 million was spent on these operations, which essentially involve the sending of a number of experts for a period of several months. For 1980 an increase to \$2 million is scheduled.

The operations in the other two fields referred to (electricity generation and transmission and energy saving) are also based on the sending of experts. One noteworthy point is that only limited resources are devoted to energy saving (5% of resources in 1979 and 1% in 1980).

The regional distribution of UNDP resources for 1979 is very well balanced: Asia and Latin America each take approximately 30% and Africa and (southern) Europe each approximately 20%. In 1980, the balance is tilting towards Asia (almost 60%). The southern European countries (Turkey, Albania, Romania, Bulgaria, Cyprus, Malta and Yugoslavia) maintain their share at 20%, while Africa and Latin America fall to some 10% each.

(b) The World Bank

The World Bank now plays a decisive role in the financing of energy projects in the developing countries. Although in past years its activity was almost exclusively concerned with the financing of electricity projects (approximately \$ 1,100 million in 1978), it has since last year turned its attention to all fields, with greatly increased resources. The turning-point was the World Bank decision of July 1977 to increase its activities in the energy field and subsequently in the oil sector as well.

In 1979 (the second half of fiscal year 1979 and the first half of fiscal year 1980) the World Bank provided some \$2,200 million for 30 projects - exclusively in the form of loans (this includes the IDA, though there are differences in the interest rates charged). Here too, the lion's share went to the electricity sector (77%). Even so, loans amounting to \$283 million and \$185 million were made available to the oil/gas and coal sectors respectively. In 1980 there is to be a further marked increase in activity in the oil/gas and coal sectors, with expected spending of \$538 million and \$270 million respectively, while the amount going to the electricity sector will decline to \$1,476 million.

The proportion of financing going to the oil/gas sector - 23% still in 1980 - is expected by the World Bank to increase to nearly 40% for the period 1979-83 as a whole.

	<u>\$ million</u>	
	<u>1979</u>	<u>1980</u>
Sector		
Electricity	1,683	1,476
Oil/gas	283	538
Coal	185	270
New sources of energy	40	10

In the electricity sector the breakdown of loans is as follows: 40% for hydro-electric projects, 25% for thermal power stations and 35% for transmission and distribution projects.

In the oil and gas sector, the World Bank is particularly keen to support production, earmarking for this purpose 68% of its loans to this sector. Of the remainder, exploration and test drillings account for 30% and preliminary geophysical work for 2%.

In the loans allocated to the coal sector the Bank also concentrates on production projects (97%), with only 3% going to engineering projects.

The World Bank also recognises the importance of developing traditional fuels (i.e. outside the commercial energy market), such as wood, dung, etc., and new energy sources (solar, etc.). However, because of the slight commercial interest of any projects in this field, it is unable to allocate more than a very modest level of loans to it.

The situation is similar with regard to measures in the field of technical assistance (not connected with capital projects). Here the Bank is active only in a few exceptional cases (e.g. study on the oil development possibilities in 70 countries, commissioned from the Bureau d'Etudes industrielles et de coopération de l'Institut Français du Pétrole).

An examination of World Bank activities from the regional viewpoint reveals a concentration in Latin America (32% in 1979, 36% in 1980) and in Asia (55% and 31%). Only 12 and 23% of the Bank's loan activities are concerned with Africa, the figures for southern Europe being 1% and 10%.

### 3. United States

The energy cooperation policy pursued by the United States has a number of features contrasting to UN and EC aid practice:

The proportion of technical assistance is relatively high (55% in 1980, the figure for 1979 being appreciably lower because of two exceptional power plant projects for 100 million \$); financial assistance is limited to a few fairly large projects (in 1979 seven projects costing \$231.0 million, in 1980 one project costing \$11.0 million) in the electricity sector and for the development of alternative energy sources; the regional spread among the developing countries is very even and it is noteworthy that Latin America does not receive any more aid than Africa.<sup>1/</sup>

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<sup>1/</sup> For further figures see Commission staff paper, Chapter I, tables 5 and 6.

	<u>§ million</u>	
	<u>1979</u>	<u>1980</u>
<u>Financial assistance</u>	231.0	29.9
Electricity	231.0	11.2
New energy sources		10.4
Not specified		8.3

A striking feature here is the marked decline in investment aid. This reflects the desire of the US Government to attach less importance to electrification in the future. The resources earmarked for this purpose are falling from § 231 million in 1979 to § 11 million in 1980. Admittedly, the resource allocation for new energy sources is being increased to § 10 million but the net result is a decline in investment aid of almost § 200 million, leaving total American aid in 1980 at only § 66 million.

There is however an increase in technical assistance from § 21 million to § 36 million. This is concentrated above all in the more important areas such as the development of alternative energy sources and energy technology and in energy planning and policy and training: over 80% of the technical assistance will go to these four key areas.

	<u>§ million</u>	
	<u>1979</u>	<u>1980</u>
<u>Technical assistance</u>		
Training	1.5	3.6
Energy policy and planning	3.3	7.3
Development of energy technology	8.0	8.6
Development of alternative energy sources	4.6	10.9
Development of other energy sources	1.0	0.4
Other measures	3.0	5.2
	<hr/> 21.4	<hr/> 36.0

Training in the energy field covers mainly energy management and training in the technologies involved in alternative energy sources (inter alia through courses at the University of Florida).

In the field of energy policy and programming financing is provided for:  
the holding of workshops,  
the preparation of alternative supply strategies,  
resource management and development,  
country assessments with regard to energy demand and supply.

The American administration has two instruments available for the country assessment operations.

- (i) the traditional instrument of sending out small teams of two or three advisers for a few months in order to gather together the available data on energy demand and supply; generally speaking, this work concentrates on one or two particularly relevant areas of demand and/or resource development; an assessment of this type (for Jamaica or the Dominican Republic, for example, costs between \$ 50,000 and \$ 200,000);
- (ii) a far more complex instrument, which analyses all sectors of demand systematically, evaluates all resources and after a comparison of both results puts forward supply alternatives. An assessment of this type is carried out by teams of around twenty experts working for six to twelve months on the spot with if possible the same number of local experts. It costs around \$ 700,000.

In the fields of energy technology and alternative energy sources US-AID mainly finances studies on bio-resources, decentralised micro-hydroelectric power plants, photovoltaic technologies, low cost technology for agriculture and provides experts in these fields for the administrations and institutes in developing countries.

#### 4. Japan

Japan's cooperation in the energy field has a rather different structure:

- (i) in the technical assistance field, the cooperation is diversified regionally (Asia, Latin America, Africa, and Europe (Turkey)) and by sectors (training, exploration of energy sources, development of new energy sources);
- (ii) in the field of financial assistance, cooperation is heavily concentrated in Asia and on the construction of power stations<sup>1/</sup>.

In the field of technical assistance Japanese aid extends to the provision of experts to exploit new energy sources (geothermal power station in Guatemala, ocean heat for ESCAP) and for the exploration and opening up of deposits (Chile, Philippines, Indonesia). Training covers essentially the organisation of study courses on geothermal energy in Japan (fifteen trainees in 1979 from fourteen countries in all parts of the world), and grants for training in geothermal energy exploration and evaluation at the Japanese geological institute.

The scale of the resources devoted by Japan to technical assistance is estimated at some \$ 0.3 million a year in both 1979 and 1980.

In 1979, financial assistance was concerned solely with the construction of power stations (hydroelectric and thermal). The ten new projects in 1979 are all located in Asia and are being financed by the Japanese Government with loans totalling \$ 19.6 million.

##### 5. The activities of the OPEC Special Fund

The OPEC countries provide a considerable amount of capital for cooperation with developing countries - including the energy field - both on a bilateral basis and via Arab development funds. The main providers of funds are Saudi Arabia, Kuwait and the United Arab Emirates, which account for nearly 90% of the net flow of OPEC ODA, the remaining 10% also is provided by the OPEC Special Fund.

The OPEC Special Fund provides loans (in practice at a zero interest rate) above all for countries experiencing particular balance of payments difficulties. Its activities are concentrated in Asia (76%) but it also supplies funds to Africa (18%) and Latin America (Central America 6%).<sup>2/</sup>

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<sup>1/</sup> For figures see Commission staff paper, Chapter I, table 7.

<sup>2/</sup> Detailed figures, see Commission staff paper, Chapter I, tables 8 and 9.

This money is mainly used for the financing of electricity generating projects, in particular hydroelectric power (40%) and coal (27%). Thermal power stations based on oil and gas have hitherto received little promotion (6%). Other projects, such as oil and natural gas exploration have hitherto taken 8% of the total.

<u>Financial assistance</u>	<u>1979 \$ million</u>
Electricity generation	50.6
of which:	
Hydroelectric power	23.6
Thermal	27.0
Electricity transmission	8.5
	<hr/>
	59.1
	<hr/> <hr/>
 <u>Technical assistance</u>	
Offshore prospecting	2.0
Energy programming	1.5
	<hr/>
	3.5
	<hr/> <hr/>

In 1979 the OPEC Special Fund again concentrated on promoting the electricity sector: the ten projects receiving investment aid were concerned with the construction of hydroelectric power stations in Asia, Central America and Africa (40%), a coal-fired power station in India (46%) and a project for electricity transmission in Bangladesh (14%).

In the technical assistance field the Fund is financing a regional project for offshore prospecting in eastern Asia and the greater part of the energy programme for Central America, both of these operations being implemented in cooperation with the UNDP.

A list of the projects to be financed by the OPEC Special Fund in 1980 is not yet available, but as the energy sector is one of the two priority areas of operation of this Fund, it may be assumed that projects will be backed at least on the same scale as in 1979 - assuming that appropriate financing requests are presented by the developing countries.

There are already signs of increased activity in the field of technical cooperation. For example, the OPEC Special Fund is earmarking several million dollars for the financing of OLADE (Latin American Energy Organisation) projects.

#### 6. Community and Member States

In 1979 the Community and its Member States accorded the developing countries aid to the tune of some 500 million EUA for energy cooperation. In so doing, with a share of just under 20% of total world aid in this field, Europe was the second biggest donor after the World Bank.

This aid is in fact forecast to exceed 700 million EUA in 1980 - up by no less than 40% on 1979. This is due above all to the growth of aid from the Community as such, which will rise from 100 million EUA to nearly 190 million EUA.<sup>1/</sup>

There is also likely to be a sharp rise - of over 100 million EUA - in bilateral aid, but it does not appear as spectacular when expressed as a percentage since the starting figure of 400 million EUA (1979) is considerably higher.

The most important reasons for these increases are the expected boosts to be given to EIB activities as regards Community aid<sup>2/</sup> (more than 80 million EUA) and to operations by the Federal Republic of Germany in the bilateral aid context rising from just under 200 million EUA to over 320 million EUA).

The Community and its Member States give about half its aid in the form of grants (60% in 1979, 45% in 1980). They are the only donor which has a broad spectrum of financing methods (grants, loans on special terms, loans on near-market terms). The World Bank, the OPEC Special Fund and Japan accord virtually all their aid in the form of loans, whereas the UNDP and the US administration accord only grants for the most part. Generally speaking, loans are employed only as investment assistance anyway, and even then only if warranted by the economic situation in the developing country and the return on the proposed scheme.

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<sup>1/</sup> For detailed figures see Commission's staff paper, Chapter I, tables 10-16.

<sup>2/</sup> It should be noted that the fifth EDF resources (under Lomé II), flowing in 1980, are not included.

An examination of the energy sectors that have received aid shows that electricity production has clearly benefited the most: this sector received 82%, or 410 million EUA, in 1979. Europe's contribution here was above the world average of 80%. In relative terms the donors that are keenest on this sector are Japan (100%), the OPEC Special Fund (93%), the USA (92%) and the World Bank (77%), which accorded 1,200 million EUA for electricity production in 1979. This preferential position can chiefly be attributed to the very high costs of hydroelectric power stations, and to the need for rapid electrification to serve industry and urban areas growing up.

In 1980 the Community and its Member States' aid to the electricity sector will drop back to 64% by value: some 446 million EUA, of which 15 million EUA for technical assistance and 431 million EUA for financial assistance.

It is noteworthy that there is great interest in the promotion of renewable energy sources (excluding hydro power): in 1980 the amount earmarked for this purpose in the Community is at least 40 million EUA as compared with 11 million EUA the year before. US aid, too, will grow from 3 million EUA to 17 million EUA and the UNDP allocation will go from 1 million EUA to 5 million EUA. Hence, activities in this field will expand from a world figure of just under 50 million EUA (1979) to over 70 million EUA.

(a) Technical assistance of the Community and its Member States

The structure of the Community's aid resources deployed or projected for 1979 and 1980 in the field of technical assistance is rather unbalanced.<sup>1/</sup>

	<u>million EUA</u>			
	<u>Community</u>		<u>Bilateral</u>	
	1979	1980	1979	1980
Electricity	0.2	2.1	20.3	13.2
Oil/gas	0.2	-	1.5	2.8
Coal	-	-	-	2.4
Renewable energy sources	0.5	0.7	0.3	13.2
R&D	-	-	6.4	14.6
Training	1.4	0.3	0.3	0.4
Other technical assistance	0.6	0.2	0.2	0.4
Energy programming	0.1	2.1		
	3.0	5.4	29.0	47.0

<sup>1/</sup> Detailed figures, see Commission's staff paper, Chapter I, tables 10-16.

The above remarks about the special encouragement being given to the electricity sector also apply here. It is particularly true of bilateral aid. What is particularly noticeable here, too, is that the Community is doing practically nothing to promote activity in the field of fossil fuels. Even bilateral aid here is very meagre (5% in 1979, 11% in 1980), but the situation looks as though it will straighten out in 1980.

However the Member States (and mainly the German technical assistance) are particularly bent on stepping up activities in the field of renewable energy sources. The same applies to technical assistance for research and development.

Community aid for training is fairly considerable (especially in 1979 because of a large-scale (1 million EUA) project benefiting Jordan). However, there are some gaps in the information supplied by certain Member States in this particular field, with the result that the actual figures could be higher than the Commission's rather conservative estimates.

There have not been any energy programming (establishment of balances and forecasts of sectoral energy demand and supply) projects as yet in the EEC - with the exception of one German project in Colombia. This field is of special significance, however, because of the key role it can play in promoting the use and rational management of local energy resources in developing countries, and in achieving industrial development and economic growth.

The main organisations and countries giving aid to resource development - namely the World Bank, the UNDP, the OPEC Special Fund and the US AID - agree on this.

One last noteworthy measure in the sphere of technical assistance - which also happens to link up closely with the particular subject in hand, energy programming - is the organisation of seminars and conferences. In 1979 the

Commission organised and financed a large international conference (in Varese) on the use of solar energy in developing countries. In so doing it made a contribution to international discussion on the subject and provided considerable food for thought and points of departure for further work in this area.

A regional overview of the Community and its Member States' technical assistance reveals that it is not concentrated on the associated States and the African continent. About half the assistance does go to these countries (1.5 million EUA in 1979 and 3.3 million EUA in 1980), but since bilateral aid is active mainly in Asia and is ten times the volume of Community assistance, it is Asia which benefits the most.

	<u>million EUA</u>			
<u>Technical assistance</u>	<u>1979</u>	<u>of which EC</u>	<u>1980</u>	<u>of which EC</u>
Africa	8.8	1.5	12.7	3.3
Asia	17.0	-	18.8	-
Latin America	4.5	0.1	16.5	0.1
All developing countries (regional) and global	<u>1.7</u>	<u>1.4</u>	<u>4.4</u>	<u>2.0</u>
	32.0	3.0	52.4	5.4

The scale of the financial aids in Latin America is similar to that in Africa because of Member States' aids. There were no Community or Member States' financed schemes in European developing countries in 1979, and none are planned for 1980 either.

Community technical assistance projects financed in 1979 or planned for 1980 comprise 38 schemes in the following fields:

	<u>million EUA</u>	
	<u>1979</u>	<u>1980</u>
Hydroelectricity	0.2	3.4
Thermal power stations	1.3	2.0
Electricity distribution		0.4
New energy sources (esp. geothermal energy in Ethiopia, and solar energy)	5.0	1.3
Technical assistance for training, seminars, energy programming	2.1	2.6

(b) Financial assistance of the Community and its Member States

Financial assistance in 1979 and 1980 is again chiefly for electricity:

	<u>EC and Member States</u>		<u>EC</u>	
	<u>1979</u>	<u>1980</u>	<u>1979</u>	<u>1980</u>
Electricity	390	431	94	108
Oil/gas	15	9	-	-
Coal	56	184	-	72
New energy sources	10	27	5	3
	<u>471</u>	<u>651</u>	<u>99</u>	<u>182</u>

In 1979 the electricity share was 83%, but according to the estimates it should fall to 66% in 1980. Certain Member States (in particular Germany), and the Commission too, will be providing more support in 1980 for projects in the coal sector. The percentage of aid going to new energy sources will probably be doubled. The following breakdown of overall investment aid (in million EUA) by region also shows that the largest amount goes to Asia. This is explained by a small number of large-scale electricity projects being carried out by German aid in Bangladesh, Indonesia, Thailand and Pakistan, and UK aid to Pakistan, India, Malaysia and Bangladesh, which together account for two-thirds of the total.

	<u>1979</u>	<u>of which EC</u>	<u>1980</u>	<u>of which EC</u>
Africa	141	18	179	29
Asia	163	-	216	-
Latin America	45	-	56	-
Europe	122	81	200	153
	<u>471</u>	<u>99</u>	<u>651</u>	<u>182</u>

The scale of (mainly bilateral) aid going to the Mediterranean areas of Europe is also huge: two major German projects and one UK project (in Portugal, Turkey and Cyprus) account between them for 77 million EUA, including 48 million EUA for a lignite project.

In 1979 the EIB financed three projects in Mediterranean Europe, all in the electricity sector, at a total cost of 74 million EUA.

Aid to Latin America, on the other hand, is still relatively low, accounting for about 10% of total financial assistance. It does not look as though the geographical distribution will be much different in 1980.

At the moment there is little point in undertaking a more detailed analysis of projects in the various sectors, since some Member States have only provided some global information and others have submitted only incomplete or imprecise figures. Commission staff therefore have been estimating sectoral breakdowns based on available data from those Member States which have supplied figures. Full cooperation with the Member States is clearly desirable in this field to enable the Commission to make a comparative analysis, as it was instructed to do by the Council on 30 October 1978.

The ten financial assistance projects financed by the Community in 1979 concerned:

	<u>million EUA</u>
Hydroelectric power generation	55.3
Thermal power stations	8.1
Electricity transmission	32.0
New energy sources	5.3
(geothermal energy 4.1 million EUA; solar energy 1.2 million EUA)	

Four projects worth a total of 93 million EUA were financed by loans from the EIB.

For 1980 the EIB could increase energy activities (possibly involving up to 175 million EUA). Grants under the fourth EDF will be up from 6.3 million EUA to 7.1 million EUA. They will continue to be used mainly for projects in the electricity sector.

## 7. Conclusions

The above preliminary investigation of international energy cooperation, which together accounts for 2,300 million EUA or about 85% of total world ODA in this sector, calls for a number of comments and conclusion.

- (a) The total amount of money finding its way to the developing countries in 1979 and 1980 is considerable: 2,300 million EUA and 2,500 million EUA respectively. This corresponds to 10% of the world total for official development assistance. (The Community, with a bilateral and multilateral contribution of 500 million EUA and 700 million EUA, comes in second place after the World Bank, with 1,600 million EUA).

It is impossible to say definitely whether the total sum is enough to meet the urgent needs of the developing countries or to prevent a further deterioration in their energy supply position, and in many cases their economic position as well; not enough is known about the structure and extent of their foreseeable energy needs, or the resources available to meet them.

- (b) The aid pattern in the energy sector is uneven:
- i. electricity accounted in 1979 for 80% (in the case of EC and Member States' aid the proportion is even higher: 82%), and in 1980 will still take 64% (EC and Member States: 64%);
  - ii. coal and oil/gas, on the other hand, are receiving respectively only 10%, this figure will increase however to 15% in 1980;
  - iii. although the percentage of aid going to renewable energy sources has risen by half from 2% to 3%, it is still very small;
  - iv. even less is being done in the field of technical assistance for horizontal operations (R&D, training, energy programming), which receives only 1% of the total world assistance.

- (c) Loans account for 78% of total ODA in 1979 and 84% in 1980.
- (d) Clearly information is substantially lacking concerning:
- i. an analysis of the world aid in the energy sector;
  - ii. a detailed, comparative study of the Member States bilateral operations;
  - iii. the future scale and structure of the developing countries' energy requirements and the scope for supplying these needs, mainly by the utilisation of local resources and the availability of staff.
- (e) The Commission will continue its efforts in analysing the aid given by main donors and by all Member States in order to fill this information gap.
- (f) The Commission will also carry out, in 1980, at the request of interested countries energy programming to help fill the gaps concerning the availability of energy balances, the forecasts of demand and supply and, finally, the choice of an energy supply strategy adapted to the developing countries' real needs.
- (g) The Commission thus replies to the Council's invitation of 30 October 1978 concerning "complementary Community action where it might be useful". By its activity in energy programming, the Community will follow two objectives:
- a contribution to world wide activities in quantifying medium and long term energy demand and supply, an activity which ought to develop in the present context of global or regional negotiations;
  - a concrete reply to the developing countries' requests for means of evaluating energy projects to be financed by EC or other sources.