Annex 1

1998 Review of Energy Efficiency Policy

in EU countries and Norway

AUSTRIA

Many of Austrian villages, cities and eight out of nine provinces have joined the "Climate Alliance of European cities with indigenous people" with it's aim of a reduction of CO_2-emissions by 50% by 2010. In due course many energy plans and CO_2-reduction action plans have been introduced. Partly with subsidies by the European Union, in the last two years, a number of new regional energy conservation agencies have been founded, i.e. in Graz, Bruck a.d. Mur, Feldbach, Waldviertel and in the provinces Carinthia and Burgenland and some more will be established in the next years. In Vienna, the "Eco-Business-Plan" was founded to rapidly implementing CO_2-reduction measures in businesses.

A plan to realize the targets of the Kyoto Protocol is under way and should be completed in spring 1999. This will push the measures for energy efficiency in the next years.

Residential sector

In 1995, a treaty between the Federal Government and the provinces (Bundeslaender) was signed, which committed federal and provincial governments to improve their building codes for new buildings. In due course – in the last three years – most of the provinces implemented new statutory regulations concerning building codes (see Table 1), the performance of heat generators for space heating and the production of hot water, consumption oriented heat cost calculation as well as the limitation of energy consumption of electrical domestic appliances. This, combined with additional energy-related incentives for subsidies led to a significant reduction of energy consumption of new buildings. In Vienna, a very flexible instrument, a competition between the house construction associations will lead to an average of about 35 kWh/m²/a. The energy efficiency criteria are specified in a tender. The winner of the competition has to guarantee the criteria of the tender after construction.

In the last years, some provinces have introduced additional grants for special energy saving design and construction of buildings (e.g. higher thermal insulation) and the use of renewable energy sources (thermal solar heating, heat pumps…) as part of the subsidies for erection and retrofitting of buildings.

During the last year, many of the provinces have introduced subsidies to exchange old boilers for new efficient ones. Some of the provinces give higher grants for boilers run with biomass.

Transport sector

During the years 1997/1998, the Ministries of Environment and of Transport have been working out a step-by-step emission reduction plan for the transport sector, which will be presented at the beginning of 1999 and introduced in the years after.

The introduction of road pricing on highways was planned through the Federal Roads Financing Act (1996) for trucks in 1998 and for cars in 2001. In the meantime it is not likely that road pricing for for cars will be introduced in the near future and the introduction for trucks will be introduced not before 2000.

Industrial sector

In 1991, the City of Graz launched a Cleaner Production Programme **ECOPROFIT** (ECOlogical PROject For Integrated environmental Technology) for companies of different sizes (emphasis on small and medium sized) and branches (various industry, handicraft, trade). The goal of the programme is to improve the ecological situation (including energy conservation) within the companies and the commune. In the last years, based on the model of Graz, ECOPROFIT was also established in Klagenfurt/Carinthia, Dornbirn/Vorarlberg and Lower Austria.

"Umweltförderung im Inland" is the most important subsidy for companies with emphasis on investments in climate protection, energy saving, renewable energies and prevention of air pollution. The basis of this subsidy is regulated in the federal law "Umweltfördergesetz". Since 1997 there are grants not only for companies but for all natural and juristic legal persons in Austria. The annual budget of these grants is about 400 million ATS from the Austrian Ministry of the Environment, the "Österreichische Kommunalkredit" manages the subsidies. There are grants for energy saving measures especially heat recovery systems, improving thermal insulation, CHP, fuel switch to district heating as well as services of energy service companies, concepts, studies, experts' reports. Since January 1st 1997 the "Toronto-goal" of the Austrian federal government (reducing the national CO_2-emissions by 20% by 2005 on the basis of 1988) has been included in the guidelines for application so that climate protection and the reduction of CO_2 emissions can be directly considered in the decision on the subsidy. The grants amount for SMEs up to 35% and for large enterprises up to 30% of the investment costs. Additional grants, within the EU-maximum limit, are provided for innovative technologies. Multiple grants by public (e.g. by the EU or by provincial governments) are also possible within the maximum limit of the EU.

Taxes

A raise of energy taxes for gas, electricity, oil products and coal is under discussion as a part of a major tax reform to be realized in the year 2000.

The purchase tax on cars, the tax rate of which is depending on the fuel consumption, has been changed to the new European cycle (MVEG). The tax rates have been adjusted.

Table 1: Regulation concerning building efficiency in the different provinces of Austria (U-values: W/m²K)

Bundesland	Burgenland	Carinthia	Lower Austria	Upper Austria	Salz-burg	Styria	Tirol	Vorarl-berg	Vienna
Validity since	1998	1997	1996	1995	1983/ 1991	1997	1998	1996	1993
outer walls	0.45	0.40	0.40	0.50	0.47-0.56	MD: 0.5 1&2D: 0.40	0.35	0.35	0.50
walls to unheated building-parts and walls of fire	0.70	0.70	0.70	0.70	0.70-0.83	0.70	0.50	0.50	------
walls to separate operating units	1.20	1,60	1.60	1.60	1.56	1.60	0.90	1.60	0.90
outside ceilings, lofts, passages, etc.	0.25	0.25	0.22	0.25	0.26-0.30	0.20	0.20	0.25	0.20
ceilings to unheated building units	0.40	0.40	0.40	0.45	0.37-0.45	0.40	0.40	0.40	0.40
ceilings to separate residential- and other operating units	0.90	0,90	0.90	0.90	1.03	0.90	0.70	0.90	0.90
windows	1.70	1,80	1.80	1.90	2.50	1.90	1.70	1.80	1.90
external doors	1.70	1,80	1.80	1.90	2.50	1.70/ 1.90	1.70	1.90	1.70
walls to ground	0.40	0.50	0.50	0.50	0.55-0.67	0.50	0.40	0.50	0.50
floors to ground	0.40	0.50	0.50	0.50	0.39-0.47	0.50	0.40	0.50	0.40

BELGIUM

Institutional changes

Signature of a co-operation agreement between the Regions (which, in Belgium, are in charge of the energy efficiency policy) on voluntary agreements for the improvement of energy efficiency in industry. The implementation details are still under discussion.

In Flanders, progressive setting up of VIREG (Flemish Institution for Rational Use of Energy), an energy efficiency policy consultation and advisory body, which comprises representatives not only of the government, but also of the energy consumers, producers and distributors and which is to guide the implementation of all actions in the field of rational use of energy in the Flemish Region.

Measures and programmes

No significant changes.

Budget

There is no significant change in the overall budget for energy efficiency, estimated at about 460 MBEF in 1997 and 1998[1].

Taxation

No change. No tax has as yet been introduced which could be considered as an economic instrument designed to motivate energy efficiency.

[1] Note that the budget figure for 1996 differs from that given last year. It does not anymore include the " energy efficiency " fraction of the subsidies for economic expansion in Flanders, for which yearly budgets are not available.

FINLAND

Institutional changes

Several regional energy management agencies have been established in Finland based on EU SAVE funding. When taking into account also the newest agencies that will start operation in the near future, altogether 10 agencies exist. The majority of them are located in the southern part of the country, where the population is concentrated. Every agency has its own profile, the variety of which ranges from technology oriented to non-technical approaches and from energy efficiency to renewable energy technologies. The regional energy agencies operate in close co-operation with the national information center for energy efficiency, Motiva.

In the beginning of 1998 Motivas field of expertise has been expanded to cover renewable energy technologies beside energy efficiency. Main emphasis is laid on biomass due to the national context: approximately 20% of the Finnish energy consumption are covered by biomass and a noticeable potential for further enhancement exists. Biomass based energy sources are mainly used in the pulp and paper industry, however, also SME's, the service sector and households utilise them. Other renewable energy sources that will be enhanced by Motiva are solar and wind energy and heat pumps.

Measures and programs

The liberalisation of the electricity markets took one step further on 1st Sept. 1998 when small customers including also households were given permission to change the electricity producer. This has also opened a new market for so called green electricity. The Finnish Association for Nature Conservation has launched an ecolabel "Norppa suosittaa" for ecologically generated electricity. This has stimulated the construction of wind capacity in Finland, which is expected to double within one year.

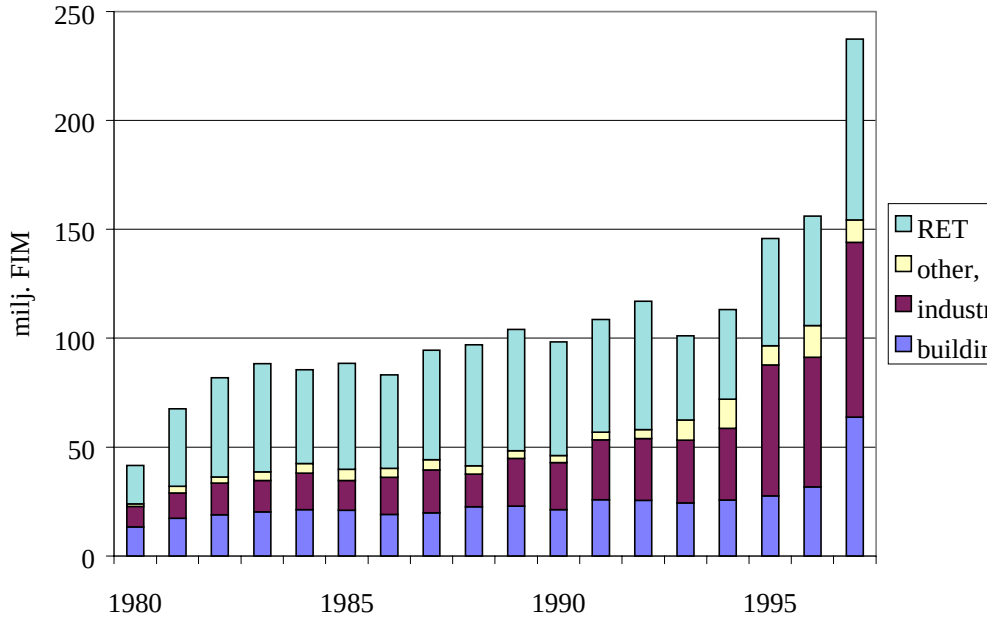
The voluntary agreements have been successful both within the industrial and the generation branches. Already 70% of the industrial energy consumption and 2/3 of the generation capacity are included in the agreements.

Energy audits have been found to be a successful method for enhancing energy efficiency in Finland. Since an extensive energy audit is often too expensive to be affordable for SMEs an energy inspection – a light version of the energy audit procedure – has been developed and piloted recently. Initial plans for a wider marketing and implementation of the new approach exist.

Budget

Tekes, Technology Development Center, has the main responsibility for managing public funding for R&D in the energy technology field. Several large research programs covering various sectors and energy technologies have existed in the 90's. Examples of such programs are Mobile in the traffic sector or Bioenergia dealing with bioenergy related technologies. Many of the research programs have finished in 1997 or 1998 and currently new programs are planned and started. The following figure indicates the development of the annual public R&D funding in the various subsectors.

Figure 1: Public funding for R&D in energy efficiency and renewable energy technologies



Taxation

Major changes in taxation occurred on 1st Jan.1997, when the carbon-based taxes in electricity generation were removed due to the opening electricity markets. In heat generation however, the CO_2 content of the fuel still is a basis for taxation. Since then no remarkable changes have taken place.

FRANCE

The clean air and rational use of energy act.

Adopted in December 30 1996, the general aim of this law is to provide to the french government a framework for acting on air pollution. Nevertheless, some measures included in this law have a direct impact on energy efficiency and on development of renewables. The contents of this law has been presented in the previous french national report (phase 3 December 1997). During the 1997 and 1998 years, some decrees of application have been performed.

Ecological taxation (TGAP)

The recent adoption of a new pollution tax based on the environmental impact on air pollution, wastes and noise and wich will be partly used to finance ADEME'activities on environment and energy efficiency.

EU directives

The inclusion into French legislation of the EU directive liberalising the electricity and gas market was adopted in the Ministry Council in December 1998.

Public budget dedicated to energy efficiency.

The budget allocated for energy efficiency will increased by FF 500 million in 1999, (multiplying by a factor 5). ADEME will be increased by 100 staff members.

Table 1 provides the historical budget.

Table 1 : Evolution of ADEME budget [(1)]

10^6 F.F.	1993	1994	1995	1996	1997
Total	**380**	**272**	**254**	**206**	**148**
of which					
- Industry	48	30	34	28	16
- Housing-services	55	47	32	34	17
- Transport	16	15	11	14	6
- Renewables	75	76	66	69	49

Source : ADEME
(1) engaged credits

Table 1 shows that the public effort for energy efficiency has been dramatically dropping, until 1997. However, the public effort in some sectors still remain significant such as for renewables. Particular efforts in this field has been focused on the " wood energy plan " to favour penetration of wood boilers in housing and biofuels.

As shown by a recent evaluation of the energy efficiency policy in France (the CIME report 1997) has shown; the ADEME budget only represents a minor part of the overall public effort

dedicated to energy efficiency (about 30% in 1993). Other ministries or specialised agencies are also providing funds. It is particularly visible for the housing sector in which there exists tax deduction for energy efficiency investments or other direct investment grants for social building (Palulos). At least, the tax deduction has been maintained as well as subsidies for social buildings. In addition in the manufacturing sector, the accelerated depreciation rate for investment is continuing. But the most recent event is the implementation of the " FACE " fund programme managed by local authorities for rural electrification.

During this 3 last years 14 Millions FF have been dedicated to DSM (housing, tertiary and industry (electric motors) and 130 Millions FF for renewables.

Energy prices evolution

Both in industry and housing, the energy prices at the consumer level are slightly declining at constant price excepted in 1996 for gas in industry (Table 2).

Table 2 : Trends in the energy price for households and industry

	1991	1992	1993	1994	1995	1996	1997
Coal (industry) current c/kWh	7,4	7,5	7,5	7,5	7,5	7,5	
Gas (industry) current c/kWh	8,8	8,0	7,7	7,3	7,3	7,7	
Gas (households) current c/kWh	23,7	23,5	22,7	22,4	22,2	22,4	
Electricity (industry) current c/kWh	32,6	32,9	33,3	33,2	33,0	32,6	
Electricity (households) current c/kWh	75,2	76,8	78,2	78,6	79,0	79,7	

Note : prices in French cents per kWh measured at net calorific value without value added tax.
Source : CEREN

Major price changes have occurred for the oil products. Including the rise in the exchange rate to the US dollar and the excise petroleum tax (TIPP), the prices of oil products have significantly increased during the 4 last years as shown in Table 3.

Table 3 : **Trends in the oil products price (current FF)**

FF/l	1992	1992	1993	1994	1995	1996	1997
Unleaded gasoline	5,19	5,07	5,23	5,37	5,66	6,01	6,23
Gasoline	5,35	5,25	5,44	5,61	5,84	6,21	6,43
Diesel	3,58	3,46	3,67	3,86	3,85	4,28	3,44
Heating oil	2,30	2,05	2,09	2,04	2,00	2,19	2,31

Source : CPDP

During the four last years, the energy prices (current FF.) increased significantly by 18,5 %; 18,2 %; 23,6%; 6,8%, respectively for unleaded gasoline, gasoline , diesel and heating oil. This has certainly affected the trends in energy efficiency.

Energie 2010-2020

The French Planning Commission has produced a report on long term prospective of supply and energy demand. This report called " Energie 2010-2020 " has performed three contrasted scenarios for the long term, with an equiprobability of achievement, of which one "the socio-economic environment-S3" gives high priority to energy efficiency.

GERMANY

The year 1998 has been marked in Germany by the change in government from the conservative/liberal parties to a coalition of social democrats and the green party. The new government has decided in the field of energy on several new lines which directly or indirectly also impact on energy efficiency:

- Nuclear energy will be slowly abandoned somewhat in advance to the "natural" phase out of the aging plants. The speed of the phase out is determined by the outcome of the consensus discussions among representatives of the government and the power generation industries on one hand, and the availability of replacement technologies on the other hand.
- The new government pushes for the development of renewable energy sources in order to cope with the goal to double the share of "new" renewable energy sources (renewable sources in addition to classical hydro power). The most remarkable step into this direction is the financing of a 100,000 roof subsidy programme for photovoltaics which requires a financing of nearly 460 million Euro. The funds will be drawn from the energy tax, in particlar from the part of the tax which is paid by renewable energy sources, and will be paid in the form of low-interest loans (Deutsche Ausgleichsbank).

The Prognos AG (Basel) and the EWI Institute (Cologne) have published for Germany the first results of a new energy forecast. According to this forecast the primary energy consumption in Germany will have decreased by 10 % in the year 2020 despite further economic growth.

The International Energy Agency has published in 1998 an In-depth Review of German Energy Policy (IEA, 1998).

Institutions

Following the change in government, Federal ministries were restructured. The most important changes with respect to energy efficiency is that applied energy research is shifted from the Federal Ministry of Research and Technology (BMBF) to the Ministry of Economic Affairs (BMWi). This includes the promotion of new and renewable energy sources and nuclear safety.

National programme and/or energy efficiency law

Germany has finally - after lengthy discussions - succeeded to translate the European Directives on electricity market liberalisation (1996) and on gas market liberalisation (1998) into national law, when its new energy law (Energiewirtschaftgesetz) entered into force on April 29, 1998 replacing an old law from 1935. The new energy law will have mainly impact on combined heat and power generation (CHP), electricity for renewable energy sources (for which it sets a regional cap of 5 % of the overall electricity generated by a regional supplier in order to spread out better the observed regional inequalities in Germany due to the geographical distribution of the main "new" renewable energy source wind (by the end of 1998 Germany had installed close to 3000 MW wind power, most of which in the north of the country). The impact on energy efficiency of the new law is rather seen as negative: due to lower electricity and gas prices consumption may rise, and due to the harder competition

amongst companies they might be tempted to cut demand side programmes which do not generate large profits. On the other hand they might be obliged by the competition to offer, through the development of energy services rather than pure energy supply, energy efficiency solutions to their customers.

Budget

The IEA 1998 in-depth review mentioned earlier publishes for the first time energy efficiency budgets taking into account Federal budgets and partially budgets of the Laender. According to this review, the following budgets are observed:

Table 2.4-1 Energy conservation expenditure Germany, 1990-1996 (million DM)

	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**
Federal expenditure	1242	1008	1212	1186	1285	1316	1461
Laender expenditure	556	978	802	1092	1604	1169	956
Total	1798	1986	2014	2278	2889	2485	2417

Source: IEA (1998)

Those figures seem, however, to overestimate the energy efficiency budget in Germany considerably. It is likely that the figures contain programmes which have some energy efficiency components but are mainly directed towards other objectives. Individual figures for some areas are considerably lower:

In 1997, the overall public R&D budget for ”energy conservation” amounted to around 12.4 million Euro (IEA, 1998), of which more than 6 million Euro for industrial energy efficiency. The remainder was for energy efficiency in buildings in households and the tertiary sector. This was about 5 % of the total energy R&D expenditure. The Federal ministry of Economic Affairs publishes for 1998 a figure of 14 million Euro for ”rational use of energy” in ist budget plan.

Utilities

As a consequence of the liberalisation Green Tariffs start to spread in Germany. Both classical and new players in the power generation sector are active in this field. Usually higher electricity prices ranging from +0.025 to +0.01 Euro per kWh are observed. So for example by the middle of 1998 about 15400 costumers of the largest electricity supply companies had decided to accept a higher tariff of 0.01 Euro in exchange of electricity from renewable sources. The initiatives from new players are, however, strongly hampered by flaws in the new energy law which does not clearly specify the conditions for the transmission of electricity generated from third parties.

Pricing

After the change of Government, Germany has committed to introduce the first step of an energy tax with the levels shown in the table below. The new tax in Germany to be introduced is an energy tax. This measure would, however only become effective in spring 1999.

In a first approach, energy intensive industries (e. g. cement and aluminium industry) should be exempt from the taxes except for transport fuels (27 branches representing 40 % of the energy consumption in the manufacturing industry). The other industrial branches would be charged with 25 % of the ordinary tax rate (again except for the transport fuels). The definition of 'energy intensive' was fulfilled if the company has energy costs of more than 6.4 % of the production costs.

Due to intervention from the European Commission it is, however, likely that the energy-intensive industries will not be fully exempted from the tax (as at January 1999 a reduced tax rate of 20 % for all industrial branches is in discussion, possibly with special conditions for very energy-intensive branches). Fuels for electricity generation are only taxed through the electricity tax; the fuel for electricity generation are not taxed directly. Electricity consumption exceeding 50,000 kWh/year will have to pay a reduced tax of 0.0025 Euro/kWh. The energy tax ("Ökosteuer") will generate 5.65 billion Euro in the first year which will be used to reduce additional charges on labour from social security.

Energy / sector	Year of implementation	Tax level
all mineral oil based fuels/Transport sector	1999	0.03 Euro/Liter
fuel oil/all sectors	1999	0.02 Euro/Liter
gas/all sectors	1999	0.0016 Euro/kWh
electricity/all sectors	1999	0.01 Euro/kWh

Efficiency standards

The newest Thermal Insulation Ordinance took effect in Germany in January 1995 and was aimed to reduce energy consumption and the resulting CO_2 emission caused by space heating. It concerned residential buildings and industrial buildings as well. A revision of the 1995 building code is in discussion. It shall include a further tightening of the limits and a wider choice of energy saving measures to reach these limits, in particular through a combination of measures on the building shell and the heating plant. In 1998, a concrete draft of the new "Energy Saving Regulation" ("Neue Energieeinsparverordnung ") became available for discussion. It shall reduce energy consumption of new buildings by about 30 % and combine the regulations concerning standards for heating equipment and thermal insulation in one regulation.

Voluntary agreements

For several years, German industry has been signalling its interest in voluntary agreements through talks between the head organisation of German industrial associations, BDI, a few member associations and the Federal Government.

Individual member associations of the BDI having given a individual declaration for a voluntary agreement so far concern the following branches:

- Non-metallic minerals (with individual declarations from cement, brick, lime and glass industry)
- Mining (Potassium mining)
- Pulp and paper industry
- Chemical industry
- Non-ferrous metals (excluding foundries)
- Iron/steel industry (excluding foundries)
- Sugar industry
- Textile industry.

By the end of 1997, the German research institute RWI (Rheinisch-Westfaelisches Institut für Wirtschaftsforschung), which was officially charged by the government and the BDI to monitor yearly the progress of the agreements published a report which concluded that by 1996, the year of the amended declaration, many of branches had already obtained substantial amounts of the promised reduction in energy consumption and that the targets should be tightened. The talks between government and industry went on in 1998, though it is unclear whether industry will continue the talks given the fact that the new government has introduced a new energy tax. No new monitoring was published so far by RWI.

GREECE

Institutions

The Center for Renewable Energy Sources (CRES) is the National Energy Consulting Agency for RES and RUE. The Greek Government has emphasized the importance of energy efficiency and sustainable development in the energy sector, for this reason, the Ministry of Development proposed a new business plan for CRES. The new business plan of CRES, completed in 1997, determines its new era, where it will act as a catalyst for the widening of the Greek RES market and RUE implementation.

In the beginning of 1998 the new business plan has been adopted and implemented.

Additionally, CRES has undertaken the management and inspection of the activities of regional and local energy centers. Today, 19 Regional and local energy centers operate throughout the country. All of them are under the supervision of regions prefectures or municipalities. Last November another Energy center of Larisa was established in the prefecture of Larisa.

Many responsibilities in energy policy topics, and planning, are due to be transferred from the central Services of the Ministry of Development, to the administrative infrastructure of the 13 Greek Regions and the 52 Prefectures, by Presidential Decree. The relevant peripheral Energy Centres, existing and new ones, the activities of which are specified by the Law 2244/94 are expected to play a key role to the regional energy action plans.

Measures - Programmes

The following recent legislative acts are relevant to the optimization of energy efficiency in all sectors:

1. The recent **Common Ministerial Decision** (Ministry for the Environment, Physical Planning and Public Works/Ministry for Development/Ministry of National Economy/ Ministry of the Interior) **CMD 21475/4707 (1998)** in agreement with the provisions of the SAVE Directive (93/76/EC) for the "*stabilization of carbon dioxide emissions and the efficient energy use in buildings*", on the basis of the results of the Action Plan ENERGY 2001. This CMD is expected that it will change significantly the energy consumers' behavior.

2. The Ministry of Development is now working out a draft law which has been submitted by an experts team refer to the **96/92 EU Directive** about the common legislative measures for the liberalization of Internal electricity market.

3. **The Law 2244/94** regulates general issues of electricity production from RES, cogeneration (CHP) with conventional fuels - natural gas and/or energy recovery. Is under amendment since it has to be harmonized with the new needs which arises from electricity and natural gas liberalization.

4. **The Operational program of Energy** (OPE), which is co-funded by the Greek Government and the Community Support Framework II (CSF II), is an integrated structural

intervention to the national energy system. OPE, through its **allocated actions** and **economic incentives,** contributes to the implementation of important projects of the electricity production sector, enforces investments in the field of **rational use of energy - energy efficiency** and drives the promotion of **renewable** and other indigenous energy sources.

5. **Operation Programme for Research & Technology II (OPRD II)** which is co-funded by the Greek Government and the Community Support Framework II (CSF II), support s among different measures, the research infrastructure of scientific institutes and private bodies for RUE &RES national research and development

6. **Circular and Plan for Energy Management and Efficiency in Public Buildings.** In February 1997, the Ministry for the interiors, Public Administration and Decentralization, issued a Circular on "Energy saving measures and policy in public organizations buildings" to reduce operational expenses for energy and maintenance, improve working conditions, upgrade environmental quality and contribute to the rational exploitation of energy resources, thus enhancing the quality of public services. The Circular concerns both existing and new public buildings and introduces the concept and the practice of Building Energy Management.

To serve the above aims all public administration bodies were requested to appoint a person responsible for every day energy management for a unit or group of buildings., i.e. to elaborate specific tasks set to ENERGY 2001 (programming for energy auditing and monitoring, maintenance scheduling and supervision, energy efficiency project budgeting and financing, promotion of financing mechanisms e.g. TPF, leasing, organization of promotional and awareness activities concerning rational use of energy etc.)

The task of the appointed energy responsibles of the buildings of public administration is inspected and regulated by a Ministerial Committee which also prepares a special programme for the improvement of building energy efficiency and the professional training of energy responsibles.

Investment subsidies

The Operational programme of Energy OPE is completed the second declaration in the beginning of 1998. The second declaration of the program has a total budget of 434 MECU, out of which 51.5% derive from the European Commission, 29.5% from national public funds and 33% from private funds. OPE covers the time period of 1994-1999 and comprises four subprograms.

The budget of the operation Programme for Research & Technology II, which is being implemented (as an example) by CRES financed by OPRT II, reaches 1 MECU.

From April 1998 the **law 2601/98**, replaced the previous development law 1892/90. It foresees *inter alia* the subsidization of industrial activities relative to energy saving, exploitation of agricultural, industrial and municipal wastes and effluents, the creation of mechanisms for energy saving, the use of solid fuels in the form of biomass and the production of energy by annual or perennial plants (energy plantations). The law also foresees the subsidization of industries or companies for the production of electricity through the exploitation of indigenous renewable energy sources. It was the first step towards recognizing the fact that

this kind of investments should be subsidized as productive. Investment subsidies range from 40-59%, depending on the geographical location of the investment, while loans at reduced interest rates, tax credits and increased depreciation rates are provided.

Tax exemptions

Law 2364/95, which was approved by the Parliament in 1995, promotes the distribution of natural gas that is recently being implemented in Greece. The law provides a tax exemption of 75% from the end-user purchase and installation expenses of household appliances or systems using RES or natural gas, thus reinstating previous tax exemptions for users of solar collector systems, which had lapsed.

IRELAND

Institutions

Irish Energy Centre: The Irish Energy Centre was established in September 1994 as a joint initiative of the Department of Public Enterprise and Forbairt. The centre is charged with the task of co-ordinating and implementing the National Energy Conservation Programme. Funding for the Centre's activities comes from the Exchequer and from EU Structural Funds and its work programme is aimed primarily at stimulating private sector activity in pursuit of energy efficiency.

In 1998 is was proposed to set the Irish Energy Centre up as a separate state agency. Legislation is currently being drafted and it is thought that the process will be completed by the year 2000

Local Energy Agencies: During late 1995, three regional energy agencies were established by local authorities and part-funded under the EU SAVE programme. A further five were established in 1997 and two more were established in 1997/98.

National Programmes

Energy Efficiency Investment Support Scheme: The Energy Efficiency Investment Support Scheme (EEISS) was launched in 1995 and is administered by the Irish Energy Centre. It provides grant aid to companies to invest in new technology and equipment that yield increase in energy efficiency. Provisional figures for 1997 show that about 100 businesses received aid that will yield energy savings of IR£2.8 million.

Steam System Boiler Evaluation Scheme: A steam plant evaluation scheme was established in 1996 directed specifically towards improving boiler efficiency. The Steam System Boiler Evaluation Scheme aims to reduce energy consumption in boiler systems by IR£5 million by 1999. This is to be achieved through a combination of grant aid, detailed training programmes and a national ceremony that publicly acknowledges good practice in the boiler room.

Self Audit and Statement of Energy Accounts Scheme: The Self Audit and Annual Statement of Energy Accounts Scheme, run by the Irish Energy Centre, provides a formal framework within which an organisation can make energy a strategic component of corporate policy. Companies participating in the scheme make a public commitment, through their chief executive or managing director, to assess energy consumption, define targets and strategies for reduction and provide an annual statement on energy performance. The aim is to reduce energy consumption in participating companies by 5 - 10% over 3 years. By the end of 1997, 59 companies will have been signed up with a combined annual energy spend of IR£110 million.

Best Practice Programme: The Irish Energy Centre's Best Practice Programme aims to accelerate and increase the rate adoption of technologies that are under-used but which have the potential to deliver significant energy savings.

Demand Side Management: The national electricity utility, Electricity Supply Board (ESB), has a continuing Demand Side Management programme. Since 1991 over 1,200 energy saving

projects have been implemented in the industry sector resulting in cumulative savings of IR£11 million.

CHP: The Alternative Energy Requirement IV (AER IV) competition was launched in August 1998. This aims to increase the installed combined heat and power (CHP) in Ireland by 50% (42 MW of new capacity). Grant aid of IR£1.8m on an investment of IR£35m. All projects to be installed by December 1999.

Renewable Energy: The Alternative Energy Requirement III (AER III) launched in April 1997, set a target of an additional 100MW of renewable to be commissioned by late 1999 (90MW from wind, 7MW from biomass and 3MW from hydro). This represents an investment of up to IR£160m with grant aid of approx. IR£6.6m.

Budget

Public investment in energy efficiency measures is part of a six year programme supported by European ERDF aid. Total public investment over the six years is 39.66 MECU of which 17.16 MECU is ERDF aid. In 1997/98 the gross public investment is 5.9 MECU (source Department of Public Enterprise).

Utilities

Legislative proposal on the liberalisation of the electricity market has been published. Government has agreed wording on proposed regulatory commission. This sets out how the market is to be liberalised taking into account energy efficiency and renewable energy among other policy drivers.

Pricing

No change with regard to taxation except for minor changes to the vehicle registration tax. Existing vehicle registration tax was 22.5% on vehicles up to 2500cc and 28% on vehicles over 2500cc. The 1998 budget provided for a vrt of 22.5% on cars under 1400cc, 25% on cars between 1400 and 2000cc and 30% on cars over 2000cc.

The Finance Act, 1998, provided a tax incentive for companies wishing to invest in renewable energy projects. Company profits invested in wind, hydro, biomass and solar projects are not subjected to tax under certain restrictions. This scheme requires EU approval.

Efficiency Standards

Building regulations are mandatory since 1991, with revisions introduced in 1998. Home energy rating is to be introduced to demonstrate compliance with the revised regulations.

Other Regulation

Efficiency requirements on new hot water boilers (EU Directive 92/42EEC 21/05/92) were introduced in 1998.

Appliance labelling became mandatory in 1997/8 for dish washers and washer/dryers products.

Fiscal or Economic Incentives

The Energy Efficiency Investment Support Scheme and the Steam System Boiler Evaluation Scheme have been detailed under the national programmes heading.

ITALY

A new Italian energy policy is emerging in these very days, which is under many aspects very different from the previous one. The occasion to underline and discuss this new policy has been the Italian National Energy Conference (25- 28th of November 1998). The National Conference, which gathered over 3000 people over four days, was convened by the Government and organised by ENEA (the Italian National Agency for Energy and the Environment).

The Government took three important decisions:

- It approved and submitted to the Parliament the decree for the application of the European directive on the liberalisation of the electricity market, which is the starting point for a complete change of this sector (including a renewable energy portfolio);
- It approved and submitted to the Parliament, as a part of the Financial Law for 1999, a carbon tax which is fiscally neutral and includes several innovative features;
- It approved on November 19, through its Committee for Economic Planning (CIPE), a multi-annual plan for meeting the engagements taken with the signing of the Kyoto protocol on the reduction of greenhouse gas emissions.

The main points of the new Italian energy policy, as they emerge from the conclusive document of the National Conference issued by the Government, are the following. The basic choices are:

to increase the role of the market and of competition, not only in order to increase efficiency and reduce costs, but also to encourage new entrepreneurial initiatives and increase employment;

to promote sustainable development by addressing environmental questions, exploiting the opportunities offered by the productive system and every possible synergy between business and social interests;

to favour a voluntary approach over command-and-control methods;

to extend the decentralisation process with the involvement of all levels of government: regional, provincial and local, according to the principle of subsidiarity (i.e. do not intervene at a certain level if the intervention can be done effectively at a lower level);

to simplify legislation and procedures, leaving as much space as possible to voluntary norms;

to rely on the behaviour of citizens, seen as consumers, in order to reach, through qualification of the demand for energy and for products, the objectives of energy efficiency, quality and environmental protection;

to rebalance the North and South of Italy, in terms of infrastructures and of quality of services, also in view of a greater and more diffused entrepreneurship, with the full involvement of small and medium enterprises;

to support the internationalisation of energy companies and to extend financial markets so as to stimulate a new quality of enterprises and an improved quality of employment.

Such a scenario would not improve security of supply nor allow compliance with the Kyoto protocol. As a consequence, the Government has decided (among others) the following actions:

- In order to reach a higher degree of security of supply, to act through the instruments of market regulation so as to ensure that a quota of 40% of total energy consumption shall be covered by national sources of energy (both fossil and renewable) and by fuels deriving from a reliable market;
- To enact in the shortest times possible the European directive for the liberalisation of the market of natural gas, creating an effective open market; to complete the methane network, both in Regions (like Sardinia) that still lack it and through the extension in smaller areas not yet served; and to support the creation of at least one rigassification terminal, so as to allow further diversification of gas supply;
- To promote the increase in efficiency of the final use of energy by all necessary actions, including voluntary agreements, demand-size management, incentives for a positive role of the consumers and coherent interventions on the final prices of energy, without however endangering the competitiveness of the productive system;
- To double the contribution of renewable sources of energy by the year 2010 (from the present 7% to about 14%), according to the "White Book" prepared by ENEA for the Conference; a specified quota of renewable energy, increasing with time, has already been set for power production in the decree for the liberalisation of the electricity market (minimum 20% of the electricity distributed in Italy from the year 2001 must come from renewables);
- To improve the quality of energy services, especially in the South of Italy; to expand horizontally energy utilities or the integrated management of different services;
- To introduce externalities (including environment, security of supply and employment) in the prices of energy (starting with the carbon tax to be applied form 1999), promoting a common approach for the Member countries of the European Union;
- To improve energy and environment aspects of the transport services, following the guidelines of the Green Book on Transportation prepared by ENEA for the Conference; to promote application of telematic and information technology to reduce demand and to improve mobility; to improve public transportation services and infrastructures;
- To promote an increasing utilisation of low-environmental impact fuels in transport, such as natural gas, biofuels and electric and hybrid vehicles.

Financial interventions to achieve these objectives (where needed) will be provided; the government has taken the engagement to devote not less than 5000 billion lire (or over 3 billion US$) in the next five years for this purpose. A monitoring system for the observation of the accomplishment of the Kyoto engagements is being set up by the Government through its agencies and institutions, which will in particular monitor the performance of the voluntary agreements.

Industry

Programme Description	Status	Impact
Law 448/98 reorganise the fiscal burden on Energy on the bases of: - Energy content of fuel - CO_2 emission derived from combustion or due to the production of the Energy vector The novelty is that the increase of fiscal chargers (4500 MECU/Y by 2005) will counterbalance the reduction of other contribution, mainly social share of manpower cost	Approved 12/1998	Fiscal charge for the period 1998/2005 will change as follow: - from 46 to 129 EURO/ 1000 kg of high sulphur oil - from 23 to 62 EURO/ 1000 kg of low sulphur oil - from 15 to 21 EURO/ 1000 m^3 of natural gas Fuel taxed for first time: - 21 EURO for 1000 kg of cool - 30 EURO for 1000 kg of coke - 16 EURO for 1000 kg of orimulsion Fuels used for electricity production now pay tax, some have a reduced charge - 4 EURO for 1000 m^3 of gas - 16 EURO for 1000 litres of diesel oil - 21 EURO for 1000 kg of fuel oil Fuel utilised in cogeneration plants pay only 30% of indicated tax
Law 449/97 established a taxation on the pollution from large plant (over 15 thermal Megawatt)	Operating since 1988	This tax is maintained: - 53 EURO for 1 ton of SO_2 - 105 EURO for 1 ton of NOX
Taxation on electricity consumption (from any sources) is maintained also after law 448/97		- 17 EURO for 1000 kWh for consumption up to 200.000 kWh/months - 7 EURO for consumption over this value

Transport

Programme Description	Status	Impact
Agreement between FIAT and Ministry of Environment, for development of low consumption vehicles	Since 1998	FIAT is engaged goal on fuel consumption as follow: - at 2010 the average production < 5,5 litres/100km - at 2005 a model in production with 3 litres/100km - at 2000 a large diffusion model with 4,5 litres/100 km On new technology: - an integrated hybrid vehicle on the market at 2002 - platform for used car recycling.
Investment plan for expansion of the railway and the construction of high speed lines	Since 1998	New metro line on new high speed railway, new tunnel for the Appennini passage
Financial incentives to replace vehicle older than 10 years through fiscal reduction (1000 ECU) and an equivalent producer discount	From 1997 to April 1998	1.140.000 cars were replaced
Financial incentives to replace vehicles older than 10 years with a new one of lower size, through a fiscal reduction (600 ECU) and an equivalent producer discount	Since May 1998	
Law 448 (see industry)	Since 1998	Fiscal charge for the period 1998/2005 will change as follow: - from 572 to 594 EURO/1000 Litres of petrol - from 348 to 468 EURO/1000 Litres of diesel oil - from 0 to 51 EURO/1000 m^3 of natural gas - from 167 to 206 EURO/1000 kg of liquid gas (LPG)

Residential

Programme Description	Status	Impact
Law 448/98 reorganise the fiscal burden on Energy on the bases of: - Energy content of fuel - CO_2 emission derived from combustion or due to the production of the Energy vector The novelty is that the increase of fiscal charges (4500 MECU/ Y by 2005) will counterbalance the reduction of other contribution, mainly social share of manpower cost. Minor part will counterbalance redaction of taxation of heating oil in mountain region and incentives for local district heating based on biomass.	Approved 12/1998	Fiscal charge for heating application in the period 1998/2005 will change as follow: - from 25 to 218 EURO/ 1000 kg of low sulphur oil - from 370 to 467 EURO/ 1000 litres of light heating oil - from 200 to 208 EURO/ 1000 m^3 of natural gas
Law 449/97 allow a fiscal reduction of 41% of the costs (VAT included), related to building restructuring performed during 1998 and 1999. The reduction is applicable only to building onerous who have to pay personal tax (IRPEF) and is subdivide into 5 or 10 annual rates.		The reduction is applicable for costs limited to 77468 EURO/building units/ person/year. About 200.000 request were presented during 1998.

Tertiary

Programme Description	Status	Impact
Law 448/98 reorganise the fiscal burden on Energy on the bases of: - Energy content of fuel - CO_2 emission derived from combustion or due to the production of the Energy vector The novelty is that the increase of fiscal chargers (4500 MECU/ Y by 2005) will counterbalance the reduction of other contribution, mainly social share of manpower cost. Minor part will counterbalance redaction of taxation of heating oil in mountain region and incentives for local district heating based on biomass.	Approved 12/1998	Fiscal charge for heating application in the period 1998/2005 will change as follow: - from 25 to 218 EURO/ 1000 litres of low sulphur oil - from 370 to 467 EURO/ 1000 litres of light heating oil - from 200 to 208 EURO/ 1000 m^3 of natural gas

PORTUGAL

Institutional changes

In the year 1998, the main institutional change concerned the creation of 5 new energy agencies. Within this process, another two local agencies got their permission, but are expected to be created only in 1999.

New Agencies	*Region*	*Name*
ARAVE	Vale do Ave	Agência de Energia e Ambiente do Vale do Ave
ARECBA	Alentejo	Agência Regional de Energia do Centro e Baixo Alentejo
AEPB	Planalto Beirão	Agência de Energia do Planalto Beirão
AREALIMA	Vale do Lima	Agência Regional de Energia a Ambiente do Vale do Lima
AMERLIS	Lisboa	Agência Municipal de Energia de Lisboa
Agencies to be created		
AGNEAL	Almada	Agência Municipal de Energia de Almada
ENERGAIA	Gaia	Agência de Energia e Ambiente de Gaia

Measures and programmes

The main change in the Portuguese measures and programmes was the publication of the decree-law 118/98, in May 7th , enacting the *Regulamento dos Sistemas de Energéticos de Climatização em Edificios* (RSECE), the regulation for HVAC systems intending to regulate thermal power of the systems to be installed in buildings. It applies when the cooling power is higher than 25kW or when the aggregate cooling and heating thermal power adds up to more than 40 kW. It also imposes some measures at the design stage, in order to improve the energy efficiency of the HVAC system. In particular, it limits the use of Room Air Conditioners (RAC) since it obliges the use of central heating or cooling systems, whenever possible.

Regulation about efficiency requirements, transposing European directive 92/42EEC, applying to new hot water boilers fired with liquid or gaseous fuels reached the end of the transitory period in 1998.

Other regulation, applying to new refrigerators and freezers, transposing European directive 96/57EEC, was published in 1998, but the end of the transitory period will occur only in 1999.

Programa Energia, the main national programme for energy efficiency, continued as scheduled to pursue the proposed 5 year goals, mainly financing gas utilities expanding the natural gas infrastructures, but also enhancing the use endogenous renewable energy sources, promoting and supporting of investments in energy efficiency.

Budget

It is not available yet reliable data on the overall budget for energy efficiency in 1998, but it is fair to assume that the overall budget suffered no significant change in the last year, as there were no major changes in official measures and programmes. A greater change is expected when Programa Energia terminates, in 1999.

Taxation

There were no significant changes in the tax structure in 1998.

The NETHERLANDS

Institutional changes

The Ministry of Economic Affairs has founded the **Project Bureau for Renewable Energy**, as had been announced in the Renewable Energy Action Plan of March 1997. The Project Bureau is meant to stimulate the development and use of renewable energy as the central point for parties that want to participate in renewable energy projects and as central information point. The Project Bureau is a foundation. The Ministry of Economic Affairs participates for 50%, while equal shares of 25% are taken by the organisations of electricity producers (Sep) and energy distribution utilities (EnergieNed).

National programmes

Goal set for greenhouse gas emission reduction: -6% for the Netherlands

In June 1998 the European Environmental Council in principle agreed on the EU burden sharing of greenhouse gas emission reduction. The Netherlands agreed on 6% emission reduction in 2008-2010 compared to 1990, on the conditions that a European energy efficiency policy will implemented, and a carbon/energy tax will be established by 2002 and flexible international instruments may be applied. The Dutch government will work out the extra measures to reach this emission reduction in an Act that will appear at earliest towards the end of 1998.

Memorandum on Energy Saving (Energiebesparingsnota)

The Dutch government published a Memorandum on Energy Saving in April 1998, containing proposals for extra energy saving policies till 2010, in order to reach 10 to 15 Mtons less CO_2 emissions. This means that the energy efficiency growth rate has to rise from 1.6% to 2% per year. It was estimated that yearly 3 to 4 billion guilders will have to be invested in energy efficiency, of which the government will have to pay 600 million guilders per year. The Memorandum did not aim at making decisions on measures and budgets. Because elections were at hand when the Memorandum was published, these decisions were left for the next government to take.

Taxation

In the Government Agreement of the new government, a doubling of the energy taxes is foreseen. Also measures in the built environment are considered, like an energy performance standard for locations, and an energy performance test for existing houses. An action plan is to be published in the spring of 1999.

Publicity campaign for renewable energy

The Ministry of Economic Affairs launched a publicity campaign for renewable energy in September 1998. The campaign is meant to enhance the knowledge and the support of renewable energy. The communication is by television, radio, newspapers and a leaflet. The campaign aims at citizens, but also on decision makers in the local and regional authorities and in building projects. The campaign will last for two years.

Budget

Total government expenditure in energy policy in 1999

The total government expenditures on energy policy are estimated to amount to 674 million guilders in 1999. Expenditures in 1998 amount to 660 million guilders.

CO_2-reduction plan approved by European Commission

Two large subsidy programs can be executed, now that the European Commission has approved of the so-called CO_2 reduction plan. The Dutch government reserved 1 billion guilders for subsidies in 1997 for projects that reduce CO_2 emissions. Tenders had already been given out and parties had been selected, but before the money could be given to the selected parties, the approval of the EC had to be awaited. For the large part of the projects this approval was given. The money is granted in two subsidy programs of about 500 million guilders each: the Decree Subsidies CO_2 Reduction Plan of the Ministry of Economic Affairs and a subsidy for Non Industrial Surplus heat Infrastructure (NIRIS) of the Ministry of Environment.

Utilities

New electricity law with obligation to stimulate energy efficiency and renewable energy

On 1 August 1998 a new electricity law, the Electricity Law 1998, partly came into force. The new law will liberalise the Dutch electricity market. With respect to energy efficiency the Electricity Law contains an article that says that both producers and distributors of electricity (> 10 GWh) have the general task to strive for renewable energy and energy efficiency and have to report on this every two years. A directive has been included for the back supply to the electricity grid of renewably produced power. On the basis of the new law, the Minister of Economic Affairs can oblige the consumers of electricity to take a minimum share of renewable electricity, by means of a system of green certificates.

Otherwise, utilities presently have tasks in energy efficiency and renewable energy that have been set in the Environmental Action Plan (MAP) agreements between government and distribution sector, made in 1991 and renewed in 1994 and 1997.

The part of the new law that handles on prices and tariffs is not yet in force. The old law, the Electricity Law 1989, still holds for the tariff system. It is expected that this will not be replaced by the new law before 1999.

Association of Energy distributors have started experiment with Green Labels

A trial for a Green Label System was launched by the Dutch association of energy distributors, EnergieNed, in January 1998. For the first two years the trade and creation of Green Labels will be recorded, but no binding targets have to be met. Creation of Green Labels is done by producing 10,000 kWh renewable electricity, and have this registered under a serial number at the nation-wide registration office. This office publishes information on the production and trade at the Green Label website, where also labels can be bought and sold.

The first binding target is set for the year 2000. In this year, the distribution companies together are to produce 1.7 billion kWh renewable electricity. The quota of renewable electricity that is allotted to each of the distributors will be based on the volume of past sales and will have to be met by handing over Green Labels, so it does not have to be produced by this distributor itself.

Green electricity is intended to be free of the Regulatory Energy Tax, this exemption is approved by the European Commission.

Efficiency Standards

Sharpening of Energy Performance Standard for houses

The Energy Performance Standard (EPN), that was introduced in December 1995, for houses has been sharpened. This regulation sets a demand of the integral energy use of new buildings, expressed as the Energy Performance Coefficient (EPC). For houses and for tertiary sector buildings different EPC values hold. The EPC for houses has been lowered from 1.4 to 1.2 by January 1998, as had already been announced from the introduction. This means that a fictional, average new house has to have a primary energy demand of 1200 m^3 natural gas equivalents or less. Sharpening of the EPC for houses to 1.0 (equalling 1000 m^3 natural gas) is foreseen in 2000.

Other regulation

New Long Term Agreements

Two new Long Term Agreements have been agreed on between the Ministry of Economic Affairs, the energy agency Novem and branch of trade organisations, while other have been prolonged. The new branches are bulb growing and mushroom farming. With these the total of LTA's adds up to 29 industrial and 11 other branches.

Fiscal or economic incentives

New subsidies: Energy Investments for Non Profit sector, Cleaner Producing for SME's

The subsidy measure Energy Investments for the Non Profit Sector (EINP) was introduced in the course of 1997 to grant subsidies to the non-profit sector investments in energy efficiency. Commercial companies may use the Energy Investment Allowance (EIA), introduced in January 1997, to subtract the investments from their corporate tax. Since non-profit institutes do not pay this tax, they cannot use the EIA. The subsidy budget was 15 million guilders in 1997 and 20 million guilders in 1998. In 1998 the EINP was extended to wind energy for the agricultural sector, with an amount of 12,5 million. They do pay corporate tax, but the Inland Revenue do not consider the buying of a wind turbine an investment that may be subtracted. For wind energy 12,5 million guilders is reserved.

For the target group Small and Medium Sized Enterprises a program Cleaner Producing (Schoner Produceren) has been started, that also contains two subsidy measures: Information and screening and Energy efficiency and environmental advice. The budget for the first subsidy published in August was 1,7 million guilders.

NORWAY

Institutions

The objective and policy of governmental energy efficiency activities in Norway is to ensure rational use of energy resources. The energy efficiency policy set down by the Ministry of Petroleum and Energy is accomplished by the Norwegian Water Resources and Energy Directorate (NVE). An energy expert panel completed a foresight study (NOU 1998:11) this summer, and proposed to establish a separate directorate for energy efficiency, not necessarily within NVE.

20 Regional Energy Efficiency Centres throughout Norway, and Operating Agents organising networks for energy use in buildings and industry have been established to facilitate this work. The Industry Network increased memberships to 550 industrial companies in 1998 and the recently established Building Network doubled memberships from 15 to 30 during 1997.

There are also Operating Agents for introduction of energy efficient products as well as campaigns and information.

Measures and programmes

In 1988 the discussions between NVE and the energy intensive industry (PIL) on voluntary agreements was continuing.

A major campaign promoting self energy audits in the residential sector was carried out successfully.

The Information Centre for Energy Efficiency (OFE) carried out 134 events with a total of 2300 participants in 1997. The direct governmental support to these events are withdrawn from 1998, nevertheless the number of participants increases, indicating further need for such high quality information.

Budget

The public budget for energy efficiency and new renewables was doubled from 98 to 193 M NOK from 1997 to 1998. The proposed budget for 1999 is 270 M NOK.

These funds include promotion of flexible (switching between electricity and other energy sources) heating distribution systems. A large part of the total is dedicated to bioenergy. New in 1999 is that also wind turbines will be given investment subsidies. The subsidy will be in the range of 15-20%.

Taxation

Parliament has decided that wind power, smale scale hydropower, heat pumps and boilers for bioenergy should be exempted from the general 7% investment tax from 1998. Furthermore, wind power should also get a subsidy worth 50% of the 5,75 øre/kWh electricity tax (1998).

The government has put forward proposals in the Parliament twice to increase the genereal electricity tax, but the motions have been voted down. But a proposal for removing a tax exempt directed to users with electrical boilers with backup of other energy sources, was passed in connection with the 1999 budget.

SPAIN

Institutional changes

Nationally, the following changes have taken place at ministerial level. The former office of the Secretary of State for Energy and Mineral Resources has, following Royal Decree 2100/1998 of 25 September 1998, been renamed the office of the Secretary of State for Industry and Energy. This includes, among others, the functions in the energy field that were previously assigned to the office of the Secretary of State under its former name.

IDAE, the State Agency with competence over Energy Savings and Efficiency, has not undergone any significant change in institutional status. Its strategy now places greater emphasis on promoting energy saving, energy substitution and renewable energy, whilst not neglecting its activities in relation to cogeneration. In this latter area of activity there has been a reorientation towards more innovative projects.

As concerns Regional or Local Agencies, in addition to the definitive start-up of ASTURENER, the Asturian energy agency, the forthcoming creation of three new agencies with backing from the European Commission's SAVE programme is worth mentioning. These agencies are: ENRECAM, the regional agency for Castilla–La Mancha; ECET, the local agency for Talavera de La Reina; and the third, a local agency for Valencia. These first two agencies belong to the Autonomous Region of Castilla–La Mancha and the third to the Autonomous Region of Valencia. These new contributions mean that 11 of Spain's 17 Autonomous Regions have some kind of regional or local energy agency.

Measures and programmes

The Spanish energy sector began 1998 with the coming into effect of the new Law on the Electricity Sector *(Ley del Sector Eléctrico)*. This marked the start of the process of liberalization of the energy sector and opening up of the market to free competition. The Law lays down the operational basis for the functioning of the electricity system and defines the time-scales, measures and safeguards which will be in force during the transitional period until the objective of total liberalization of the electricity market has been achieved.

Within the framework of this new Law, Royal Decree 2818/1998, of 23rd December 1998, lays down the new conditions under which the so-called 'special regime' is to operate. This includes cogeneration activities and electricity generation with renewable resources. These areas have been the object of regulation since 1980.

The hydrocarbon fuels sector, which basically comprises the petroleum and gas industries, is also advancing towards the process of liberalization through the new Law on the Hydrocarbons Sector *(Ley del Sector Hidrocarburos)*, passed in October 1998. In the field of exploration, research and exploitation of hydrocarbons, this law has created the role of the Operator to represent owners as a group before the administration. The refining and transport of petrol, and the distribution and marketing of petroleum products, including the supply of liquefied petroleum gases, have received a stimulus towards liberalization, which the new Law envisages extending to the whole of the hydrocarbons sector. In the gas sector the liberalization process is advancing, whilst endeavouring to maintain a uniform basic approach in the way both the natural gas and electricity systems are treated.

As regards energy efficiency and renewable energy, monitoring of activities at national level in the period from 1991-1997 has revealed projects and associated investment to a value of 1.1 billion pesetas, with public support accounting for close to 10% of this figure.

In energy terms savings of 2.5 Mept were achieved during the period 1991-1997. During the same period 1.9 Mept of other energy sources were replaced by gas, 306 kept were replaced by renewable energy, 2681 MW of power was installed in cogeneration systems and 2318 MW in renewable energy systems. The environmental impact of these actions was a reduction of 17998 kt of CO_2, 56.5 kt of NO_X and 427.3 kt of SO_2.

Overall there has been considerable activity in the cogeneration area: during the period 1991-1997 there was a significant increase in power installed. Among renewable energies particularly noteworthy is the progress made by wind power: to the 467 MW installed between 1991-1997 a further 535 MW were added during 1998.

The line of subsidies from the Ministry for Industry and Energy (MINER) to energy-conservation projects applying Ministerial Order PAEE is one of the important actions intended to achieve more rational and efficient use of energy. This Ministerial Order in 1997 approved the regulatory basis for the granting of subsidies during the period 1997-1999. A substantial modification introduced by it with respect to the previous situation was its adaptation to Community Directives on state aid and the development of energy trends.

In 1998 the new strategic focus begun in 1997 for programmes of action was consolidated. Voluntary Cooperation Agreements have continued to be signed with certain consumer sectors and the territorial distribution of the PAEE subsidies has been established in favour of Autonomous Regions by applying objective criteria and the subsequent transfer of the relevant funds so as to enable the exercise of their competencies.

Actions relating to SMEs have been given fresh momentum thanks to the setting up of a programme specifically promoting the rational use of energy and renewable energy in small and medium-sized businesses. Within this IDAE-FEDER strategic action is envisaged the management and financing of turnkey projects in SMEs located in Objective 1 regions, with an estimated budget of Pta11,300 million during the period 1997-2001.

In 1998 work began on developing the instruments adapting Spanish law to the Community Directive on Building Labelling and Certification, and on the revision of the Basic Building Standards (*Norma Básica de Edificación* - NBE).

Finally, the energy dimension of Climatic Change and the setting up of activities aimed at the cohesion of Energy Efficiency policy with the national strategy for greenhouse gas emissions has provided impetus to the work of analysis and energy prospecting in order to support, through the so-called National Climate Council, the tasks which are to form a part of this strategy.

Budget

Public national budgets (subsidies from programmes other than TPF-type financial aid etc.) earmarked for the improvement of energy efficiency came to a total of Pta10,982 million in 1997. A similar amount is predicted for 1998. These amounts represent the money from the Central Administration and the Administrations of the various Autonomous Regions provided for projects and actions whose final objective is the improvement of the energy efficiency of the various socio-economic sectors. In the sectorial division of budgets dedicated in 1997 industry stands out with 39% of receipts. This was followed by the residential sector with 33%. The commercial and service sectors received 26% of the budget, whilst the transport sector continues to receive much smaller amounts.

SWEDEN

Institutions

In 1998 the new energy policy decided by the Parliament in 1997 came into force.

On the 1st of January a new national agency was established. The National Energy Administration, former NUTEK, is Sweden's national authority on issues regarding the supply and use of energy. The Administration was located in Eskilstuna (114 km west of Stockholm) as of September 1998.

The Administration's main task is to promote a safe, efficient and environmentally sustainable supply and use of energy. It does so by supporting research on renewable energy sources and technology procurement of energy-efficient products and by providing investment support for the development of renewable energy. The Administration also serves a supervising function as monitoring authority of the recently deregulated electricity market. The Department for Structural and Market Analysis provides analyses of the linkages between energy, the environment and economic growth. The annual turnover is SEK 1 billion and the number of employees is approximately 160.

One of the elements of the energy policy decided in 1997 is that government support is given to municipality advisory services. More than 270 municipalities have employed an energy advisor within this programme during 1998. Additionnaly yet one other regional energy agency has been established due to the SAVE programme. The total number of SAVE financed regional agencies is thereby nine.

Measures and programmes

The programme for efficient use of energy continues to be based on support for technology procurement and demonstration of new technologies. Financially technology procurement and information has been separated into two different budgets. There is also a separate budget for testing of consumer equipment. A new programme for municipality advisory services has been set up. Subvention schemes for measures for the reduction of electricity consumption in household are also in place since mid 1997.

Budget

The budget for energy efficiency programmes are as follows (decided in 1997).

Measures aimed at more efficient energy use (5 year):	Million SEK/year
• information and training	12 (increase in budget)
• procurement of energy-efficient technology	20 (decrease in budget)
• municipal energy advisory services	50 (increase in budget)

Technology development for the energy

system of the future (7 year):

- energy technology fund — part of 124 (constant budget)
- introduction of innovative energy technology — part of 230 (increase in budget)

UNITED KINGDOM

Institutional changes

There have been no major organisational or institutional changes related to national energy efficiency management in the UK during 1998, although there has been a significant strengthening in the area of policy analysis and government consultation during the year. There has also been increasing emphasis in regional government on organising schemes under the Agenda 21 Protocol.

The major energy efficiency programmes in the UK remain as follows:

- The Energy Efficiency Best Practice Programme
- Home Energy Efficiency Scheme
- Energy Saving Trust activities

Measures and programmes

1998 has seen activity across a wide range of energy related issues. Major areas affecting energy efficiency and energy supply are as follows:

- A new policy on energy sources for power generation for the future (including two public consultation exercises) set out in a Government White Paper, which introduced a major programme of reform aimed at achieving more effective competition in the UK electricity market. It is also aimed at preserving security and diversity of supply by tackling the distortions in the electricity wholesaler market - the 'Pool' - in England and Wales.

- A review of Utility Regulation, published in a Green Paper and subsequent responses to consultations, which has begun further consultation on a range of matters including changes to the duties of UK Regulators (to protect the interests of consumers) and separating the licensing of electricity supply and distribution. Powers are also taken to offer statutory guidance to the Regulators on the UK Governments' social and environmental objectives.

- The appointment of a new Gas Regulator, who will also take up that role with respect to electricity in January 1999 and who, when legislation has been enacted, will formally become the first UK Energy Regulator.

- The commencement of gas supply competition in the domestic sector, together with the beginning of the role- out of electricity supply competition in September 1998.

- The beginning of the 5th round of the Non-fossil Fuel Obligation Order (NFFO) to promote the further development of renewable energy - this is the largest order ever and with the lowest prices so far.

- A Review of policy in support of renewable energy, to assess the feasibility of sourcing 10% of electricity from renewables by 2010. Conclusions from the Review will be published in 1999.

- The UK Government played a lead role in the UN Framework Convention on Climate Change Conference at Kyoto last year and subsequently agreed within the European Union our share of the EU's target for reducing greenhouse gas emissions. A Consultation Paper has now been published on options for meeting the UK commitment.

- During the UK Presidency of the EU, the Directive on gas liberalisation was negotiated and debate was begun about greater opening of the European electricity market and the contribution from renewable energy.

- A Review of policy in support for clean coal technology, including the underpinning of the scientific contribution through R&D.

Now that there is no longer a monopoly of gas or electricity supply, the market is becoming increasingly customer driven rather than set by the energy suppliers, as it was in the past. In the short term, this will probably only result in lower prices, but in the longer term, it is likely that different forms of marketing will occur e.g. the provision of Energy Services and home comforts, rather than just the supply of fuel and energy. This approach could begin to make new connections between improved quality of life and energy consumption, by allowing supply companies to put energy efficiency measure into customers homes or businesses and be repaid in the bill.

Another form of market 'branding' is already apparent (the so called 'affinity marketing' arrangement), in which organisations with an existing customer base makes an arrangement with fuel suppliers to sell to its customers at an advantageous price. Such companies are so far based on trade union membership (Union Energy) and age (SAGA holidays). However, there is now also talk of major insurance companies also becoming involved.

A 'fair deal' approach is also being provided for consumers. It is intended to make protection of their interests the new primary duty of the Utility Regulators, and legislation will be brought forward to that effect. Protection will be provided for disadvantaged groups such as the disabled and chronically sick. Wider environmental and social issues are also to be take account of in future Regulators decisions.

For both producers and suppliers the Review of energy sources Government White Paper pointed out the distortions in the electricity market set up by previous UK Administrations, which tended to drive out of the business perfectly sound coal fired power stations in favour of more expensive gas fired ones. This kept consumer prices higher than they need actually be. For all producers and suppliers it is intended that the market should work as a true market, transparent in operation and open equally to all.

Fuel poverty is being addressed as a real issue, and a high level of resource will be required to tackle the problem. The UK Government has made a start by increasing by £150m the funding available for fuel poverty from the year 2000, and an inter-departmental group of officials is working with consumer organisations and others to consider how these resources might best be targeted. The Governments' release of capital receipts to Local Authorities for projects such as housing, and with particular attention to energy efficiency measures, will also provide significant benefits for some areas. Fuel poverty is not simply a matter of people not having enough money, but arises from a complex combination of income and housing which is energy inefficient (old, poorly maintained, badly designed or built, or simply poorly

insulated). Tackling fuel poverty by combined policies, which blend energy use and energy conservation is crucial.

The post 2000 target agreed at Kyoto last December of an 8% reduction in emissions of a basket of six greenhouse gases for the European Union as a whole in the period to 2008-2012, and which translates under EU burden sharing arrangement as a 12.5% reduction for the UK, is seen as not an end in itself. It is simply a milestone on the way to yet greater reductions. Ultimately, it will be necessary to look at step changes in the way we use energy and at totally new industrial processes. The UK Governments' national goal of a 20% reduction in emission of carbon dioxide by 2010 should be seen in this longer term context. It is not a matter of doing the minimum necessary to meet a legal commitment, but of putting the UK in the best position to deal with the future.

The UK Climate Change Programme Consultation Paper was published in October 1998. Improving energy efficiency is an essential component of the UK response to environmental pressures and will continue to be a re-current, and increasingly important theme, in years to come.

A Report produced by Lord Marshall on how the UK Government might use economic instruments to help business contribute to meeting the challenging international climate change obligations is now also under detailed consideration by the Government.

Budgets

The planned budget spend by the UK Department of the Environment, Transport and the Regions during 1998 was similar to that in 1997 (£109m). This excludes additional activities by the Energy Saving Trust and the Department of Trade and Industry in the UK.

Electricity utilities also have available approximately £25m per annum for energy saving activities.

Taxation

There is a continued increase in the level of tax on motor fuels, which is intended to provide a real increase in private transport fuel costs for the foreseeable future.

Whilst no major changes in taxes on other fuels have been evidenced during 1998, the outcome of the Lord Marshall Report is suggesting further fuel taxation with recycling of the revenue to energy efficiency activities. The details of future possible schemes are still under discussion.