

# COMMISSION OF THE EUROPEAN COMMUNITIES

SEC(92) 724 final

Brussels, 9 June 1992

## COMMUNICATION FROM THE COMMISSION

Technical harmonization and standardization in the energy sector

**Communication  
from the Commission to the Council**

Technical harmonization and standardization in the energy sector

1. Subject

The purpose of this communication is to:

- explain the Commission's approach to standardization in the energy sector to the Council;
- inform the Council of progress on the standardization of energy products and equipment for the production, transport and distribution of energy products;
- present to the Council the Commission's strategy for future work with a view to completing the internal market.

2. Introduction

Completion of the internal market is inconceivable without an internal market for energy. Energy is an essential component of all economic activity within the Community.

Barriers arising from the lack of technical harmonization, the disparity of binding national rules and rules concerning installation or the lack of any standard continue to fragment the market.

The basic characteristics of European standardization make it technical harmonization's most important tool in ensuring the free movement of products and their use throughout the Community. Unlike national technical rules, which impose binding technical specifications within a single country, European standards lay down voluntary technical specifications drawn up by consensus among all parties concerned at European level.

However, the application of certain European standards can be made obligatory by Community legal instruments.

As a method of defining technical requirements, standardization has the following advantages:

- it increases transparency, enabling all interested parties to participate;
- it combines the advantages of democracy and the capacity to reflect the state of the art;
- it enables the costs of producing technical specifications to be transferred from the public sector to the private sector and reflects the technical realities of the market better than regulation.
- it will help to improve the level of environmental protection, and energy safety and efficiency and to stimulate the development of advanced energy technologies.

Finally, European standardization is also seen as a tool for exploiting all the economic advantages of the internal market and increasing industrial competitiveness. It reduces costs for producers and distributors and stimulates greater competition to the advantage of consumers. It will therefore have a positive impact, particularly on small and medium-sized firms.

Thus European standards not only serve to remove regulatory barriers to trade, they are also an economic objective in themselves.

European technical legislation, drawn up hitherto for the purposes of completing the European single market, concerns the harmonization of binding national rules, is limited to defining health and safety requirements, which remain a matter for the public authorities, and refers to European standards for the technical specifications.

The full application of European standards can therefore, in some cases, require harmonized Community legislation in order to remove national regulatory barriers.

The Commission is also aware of the need to ensure the safety, health and economic interests of the consumer with regard to:

- the production, transport and use of petroleum products,
- apparatus and equipment for the production, transport and distribution of electricity,
- apparatus and equipment for the transport and distribution of gas,
- nuclear energy production.

3. Standardization and the internal market for energy

A. Objectives

The Community energy policy objectives for 1995, adopted by the Council in September 1986,<sup>1</sup> refer to the need for "greater integration, free from barriers to trade, of the internal energy market with a view to improving security of supply, reducing costs and improving economic competitiveness". They also refer to the need for "a search for balanced solutions as regards energy and the environment, by making use of the best available and economically justified technologies and by improving energy efficiency, as well as taking account of the desire to limit distortions of competition in the energy markets by a more coordinated approach in environmental affairs in the Community".

On this basis, the Commission working document on the internal energy market published in May 1988<sup>2</sup> describes the general problems of integrating energy into the single market, draws up an inventory of existing obstacles and identifies priority programmes for the completion of the internal market.

These priorities include eliminating technical borders by harmonizing technical rules and standards. The document shows how different national rules and standards obstruct the completion of the internal market in general, and in the energy sector in particular. These differences concern the manufacture of both equipment used by the energy industry and equipment intended for energy users.

One of the obstacles listed in the inventory is differences in the specifications for petroleum products which make it necessary to divide up production in line with the requirements of the various national markets.

The first progress report, which included proposals for the direction of future work, was the subject of a Commission communication dated 18 May 1990.<sup>3</sup>

The objectives proposed include improving competitiveness, which requires standards and technical rules to be harmonized, thereby reducing costs and supplementing the action already taken.

Among the areas identified for future work, the progress report mentions:

- the reduction of technical disparities between the characteristics of sources of energy used in the various Member States;

1 OJ No C 241, 25.9.1986.

2 COM(88) 238 final, 2.5.1988.

3 COM(90) 124 final, 18.5.1990.

- the harmonization of the various decision-making procedures for the certification or type approval of equipment;
- the removal of barriers resulting from varying levels of environmental protection.

B. Major impetus

- (a) On 7 May 1985 the Council adopted a resolution concerning a new approach to technical harmonization and standardization.

The new approach restricts legislative harmonization to the adoption of the essential requirements with which products must comply by means of directives based on Article 100 of the EEC Treaty. European standards institutes are then given a remit to draw up technical specifications.

The following are examples of new approach and other directives concerning energy products and energy equipment which have recently served as the basis for the elaboration of European standards: Council Directive 89/336/EEC (electromagnetic compatibility); Council Directive 87/416/EEC (lead content of petrol); Council Directive 90/396/EEC (appliances burning gaseous fuels); Council Directive 89/392/EEC (machinery safety).

- (b) Other progress in the field of standardization includes a number of standardization remits which the Commission has given to European standards institutes in fields where harmonization was clearly needed. A standardization remit is a request by the Commission for the preparation of one or more European standards considered useful with a view to the harmonization of the technical characteristics of a product or made necessary by a reference to European standards in Community directives.

For example, European standards currently under preparation will define the characteristics of oil products, test gases and electricity quality.

- (c) More generally, standardization requirements for energy equipment have been identified, particularly in two reports drawn up at the Commission's request by the European standards institutes CEN and CENELEC, published in October and December 1989 respectively.

These reports cover the following energy sectors: transport and distribution of gas and heat, exploration and extraction of gas and oil and solid fuels and transport and distribution of electricity.

These reports were drawn up in the framework of Directive 90/531/EEC on the procurement procedures of entities operating in the water, energy, transport and telecommunications sectors. The Directive obliges such entities to refer to any relevant European standards in their general documents and tender specifications for all contracts. This obligation has given rise to much standardization work which will be examined below for each sector.

C. A diversified approach

Notwithstanding the progress achieved so far, the harmonization of technical rules and standardization must be developed further, both to ensure the free movement of energy products and energy equipment and to exploit to the full the resulting economic, environmental and safety advantages.

The technology used varies greatly from one energy sector to another, and there are marked differences between the various stages (production, transport, consumption). For this reason, the means of achieving greater technical harmonization and standardization in the energy sector have hitherto been and are likely to remain diversified:

- preparation of new European standards not explicitly required by Community legislation. Requests for the preparation of such European standards must come primarily from the parties directly concerned, but where necessary can also take the form of standardization remits. Should such standards prove insufficient to ensure free movement, legislation would be considered;
- Community directives harmonizing sectors where standardization is blocked by national measures which are legally binding or effectively compulsory;
- specific action programmes for priority energy objectives including a standardization aspect.

Each energy sector therefore needs to be looked at separately. The progress of harmonization and standardization is examined in greater detail in the annex. A brief summary of progress and the strategy for future action are set out below.

4. Energy sectors

A. Oil

(a) Quality of petroleum products

In 1984 the Commission gave CEN a remit which resulted in the adoption in 1987 of European standard EN 228 for unleaded petrol.

In 1988 the Commission gave CEN a further remit for the preparation of 5 new European standards concerning unleaded petrol (Euro-super 85/95) supplementing EN 228, substitute fuels (two standards), liquefied petroleum gas for motor vehicles and diesel. These five new ENs should be finalized in 1992.

No European standardization in the form of product ENs is currently under way, other than those concerning energy efficiency referred to below.

However, problems remain, largely for the following reasons: (i) the lack of specifications for a number of products at Community level has prompted certain Member States to introduce autonomous national legislation; (ii) the new environmental directives lay down requirements which involve changes in both engines and fuels.

The Commission therefore proposes to adopt a comprehensive approach which takes account of the links between fuel quality, engine technology and exhaust emissions in order to meet the new requirements at minimum cost, by means of either Community rules or voluntary standards.

(b) Oil and gas exploration and production equipment

Oil and gas exploration and production equipment is covered by various Community directives including the Directive on public procurement, which makes it compulsory for tender specifications for procurement contracts to refer to existing European standards or other standards in established use in the Community.

The report on standardization requirements drawn up by CEN in October 1989 noted the use of standards laid down by the American Petroleum Institute (API) and recommended their transposition into European standards.

A number of practical problems stand in the way of such transposition. CEN has set up an ad hoc working party to define the standards which will be available on 1 January 1993, the methods to be used and the other European standards to be prepared.

The Commission will take account of the particularly close link in this sector between European standardization and international standardization. Excessive European standardization would be artificial.

(c) Oil refining and distribution equipment

Obstacles to the free movement of such equipment remain. The Commission will put forward practical proposals which take account of the needs expressed inter alia by Europaia.\*

B. Electricity

(a) Electricity quality

At the Commission's request, CENELEC is preparing a European standard aimed at harmonizing the physical characteristics of low- and medium-voltage electricity.

A new EN should be ready during 1992.

The Council Directive on electromagnetic compatibility<sup>4</sup> is the legal basis for the standardization remit. However, it does not make reference to the future standard compulsory. Member States should reduce their regulatory requirements by referring to the standard. Should the standard fail to gain wide acceptance, Community legislation making reference to it compulsory could be considered.

(b) Electricity generating equipment

A CEN/CENELEC Joint Task Force was set up in 1990 to draw up an inventory of existing standards in this field, identify needs for additional standards and propose priorities. The Commission is currently examining a proposal for a study of industrial requirements so that a detailed programme can be drawn up by 1993.

(c) Electricity transport and distribution equipment

The CENELEC report on standardization requirements published in 1989 lists 320 European standards published or about to be adopted which can be referred to in procurement procedures under the public procurement Directive. The report identifies about a hundred items for which standards need to be supplemented or drawn up.

CENELEC has set up a special committee - the Public Procurement Coordination Committee - to manage the work programme.

\* Europaia is a grouping of European oil companies including BP, Conoco, Saras SpA, Mobil Europe, Dea Mineraloel, ENI, Total, Cepsa, Exxon, Repsol, Petrofina, Texaco, Dea and Elf.

<sup>4</sup> OJ No L 139, 23.5.1989, p. 19.



Although its budget measures are limited, the Commission intends to encourage and accelerate implementation of this programme, which is aimed at helping to complete the internal market in this sector.

C. Gas

(a) Gas quality

In 1989 the Commission gave CEN a remit for the standardization of appliances burning gaseous fuels. This remit covered the preparation of 54 ENs, one of which was to define the types and pressures of test gases, i.e. the physical characteristics and quality of test gases. CEN is expected to adopt the new EN 437 towards the end of 1992. It should result in an approximation of the situations currently prevailing in the various Member States.

(b) Gas transport and distribution equipment

The CEN consultant's report published in 1989 proposed that standardization work should be started in certain specific sectors, provided the necessary technical structures were set up. CEN approved these proposals.

The Commission wishes to encourage the work undertaken by CEN.

D. Solid fuel

(a) Solid fuel quality

The International Organization for Standardization (ISO) is preparing international standards aimed at classifying and codifying solid fuels, and these should be ready within two years.

Specific action at Community level is not necessary in the short term.

(b) Solid fuel production equipment

CEN is currently preparing standards for mining machinery relating mainly to safety under a remit given to it by the Commission under the terms of the Directive on the safety of machinery.

Following contacts with interested parties and in agreement with the CEN proposal, the Commission does not consider further standardization in this sector to be necessary.

E. Energy efficiency

The Community has adopted a programme of "Specific Actions for Vigorous Energy Efficiency" (SAVE).<sup>5</sup> The aim is to establish the instruments needed to eliminate barriers to the free movement of equipment and to harmonize the rules and standards relating to energy efficiency.

The SAVE programme sets out a timetable of legislative and standardization measures up to the end of 1992 and will give CEN and CENELEC remits to draw up the necessary European standards.

It will be important here to avoid anything liable to fragment the internal market, such as the establishment of performance classes.

F. Renewable energy

The European standards institutes have drawn up virtually no European standards relating to renewable forms of energy, in spite of their prime importance. Community action can efficiently and uniformly direct the development of such energy equipment.

The Commission is investigating whether it is necessary to harmonize the essential requirements of wind generators as regards performance, the environment and safety and to introduce a certification system, extending beyond the aspects already harmonized by Community directives such as the Directive on the safety of machinery.

During the first half of 1992, the Commission will also send CEN/CENELEC a request for a survey of its members' requirements for European standards, particularly as regards thermal solar energy.

G. Nuclear power

The Illustrative Nuclear Programme for the Community (PINC) includes aspects dealing with the standardization of nuclear power generation and nuclear safety. The Commission is working on the safety aspects of nuclear power generation.

The CEN/CENELEC Joint Task Force set up to report on standardization requirements in the field of electricity generation considers work in the nuclear power generation sector to have lower priority than other sectors. Nevertheless, the Commission intends to continue its examination of requirements and of the usefulness of standardization in the field of nuclear power generation.

---

5 OJ No L 307, 8.11.1991.

H. Environment

The Commission stresses the need to include environmental considerations in technical specifications and standards in the energy sector.

It is important that priority should be given to environmental considerations so that the objective set out in the Single Act of taking the environment into account on the basis of a high level of protection can be achieved. Any future standardization mandates will take account of these aspects.

Should it prove necessary, the Commission will submit proposals for an appropriate level of environmental protection in accordance with the objectives of the Single Act.

5. Conclusion

A. Standardization in the energy sector is of prime importance for the completion of the internal market and for the reduction of environmental impact, energy safety and efficiency, and for the development and spread of advanced energy technologies. The economic impact resulting from the benefits becoming widespread must also be stressed. Completion of the internal market for energy calls for a substantial increase in standardization activities, as regards both the quality of energy products and the equipment used to produce, transport and distribute energy products. This does not exclude technical harmonization at Community level in cases where national rules fragment the market.

B. Standardization must be stepped up in the following sectors:

- environmental requirements affecting oil products
- oil refining and distribution equipment
- electricity generation, transport and distribution equipment
- gas transport and distribution equipment
- renewable energy
- environmental protection

C. The diversity of the energy sector calls for a diversified approach to technical harmonization and standardization. Thus a variety of measures will be used, including:

- the preparation of new European standards not explicitly required by Community legislation. Requests for the preparation of such European standards must come primarily from the parties directly concerned, but can also be made where necessary by means of standardization remits. Should the standard fail to result in the abolition or adaptation by the Member States of conflicting national rules, Community legislation making reference to the standard compulsory would be considered;

- where necessary, Community harmonization legislation. Where possible, such legislation would be based on the new approach and would contain a reference to European standards in sectors where national rules or technical specifications which are legally binding or effectively compulsory continue to fragment markets;
- energy programmes aimed at specific objectives such as energy efficiency or the development of renewable energies, including a standardization aspect. These programmes will also make a contribution to the achievement of environmental targets, in particular the stabilization of CO<sub>2</sub> emissions at 1990 levels by the year 2000 as envisaged by the Community.

D. To implement these measures and thus boost technical harmonization, the Commission will:

- step up consultations with interested parties at all levels of production, transport, distribution and consumption of energy products in order to encourage more active participation;
- organize with CEN and CENELEC conferences bringing together those responsible for different energy sectors. The diversity of the energy sector should not blind us to the many common features. European standards institutes should take account of this in their work and their internal structures. The proposed conferences would be a first step in this direction.

## 6. Proposals

In view of the above, the Commission proposes that the Council note:

- the Commission's interest in technical harmonization and standardization in the energy sector
- the Commission's approach to technical harmonization and standardization in the energy sector
- progress so far in the various subsectors
- the Commission's strategy for future work
- the Commission's finding that it is necessary to step up standardization activities in a number of energy subsectors and, if necessary, to undertake technical harmonization.

Annex

Technical harmonization and standardization in the energy sector

Taking account of the objectives of the internal market for energy, the Commission has undertaken parallel action for each energy sector: identification of requirements, written and oral consultation of partners represented by trade associations, consultations with the European standardization committees, granting of remits where appropriate, etc.

The conclusions are presented below in accordance with the approach adopted at II above, i.e. product by product and for production, transport and distribution. The description of current standardization activities is followed by conclusions indicating what further action will be taken in each sector.

I. Oil

1. Quality of petroleum products

A. **Current standardization activities**

(a) Existing legislation

Various Council Directives deal with the lead content of petrol, oil savings and sulphur content:

- Council Directive 85/210/EEC<sup>1</sup> concerning the lead content of petrol
- Council Directive 85/536/EEC<sup>2</sup> and Commission Directive 87/441/EEC<sup>3</sup> on crude-oil savings through the use of substitute fuel components in petrol
- Council Directive 87/219/EEC<sup>4</sup> relating to the sulphur content of certain liquid fuels

(b) Existing standards and standards under preparation

In 1984 the Commission gave CEN a remit to prepare a European standard for unleaded petrol. The resulting standard - EN 228 - was prepared by CEN/TC19 and adopted on 24 June 1987.

In 1988 the Commission gave CEN a further standardization remit<sup>5</sup> intended to build on earlier standards in this field. The proposed new standards would constitute an essential addition to the Community directives on fuel characteristics.

---

1 OJ No L 93, 3.3.1985.  
2 OJ No L 334, 12.12.1985.  
3 OJ No L 238, 21.8.1987.  
4 OJ No L 91, 30.4.1987.  
5 Remit BC/CEN/08-87.

The 5 new standards to be prepared by CEN concern:

(i) the specifications for unleaded petrol (Euro-super 85/95), supplementing EN 228, and for petrol in categories B (density, volatility and oxidation stability, etc.) and C;

(ii) and (iii) two remits concerning substitute fuels, organic oxygenate compounds which can be added to petrol to enhance its quality, to establish a method of analysis and measurement and to define certain characteristics of such substitute fuels;

(iv) the specifications for LPG, liquefied petroleum gas for motor vehicles;

(v) the specifications for the characteristics of diesel, including density, distillation points, viscosity and aromatic content.

CEN is expected to adopt these 5 new ENs by 31 December 1992.

## B. Conclusions

### (a) Products for which there are no standards (in existence or under preparation)

- unleaded petrol 98 Octane (premium grade)

This is a temporary phenomenon. This fuel is used in existing vehicles originally designed to run on leaded premium grade petrol. Each year some 8% to 10% of these vehicles are withdrawn from use and replaced by vehicles designed to run on Euro-super (85/95) for which an EN is, as mentioned above, under preparation. Moreover, at its meeting in May 1991, TC-19 - the CEN Technical Committee responsible for petroleum products - voted by a very large majority against preparing a standard for this type of petrol.

- leaded petrol (ordinary or premium grade)

The share of European fuel consumption taken by leaded petrol should fall rapidly over the next ten years and eventually disappear. As for unleaded premium-grade petrol, this is a temporary phenomenon.

- heating oil: the volume traded is low.

- Jet fuel, lubricants: international standards and standards established and adopted by the industry itself appear to suffice for the time being.

- bitumen and asphalt: numerous technical specifications defined by the Permanent International Association of Road Congresses have become trade standards.

In view of the above, and following consultations with Euroopia,\* no standardization beyond that already in existence or under preparation is necessary at present for specific petroleum products, other than specifications relating to energy savings referred to below in connection with the SAVE programme for energy efficiency.

(b) The environment/product quality approach

Although there is no need for further product-by-product standardization, further work at European level is needed.

Certain Member States are increasingly taking national legislative initiatives with a view to improving environmental protection. Examples include the German ban on chlorine and bromine compounds in leaded petrol and the UK definition of the characteristics of unleaded petrol. Rather than responding on a case-by-case basis to national initiatives, a comprehensive, systematic approach should be developed at Community level.

There is also a growing tendency for the new environmental directives adopted by the Council to impose fuel specifications. On 26 June 1991 the Council approved a Directive on the approximation of the laws of the Member States relating to measures to be taken against air pollution by emissions from motor vehicles.<sup>6</sup> The new measures will apply from July 1992. The Council is expected to approve a second group of measures applicable from 1996 in late 1993.

The new environmental requirements will entail changes in both engines and fuels. We must ensure that new standards are applied at minimum cost.

The European petroleum (Euroopia) and vehicle (ACEA) associations and the Oil Industry International Exploration and Production Forum (E&P Forum) are aware of the problem and have themselves set up working groups and defined guiding principles on environmental matters. The Commission would be able to consider whether it was appropriate to put forward Community legislation as a function of the progress made.

Thus the Commission has adopted a comprehensive approach which should take account of the links between fuel quality, engine technology and exhaust emissions.

\* Euroopia is a grouping of European oil companies including BP, Conoco, Saras SpA, Mobil Europe, Dea Mineraloel, ENI, Total, Cepsa, Exxon, Repsol, Petrofina, Texaco, Dea and Elf.

6 OJ No L 242, 30.8.1991.

2. Oil and gas exploration and production equipment

A. **Current standardization activities**

The public procurement Directive<sup>7</sup> obliges contracting authorities to refer in their general documentation and tender specifications to European specifications, if any exist, and if not to other standards in use in the Community.

The October 1989 CEN report on standardization requirements (Dette report) found that the standards in use in the Community are those laid down by the American Petroleum Institute (API), and recommended that these standards be transposed first into international standards by the International Organization for Standardization (ISO) and then into European standards by CEN. The report also recommended active collaboration between the two technical committees concerned, CEN's TC 12 and ISO's TC 67.

In October 1989, ISO classified the API standards in three categories:

**Class 1:** 44 standards which can be directly transposed into ISO standards

**Classes 2 & 3:** 36 standards whose transposition into ISO standards calls for more detailed work or major studies (29 in class 2 and 7 in class 3)

Between 1989 and 1991, ISO transposed 4 of the 44 API standards in class 1 into international standards.

Transposition proved extremely difficult, mainly because of the different nature of API standards and ISO and EN standards. API standards contain many cross-references to other documents published by American organizations.

The Commission informed CEN of its wish to speed up the transposition process with a view to completion of the internal market in general and the application of the public procurement Directive in particular.

CEN set up an ad hoc working group, CEN/BTS2/AH WG 5, to identify the standards which will be available on 1 January 1993, the methods to be used for their transposition and the other European standards to be prepared.

B. **Conclusions**

The Commission will take into account the specifically international nature of oil and gas exploration and production equipment, hence the indispensable link between European standardization and international standardization. Excessive development of European standardization in this field would be artificial.

<sup>7</sup> Directive 90/531/EEC, OJ No L 297, 29.10.1990.



The Commission continues to encourage the speeding-up of the standardization process, in preparation for, and subsequently as part of, the single market, within the existing structures - ISO TC 67 and CEN TC 12 - which perform the necessary work efficiently.

Commission representatives have been closely involved in the work of CEN. E & P Forum (The Oil Industry International Exploration and Production Forum) has also been consulted.

3. Oil refining and distribution equipment

A. **Current standardization activities**

Following consultations conducted by the Commission, Europa expressed an interest in further European standardization of oil refining and distribution equipment.

B. **Conclusions**

Future work will largely reflect the needs specified by Europa.

II. Electricity

1. Electricity quality

A. **Current standardization activities**

(a) Existing legislation

Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility<sup>8</sup> states that the Member States are responsible for ensuring that electric energy distribution networks are protected from electromagnetic disturbance which can affect them. Compliance with these essential requirements calls for the definition of precise physical parameters for electricity.

However, the Directive does not require European standards defining the product electricity to be drawn up or referred to. A specific directive on this subject would presumably be very brief and contain essentially technical details. If it were a new approach directive, it would refer to standards for the technical content.

Most Member States have regulatory texts laying down the physical characteristics of electricity; many date back a long time and they are not harmonized.

(b) Existing standards and standards under preparation

(i) Electricity quality

The Commission is promoting standardization work aimed at harmonizing the physical characteristics of electricity. In

May 1991 the Commission proposed to CENELEC that it undertake this work without a specific remit. CENELEC accepted this proposal and undertook to present periodic progress reports.

CENELEC has since set up a Task Force to draw up the new European standard, which could be adopted by mid 1992.

In September 1989 Unipede/Eurelectric sent the Commission a document containing basic data which can serve as the basis for the preparation of a European standard on the physical characteristics of low-voltage and medium-voltage electricity. The document was drawn up at the request of the distributors themselves, who had already done most of the work.

The physical parameters covered by the new standards, at the Commission's request, are: frequency, voltage wave amplitude, harmonics, unbalance, voltage interruptions and transmission of signals by the grid. The voltages to be standardized would range from low voltage to what is generally known as medium voltage, i.e. 24 or 36 kV.

(ii) Nominal voltages

In November 1988 CENELEC published European standard HD 472 S1, which sets the nominal voltages of low-voltage electricity grids at 230/400 V and lays down the authorized tolerances.

This standard is to be applied progressively, and the first stage is due to be completed in 1995. It is important that all Member States should comply with the harmonized rules introduced by the standard.

B. Conclusions

The physical characteristics of low-voltage and medium-voltage electricity will be harmonized following the drafting of the new standard.

It is not considered worth while standardizing high-voltage electric energy, as the customers receiving it are generally covered by individual contracts and it is never used directly.

The Commission must now mobilize all the necessary means to ensure that the Member States amend their national technical rules and/or adapt their national legislation to align them on the rules proposed by the European standards. If no consensus were to be reached, the Commission would have to consider drafting a specific instrument extending the scope of the standard.

2. Electrical equipment

2.1. Electricity generation equipment

A. Current standardization activities

In December 1989, on the basis of a remit from the Commission in the framework of the public procurement Directive, CENELEC

approved its work programme for European standards needed for reference in the procurement procedures of public entities operating in the electricity sector.

CENELEC document CLC (SG) 233 Rev. 1 does not cover electricity generation equipment. To fill this gap, CEN and CENELEC set up a Joint Task Force (JTF) on electricity generation, which met for the first time in December 1990.

The objectives of the JTF are to draw up an inventory of existing standards, identify additional standardization requirements and propose a list of priorities.

The JTF has set up seven groups for different fields: electricity, boilers, boiler auxiliary units, turbines, turbine auxiliary units, high-pressure pipework and valves and control systems and instruments.

## **B. Conclusions**

The JTF work programme could be ready by about July 1992. The Commission could provide financial support and technical cooperation for the implementation of the programme and its subsequent application.

### **2.2. Electricity transport and distribution equipment**

#### **A. Current standardization activities**

As regards electricity transport and distribution equipment, the above-mentioned report listing the European standards needed for the purposes of the public procurement Directive established a list of priorities and dates for completion of the standardization work and set up a special committee - the Public Procurement Coordination Committee - to oversee programme development.

The report covers the following fields: rotating machines, power transformers, current and voltage transformers, power capacitors, switchgear and controlgear, fuses, electrical cables, poles and towers, conductors, insulators, measuring relays and protection equipment, electrical energy measuring equipment and load control equipment.

In the same report CENELEC listed some 320 European standards which have been published or are about to be adopted which could be used as reference standards in procurement procedures and identified about a hundred items for which standards need to be supplemented or prepared.

In October 1990 Eurelectric presented a series of comments on CENELEC's report CLC/(SG) 233 Rev. 1.

Thus the Commission has contributed to standardization work in this field by encouraging the definition of requirements, speeding up standardization work and involving equipment manufacturers.

## B. Conclusions

The Commission will continue to encourage and speed up implementation of the work programme. It should also obtain from CENELEC a full list of the European standards adopted or about to be adopted which could be used as reference standards in the framework of the public procurement Directive, together with the latest standardization work programme with scheduled completion dates. This programme should contribute to the achievement of the objectives of the internal market.

### III. Gas

#### 1. Gas quality

##### A. **Current standardization activities**

###### (a) Existing legislation

Council Directive 90/396/EEC<sup>10</sup> concerns the approximation of the laws of the Member States relating to appliances burning gaseous fuels. Article 5 obliges the Member States to presume compliance with the requirements of the Directives in the case of appliances manufactured in accordance with the harmonized standards.

###### (b) Existing standards and standards under preparation

In order to apply the above-mentioned Directive and improve industrial competitiveness by creating a common technical environment, it was necessary to make good the lack of harmonized standards in this field.

In 1989 the Commission gave CEN a remit for the preparation of standards for gas appliances.<sup>11</sup> This remit includes the preparation of 54 ENs, one of which is to define the types and pressures of test gases, i.e. the physical characteristics and quality of test gases.

In October 1990, CEN's TC 238 - the technical committee responsible for preparing the standard for the types and pressures of test gases - published the draft version of this European standard. The draft defines test gases and divides them into three families.

The first family comprises manufactured gases, the second natural gases, and the third liquefied petroleum gases (propane and butane). Within each family, the characteristics of the gases are defined in groups: composition in percentage by volume, lower and upper Wobbe numbers in MJ/m<sup>3</sup>, upper calorific value in MJ/m<sup>3</sup> and density.

These appliances are intended to burn gases of various compositions, and must accordingly operate satisfactorily within each family or group of gases.

10 OJ No L 196, 26.7.1990.

11 Remit BC/CEN/06-89 (two riders).

**B. Conclusions**

Having consulted Marcogaz (Union of the gas industries of the Common Market countries), we believe the standard under preparation is sufficient to approximate the current situation in the various Member States.

**2. Gas transport and distribution equipment**

**A. Current standardization activities**

In October 1989 CEN drew up a report, referred to above as the Dette report, in line with a Commission remit in the framework of the public procurement (excluded sectors) Directive. The report proposed that standardization activities should give priority to gas meters, pressure control equipment and certain types of taps and valves.

The study proposed the setting-up of the necessary infrastructure at CEN to enable the work to start. The consultant further proposed the setting-up of a "gas supply" technical committee to define the requirements for pipes and components for natural gas.

In 1990, CEN responded to these proposals by setting up four specialized committees enabling work to start in the fields indicated. Nine draft standards are currently under preparation. For other types of products the study recommended waiting for the result of other CEN or ISO technical committees.

**B. Conclusions**

The CEN study determined the priority subjects for which technical committees have since been set up. The Commission intends to encourage work which is already under way, including the work of other technical committees results of which affect this sector.

**IV. Solid fuel**

**1. Solid fuel quality**

**A. Current standardization activities**

The classification and definition of solid fuels was the subject of a document proposed by the United Nations Economic Commission for Europe (ECE) in Geneva. The document was rejected by the European, American and Australian industries, because they considered it too complex. The ECE set up a working group to draw up a second document on the international classification of seam coal, which will be ready in 1995. However, it will probably be of a very scientific nature.

ISO Technical Committee 27 has also agreed to consider setting up a working group to study the whole question of coal classification and codification and to draw up international standards.

## B. Conclusions

The ISO work could be concluded successfully within two years.

When the ISO standards have been harmonized, they can be proposed as European standards and thus replace the existing national standards.

Following contacts with the Western European Coal Producers' Association (CEPCEO), the Commission has concluded that there are no obstacles to the free movement of traditional solid fuels resulting from standards or rules relating to their technical specifications.

Specific short-term action at Community level is not needed.

### 2. Solid fuel production equipment

#### A. Current standardization activities

##### (a) Existing legislation

A number of European Directives affect standardization in the coal sector, including the following:

- the public procurement Directive,<sup>12</sup> which applies to the procurement of mining equipment
- the Directive harmonizing the safety of machinery<sup>13</sup>
- the proposal for a Council Directive on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres<sup>14</sup>

Other Directives concern personal protective equipment, safety at the workplace for mineral prospecting, the establishment of thresholds for fibrous substances, etc.

##### (b) Existing standards and standards under preparation

CEN has set up Technical Committee 196 to study the standardization of mining machinery, in particular safety aspects. TC 196 received a remit from CEN's programming committee PC2, passing on at technical level for the mining sector the remit which the Commission gave CEN in the framework of the machinery Directive.

Five working groups have been set up for different types of machinery: mine ventilation, cutting machines, other coalface machinery, other mining machinery and personnel transport.

12 Directive 90/531/EEC, OJ No L 297, 29.10.1990.

13 Directive 89/392/EEC, OJ No L 183, 29.6.1989.

14 COM(91) 516, 13.12.1989.

## B. Conclusions

The CEN report on standardization requirements proposed that safety standards should be prepared, but considered the standardization of other aspects, such as performance standards, to be unnecessary.

The reply from the Western European Coal Producers' Association (CEPCEO) to the Commission's question confirmed the CEN report. Performance standards are considered impractical for complete machines. In the case of machine components, safety standards frequently imply specific performance requirements.

The work currently in progress is satisfactory.

## V. Energy efficiency

### A. Existing legislation

The energy policy objectives fixed by the Council for 1995<sup>15</sup> include a 20% improvement in the efficiency of final energy demand. The evaluations of Member States' energy policies carried out by the Commission in 1988 and 1990 resulted in the conclusion that without the adoption of immediate, draconian measures the Community would not achieve this objective.

For this reason the Council approved the programme of Specific Actions for Vigorous Energy Efficiency (SAVE),<sup>16</sup> which has an initial duration of 5 years.

The objective of improving the rational use of energy must be seen in the context of the completion of the internal market. The aim is to establish the necessary Community instruments to remove existing barriers to the free movement of equipment and to avoid the creation of new barriers as a result of uncoordinated action by the Member States and to harmonize the rules and standards relating to energy efficiency.

The programme comprises a series of technical measures, including the definition of standards or technical specifications in three sectors:

#### (a) the building sector:

- the Commission has presented a proposal for a Directive on the approximation of the laws of the Member States relating to efficiency requirements for new boilers;
- the Commission will present a proposal for the compulsory annual inspection of boilers;

15 OJ No C 241, 25.9.1986.

16 OJ No C 301, 30.11.1990.

COM(90) 365 final/2, 11.2.1991.

- the determination of minimum insulation standards for buildings;

(b) domestic electrical appliances:

- the Commission is working towards the establishment of a voluntary agreement on improving energy efficiency with the manufacturers of domestic appliances;

(c) transport:

- with a view to bringing about a drastic reduction in vehicle exhaust emissions, the SAVE programme provides for the determination of minimum requirements for motor vehicles and the generalization of compulsory periodic vehicle inspections.

**B. Conclusions**

The SAVE programme lays down a timetable for legislative and standardization measures up to the end of 1992, i.e. the preparation of directives and the establishment of standards by CEN and CENELEC, in practice the granting of 12 remits for the preparation of European standards.

The Environment and Energy Council of 13 December 1991 concluded that, while it envisaged reinforcing, if necessary, Community programmes such as SAVE in the future, it recognized that these measures and the national programmes would probably not be sufficient to achieve the Community aim of stabilizing CO<sub>2</sub> emissions without recourse to tax instruments.

When implementing the work provided for in the programme, it is recommended that particular account should be taken of two factors: (i) compliance with the objectives of completion of the internal market, avoiding anything which could fragment the market, such as the establishment of performance classes, and (ii) provision for periodic revision of standards and minimum performance standards. The measures provided for in the programme must contain quite specific technical specifications. Flexibility is called for as regards legal form.

**VI. Renewable energy**

**A. Current standardization activities**

The European standards institutes have drawn up virtually no standards relating to renewable forms of energy.

Within the Community, the Commission is to propose a programme for the development of alternative forms of energy, ALTENER.

**B. Conclusions**

Alternative forms of energy are of prime political importance for the Community and of growing economic importance. Certain Member States have already introduced national rules, particularly for wind energy.



Community action can efficiently and uniformly direct the development of such energy equipment.

The Commission has consulted those concerned in government, industry and science. These contacts revealed a real need for standardization.

- (a) For solar energy, both photovoltaic and thermal, the Joint Research Centre of the Commission's Directorate-General for Science, Research and Development published recommendations for testing the performance of solar collectors in May 1989.<sup>18</sup> These recommendations can serve as a basis for European standards which CEN/CENELEC will be asked to prepare.
- (b) For wind energy, CEN/CENELEC has been sent a request for a survey of requirements for the preparation of European standards. In parallel, the Commission is sounding out opinion on the need for a specific directive containing a definition of the essential performance, environmental and safety requirements (other than those laid down in the machinery Directive) and a certification system.

## VII. Nuclear power

### A. Current standardization activities

The Illustrative Nuclear Programme for the Community<sup>19</sup> includes a section on standardization in the nuclear power industry and another on standardization and nuclear safety. It stresses the importance of standardization in this field and targets the following sectors: mechanical components, electrical components, services, civil engineering, and specifications of a horizontal nature such as certification procedures. The progress of the analyses currently being carried out is being assessed by the "Nuclear Power Observatory" (a group of nuclear power experts set up by the Commission).

Discussions on safety aspects have been held by a Commission working group in collaboration with representatives of industry and the electricity producers, the design and manufacture of PWR reactor vessels and the testing of certain electrical safety components under accident conditions being the first topics to be dealt with.

Standardization of methods of inspection of steel components, which play an important safety role, is continuing at international level as part of the Programme for the Inspection of Steel Components (PISC), managed by the Commission.

18 Non Nuclear Energies. EUR 11606 EN May 1989.

19 COM(89) 347, 7.8.1989.

As regards nuclear power production, the CEN/CENELEC Joint Task Force set up to report on standardization requirements in the field of electricity generation considered standardization of the components of nuclear islands in nuclear power stations to be of secondary interest.

A survey of national standards institutes carried out by the Joint Task Force in June 1991, at the Commission's request confirmed this opinion.

## B. Conclusions

The approximation of safety requirements will continue by means of the voluntary process started by the Directorate-General for Science, Research and Development.

The examination of the possible implications of safety requirements on safety equipment specifications will be continued in such a way as to ensure the independence of work to draw up the specifications themselves.

The action to be taken with regard to equipment specifications depends on market developments.

International standardization plays a prime role in this sector, and the impetus must be given by industrial cooperation among the Member States of the Community, the safety authorities being involved in an appropriate manner.

## VIII. Environmental protection

- A. The two subjects discussed above relate to the harmonization of standards and the characteristics of energy products and equipment in order to remove as far as necessary the barriers to the internal Community market. A further aspect of the problem remains to be studied. Environmental protection legislation varies from one Member State to another, resulting in uneven costs for energy industries which must comply with such environmental and safety standards. It should not be forgotten that environment protection costs are only one cost factor among a broad range of elements influencing the competitive position of energy industries (raw material costs, geographical location and transport costs, different taxation regimes and labour costs, etc.). The Single European Act allows Member States to introduce or maintain stricter protection measures than those adopted at Community level.

## B. Conclusions

The Commission will continue to study these differences in environmental rules and emission standards which can have a major impact on the costs of the energy industries and cause competitive distortions. If necessary, the Commission will present proposals based on an appropriate level of environmental protection, in accordance with the objectives of the Single Act.