



## EUROPEAN COMMISSION

DIRECTORATE-GENERAL III  
INDUSTRY

Legislation and standardization and telematics networks  
**Standardization**

**M/087**

### **MANDATE TO CEN AND CENELEC FOR STANDARDIZATION IN THE FIELD OF WIND TURBINES**

#### **1. MOTIVATION**

- 1.1. The present mandate is part of the policy of the European Union to encourage the development of renewable energies. Adopted on 13 September 1993, the Council Decision (93/500/EEC) concerning the promotion of renewable energies in the Community (the ALTENER Programme) establishes for the year 2005 indicative objectives for a reduction of 180 million tons of carbon dioxide emissions, a doubling of the share of renewable energies in the total energy demand (from 4% in 1991 to 8% in 2005) and a trebling of the production of electricity from renewable energy sources (excluding large hydro-electric power stations > 10 MW).
- 1.2. The European industry has gained considerable maturity over the last ten years, and so has European wind technology. At present, industry offers the market intermediate sized wind turbines, in the 200 to 400 kW range (i.e. 30 to 37 m rotor diameter), which are not only reliable but also competitive. The total installed wind power capacity in the European Communities was over 1200 MW by the end of 1993 and it is expected to reach 8000 MW by 2005. In 1993 the internal trade of wind turbines was about the half of total shipments in the European Union. Exports to third countries are also important and concern more than thirty countries (United States, China, India, Argentina, etc.). According to recent studies, this trade is estimated to grow in the years to come.  
With such future perspectives, the lack of European standards in the field of wind turbines should be remedied as soon as possible. The existence of common standards could help the European wind turbine manufacturing industry in the context of both Community single market and the world market.
- 1.3. Within the ALTENER Programme, the European Commission has ordered the preparation of a report on "Harmonization of technical and environmental requirements for wind turbines within the European Communities" to the Danish Energy Agency. The final report (September 1993) recognizes that whereas EC directives are primarily intended to provide a common reference necessary to avoid technical trade barriers, they do not consider the special nature and experience of wind turbines as regards:

- the quality and performance goals of national and EC policies;
- the environmental consequences of wind turbines;
- the technical nature of wind turbines which absorb the wind's kinetic energy and convert it to electrical energy which is delivered to the utility grid and which have uniquely extensive loading and durability requirements;
- unattended operation, especially in areas with a high population density;
- the risk ensuing from a serious wind turbine failure to the public within distance of several hundred meters from the wind turbine.

In a further stage, the harmonization of technical requirements in the field of wind turbines should be completed with the harmonization of the procedures for proving conformity with requirements.

- 1.4. Wind turbines fall within the scope of Directive 73/23/EEC (Low Voltage Directive), Directive 89/106/EEC (Construction Products), Directive 89/336/EEC (Electromagnetic Compatibility) and Directive 89/392/EEC (Machinery Directive), as amended by Directive 93/68/EEC.

These directives specify the essential requirements to ensure respectively the safety of electrical equipment; the safety, health, environmental and economic aspects of any product to be used in civil engineering; the emission and immunity aspects of apparatus liable to generate electromagnetic disturbances or the performance of which is able to be affected by such disturbances; and the safety of personnel in relation to machinery, e.g. equipment with moving parts; and are therefore applicable to wind turbines.

These directives require Member States to accept a presumption of conformity to the relevant essential requirements for those equipments manufactured in conformity with harmonized standards.

In so far as wind turbines are covered by the above Directives, standards may have to be developed concerning risks covered by these Directives, and related to wind turbines. When such standards are to be qualified as "harmonized standards", they should conform to the requirements set out in the various mandates given under the Directives, and be presented as harmonized standards under reference to such mandates

Characteristics of wind turbines not covered by these Directives still may need European standards, in particular as regards quality and performance, their technical nature with respect to absorption of energy, conversion, delivery etc. This mandate particularly calls for the elaboration of such standards.

- 1.5. This mandate also reflects the need for measures to be taken within the European Union in connection with the opening up of public contracts, especially under Directive 93/38/EEC on the procurement procedures of entities operating in the water, energy, transport and telecommunications sector (OJ EC No L 199 of 9 August 1993). Public contracts relating to the supply and installation of wind turbines may involve considerable investments of the order of magnitude of 6 millions of ECU and must therefore be open to competition. Reference to common European standards will help to open up these contracts since it ensures that their technical aspects are transparent and that economic operators can respond to invitations to tender on the basis of equal conditions.

Technical harmonization will also benefit independent producers of electricity if they are offered products, which were approved on the basis of European Standards.

- 1.6. Neither CEN nor CENELEC has established a Technical Committee for wind turbines. However, in 1987 the IEC (International Electrotechnical Commission) set up the technical committee TC 88: Wind Turbine Systems, with the task of creating safety standards for wind turbines. In spite of the fact IEC handles in principle only electrical subjects, the scope of IEC/TC 88, includes the task "of preparing in cooperation with ISO, standards for wind turbines. These standards will deal with safety, measurement techniques and test procedures."

The publications of IEC will however, under application of the co-operation agreements established between IEC and CENELEC, be adopted in Europe under a parallel voting procedure monitored by CENELEC. After adoption, the relevant IEC publications will be published as European standards.

The work programme of TC 88 includes at present 12 work items relating to new IEC publications or the amendment of existing publication.

## **2. DESCRIPTION OF THE MANDATE**

### Tasks to be carried out

- 2.1. The Commission assigns to CEN and CENELEC to prepare a coherent set of European standards for wind turbines in order to satisfy the above-mentioned requirements (see point 1.3.) to create a common technical environment for all enterprises and to improve industrial competitiveness.
- 2.2. Where appropriate, the standards shall contain all necessary elements to be able to carry out the tests in a uniform way, either by the manufacturer himself or by the body charged to carry out these tests.
- 2.3. CEN and CENELEC will ensure a close collaboration so that the totality of the standards coming within the framework of this mandate shall be perfectly consistent especially for these points which have influence on the safety and other aspects of civil engineering products, as well as the safety of personnel relating to machinery, e.g. moving parts.
- 2.4. It shall be the responsibility of CENELEC to ensure the overall coordination of the work establishing, where necessary, the relevant mode of cooperation with CEN.

## **3. EXECUTION OF THE MANDATE**

- 3.1. Taking into account the IEC TC88 work programme, the CEN and CENELEC shall establish a detailed work programme of European standards.

The work programme shall contain:

- a) the foreseen titles of harmonized standards envisaged:
- b) for each one of these standards:
  - \* the target date of the availability of the first document (secretariat document or draft standard)
  - \* the target date for the start of the approval procedure enquiry of voting procedure (enquiry or voting procedure)
  - \* the target date for the adoption
- c) the technical body responsible
- d) the cooperation mode with other standardisation organizations.

This programme has to be elaborated before 31 mars 1995.

The above target dates should be determined to ensure a sustained rythm of the harmonization work so that, as a general rule, the time taken to establish each standard does not exceed two to three years.

- 3.2. With respect to the establishment of European standards, the request related to this mandate applies, from the date of its acceptance by CEN and CENELEC.
- 3.3. With respect to the detailed programming of work, CEN and CENELEC will present on 1 January each year, a progress report.
- 3.4. The European standards adopted will be transposed into national standards and/or differing national standards will be withdrawn from the national collections of the Member States within six month of their adoption.
- 3.5. Acceptance by CEN and CENELEC of this mandate will initiate the standstill period referred to in article 7 of the Council Directive 83/189/EEC of 28 March 1993 for all items of the programme and starting from the date of adoption of this programme.