



## **BUSINESS PLAN**

### **CEN/TC 264 Air Quality**

#### **EXECUTIVE SUMMARY**

The scope of CEN/TC 264 consists of the standardisation of methods for air quality characterisation of emissions, ambient air, indoor air, gases in and from the ground and deposition, in particular measurement methods for air pollutants (for example particles <sup>1)</sup>, gases, odours, microorganisms), meteorological parameters and methods for determination of the efficiency of gas cleaning systems.

The scope of CEN/TC 264 also includes climate change aspects, such as determination of Green House Gas emissions.

Excluded are:

- determination of limit values for air pollutants,
- workplaces and clean rooms,
- radioactive substances.

#### **Benefits and Priorities**

CEN/TC 264 "Air quality" prepares standards as tools, which allow air quality to be measured and to obtain comparable results. This is an ongoing process because of political changes and increase of knowledge with regard to the influence of air pollutants on human health and the environment. These changes lead to new pollutants to be measured and lower concentration levels of known air pollutants, continuously requiring new standards. Political changes and developments in toxicology can influence what are deemed to be safe levels of air quality for the public or the environment.

The principle objectives of CEN/TC 264 are to produce European Standards as tools for the characterisation of air quality:

- which provide measurements with known quality and reliability, obtained as a result of field validation trials,
- which ensure the provision of comparable results throughout Europe,
- which support European environmental policy, EU Directives and industry, and,
- which are appropriate to avoid the risks (for human health and environment) of producing air quality data that are not sound and harmonised within Europe.

Besides the standardisation work TC 264 supports the EU legislator by preparing status reports. In such status reports TC 264 summarizes the state of the art regarding air quality aspects.

For the implementation of EU Directives on air quality, the EU legislator establishes reference methods for emission measurements and ambient air quality measurements, in order to assure that comparable field measurement results are obtained throughout the Member States. It is a special concern of CEN/TC 264 to harmonise the different European practices by establishing a

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<sup>1)</sup> All particles in ambient air, in air emissions and in indoor air including ultra fine particles (< 50 nm).

coherent list of minimum requirements for the specified pollutant(s) in European Standards, covering all measurement steps, measurement planning, sampling, sample conditioning, analysis/quantification, data processing and reporting. Each standardised measurement method includes field validation data for the robustness and for the variability (repeatability and reproducibility) attached to the measurement results. Many CEN/TC 264 projects are mandated by EU and EFTA and are established on the basis of the so-called "New Approach". Being cited in European legislation the standards achieve a high degree of commitment.

The most interested parties (the stakeholders) in the standards to be elaborated by CEN/TC 264 are:

- ♦ through direct interest: legislators (e.g. EC), measurement organisations (governmental, industrial, private) as direct users of the standards; regulators and industry as direct users of measurement results; manufacturers or suppliers of air quality abatement equipment, plants and systems, to prove the efficiency of their equipment; instrument manufacturers; manufacturers of home construction materials to monitor the releases from their products;
- ♦ through indirect interest: the public, to ensure that they are protected from air pollution; governments and industry in assuring a safe environment.

## **1 BUSINESS ENVIRONMENT OF THE CEN/TC**

### **1.1 Description of the business environment**

The general public and/or the environment can be exposed to hazardous substances in air, which occur naturally or are released by industrial processes, household appliances, transport or products. These hazardous substances can be very toxic, harmful, odorous or corrosive, be irritants, sensitisers, carcinogenic, mutagenic, teratogenic, or pathogenic. Therefore, the presence of these substances in air, emissions to air, and in indoor air needs to be limited. To be able to measure the concentrations of air pollutants, inter alia showing compliance with limit values, monitoring the environment, demonstrating efficiency of abating equipment, standardisation of measurement methods is necessary to realise consistency throughout Europe.

CEN/TC 264 prepares standards as tools, which allow the air quality to be measured and to obtain comparable results. This is an ongoing process because of political changes and increase of knowledge concerning the influence of air pollutants on human health and the environment. These changes lead to new pollutants to be measured and lower concentration levels of known air pollutants, continuously requiring new standards. Political changes and developments in toxicology can influence what are deemed to be safe levels of air quality for the public or the environment.

The following political, economic, technical, regulatory, legal, societal and/or international dynamics describe the business environment of the industry sector, products, materials, disciplines or practices related to the scope of CEN/TC 264, and they may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

- Political Factors – Two factors that are likely to increase the need for measurement methods are the "Polluter Pays Principle" and the "Precautionary Principle".
- Economic Factors – Development of trading of emissions becomes more and more an instrument for a cost-effective abatement of air pollution. This trading connects emissions to money requiring more attention for comparability and reliability of the results of measurements. Another economic factor is that reducing pollution will lead to fewer health problems and, therefore, lower expense on illness/hospitals.
- Social Factors – The public expects continuous controls on pollution and is more aware of environmental effects. More and more information about air pollution (ambient air quality, emissions) becomes available to public access for instance through the internet. This sets

requirements for the quality of data to which the use of standard measurement methods is necessary.

- Technical Factors – As the expectation is for lower pollution levels, the greater the need to develop standardised methods of measurement.
- Legal Factors – European legislation has over the years imposed a number of directives on Member States that require both industry and Member States to improve, monitor and control air quality and industrial affects on air quality. This development in directives is an ongoing process. The extant legislation that has impacted on the need for the measurement of quality is as follows:

#### Industrial emissions

- Council Directive 1987/217/EEC of 19 March 1987 on the prevention and reduction of environmental pollution by asbestos
- Council Directive 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in certain activities and installations
- Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste, Official Journal L 332 , 28/12/2000 P. 0091 – 0111
- Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants, Official Journal L 309 , 27/11/2001 P. 0001 – 0021
- Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants, Official Journal L 309 , 27/11/2001 P. 0022 – 0030
- Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (Text with EEA relevance), Official Journal L 275 , 25/10/2003 P. 0032 – 0046
- Directive 2008/01/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control (Codified version) (Text with EEA relevance ), Official Journal L 24, 29/01/2008 P. 8)
- Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control), Official Journal L 334, 17/12/2010 P. 0017 – 0119

#### Ambient air (including deposition)

- Directive 2001/18/EC of the European Parliament and of the Council of 12 March 2001 on the deliberate release into the environment of genetically modified organisms and repealing Council Directive 90/220/EEC – Commission Declaration, Official Journal 17/4/2001 Page No L 106/1
- Directive 2004/107/EC of the European Parliament and of the Council of 15 December 2004 relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air, Official Journal L 023 , 26/01/2005 P. 3-16
- Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe, Official Journal L 152, 11/06/2008 P. 1
- Commission Directive (EU) 2015/1480 of 28 August 2015 amending several annexes to Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council laying down the rules concerning reference methods, data validation and location of sampling points for the assessment of ambient air quality (Text with EEA relevance), Official Journal L 226, 29/08/2015 P. 0004 – 0011
- Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC
- Convention on Long-range Transboundary Air Pollution (CLRTAP, 1979) approved by Council Decision 81/462/EEC of 11 June 1981

- European Monitoring and Evaluation Programme (EMEP, <http://www.emep.int/>)

## 1.2 Quantitative indicators of the business environment

The following describes the business environment in order to provide adequate information to support actions of CEN/TC 264:

The general public and/or the environment can be exposed to hazardous substances in air, which occur naturally or are released by industrial processes or household products. These hazardous substances can be very toxic, harmful, odorous or corrosive, be irritants, sensitizers, carcinogenic, mutagenic, teratogenic, or pathogenic. Therefore, the presence of these substances in air, emissions to air, in indoor air needs to be limited. To be able to measure the concentrations of air pollutants, inter alia showing compliance with limit values, monitoring the environment, demonstrating efficiency of abating equipment, standardization is necessary to realise consistency throughout Europe.

CEN/TC 264 prepares standards as tools, which allow air quality to be measured and to obtain comparable results. This is an ongoing process because political changes and increase of knowledge concerning the influence of air pollutants on human health and the environment. These changes lead to new pollutants to be measured and lower concentration levels of known air pollutants, continuously requiring new standards. Political changes and developments in toxicology can influence what are deemed to be safe levels of air quality for the public or the environment.

The European Standardisation should be built up on existing national standards. In many cases, however, national standards are designed for different conditions than those required in the EU Directives (e.g. lower emission concentrations or lower ambient air concentrations). It is then necessary to review procedural parameters or even to develop completely new reference methods. In many cases it is, therefore, necessary to provide improvements to measurement techniques or to carry out comparative testing of existing methods. For verification of procedural parameters the standardisation work in CEN/TC 264 is accompanied by European measurement programmes (inter-laboratory testing).

For the performance of special standardisation work, e.g. such which is linked to EU legislation, EU and EFTA can give official mandates to CEN. In CEN/TC 264 nearly 70 % of the working groups received a mandate and additionally financial support by EU and EFTA (100 % support for validation measurements; 50 % support for preparing the standard). Mandates covering financial support by EU and EFTA are bound to rules and commitments concerning content and time, e.g. generally draft standards have to be available to EU and EFTA within three years. The financial support enables CEN/TC 264 to describe in its ENs validated measurement methods with verified comparability.

The European Standards of CEN/TC 264 describe complete measurement methods. All information which are necessary to perform the measurements are included in the standard, which is (in case of standards for the implementation of the EU Framework Directive) structured as follows:

- Range of application. - concentration levels for which the method applies
- Method description. - sampling, sample preparation, calibration and analysis
- Determination of performance characteristics. - traceability of the method, establishment of the measurement uncertainty (precision, bias, linearity, stability, effects of interferences, repeatability, and reproducibility)
- Performance characteristics of the standard method. - results of laboratory and field validation
- Recommendations for use. - field operation and QA/QC aspects

Major factors on the development of the markets are environmental legislation and technical innovation. Regarding QA/QC aspects especially performance requirements requested by users and legal authorities are strongly influencing the innovation process.

## 2 BENEFITS EXPECTED FROM THE WORK OF THE CEN/TC

Those most interested in the preparation of such standards by CEN/TC 264 (i.e. the stakeholders) are;

- Legislators (e.g. EC), to enable legislation on the environment and health to be effective,
- the Public, to ensure that they are protected from air pollution,
- Industry, to monitor their effects on the environment,
- Regulators, to ensure protection of the environment and human health and that emission limits are not exceeded and air quality is maintained,
- Local authorities, to monitor the local environment,
- Manufacturers or suppliers of air quality equipment, plants and systems, to prove the efficiency of their equipment,
- Instrument manufacturers, to provide the necessary measurement equipment,
- Service contractors (such as environmental laboratories) who use the measurement instruments, methods and standards
- Manufacturers of home construction materials who monitor the releases from their products.

The standards support legal authorities and manufacturers by specifying technically detailed requirements to fulfil basic legal requirements. The standards are basis for legal verification. The standards provide the user with practical help in handling and calibrating the equipment, thus, in meeting specified quality criteria. Moreover, the standards improve the quality of data obtained from the equipment of different manufacturers.

The standards provide the manufacturer with guidance regarding performance requirements, range of application, product reliability, etc.

The standards serve other Technical Committees in developing test standards e.g. for materials testing, analytical procedures and techniques as well as for cross-referencing.

Additional to the preparation of European Standards TC 264 establishes a status report in which the state of the art for all kind of air quality related questions are dealt with. This status reports are established to support the EU legislator.

It is not easy to calculate the financial profit of harmonised measurements. On the one hand, non-harmonised measurements can result in the wrong measures to being taken, relating to human health and to the installation of abatement equipment. On the other hand, harmonisation leads to improvement of efficiency in carrying out air pollution measurements. The private market for air pollution measurements (waste gas and air quality) carried out by environmental laboratories in 2004 is estimated to be EUR 400 million in Europe, growing to EUR 550 million in 2011. Assuming that at present most of the waste gas measurements are carried out by the industry itself and most of the air quality measurements are carried out by public organisations, the total market for waste gas and ambient air quality measurements is likely to be more than EUR 2 000 million in 2004 growing to more than EUR 3 000 million in 2011.

## 3 PARTICIPATION IN CEN/TC 264

All CEN national members are entitled to nominate delegates to CEN Technical Committees and experts to working groups, ensuring a balance of all interested parties. Participation as observers of recognised European or international organisations is also possible under certain conditions. To

participate in the activities of CEN/TC 264, please contact the national standards organisation in your country.

## **4 OBJECTIVES OF CEN/TC 264 AND STRATEGIES FOR THEIR ACHIEVEMENT**

### **4.1 Defined objectives of CEN/TC 264**

The principle objective is to produce standards as tools for the characterisation of air quality:

- which are providing measurements with known quality and reliability, generally obtained as a result of field validation trials,
- which ensure the provision of comparable results throughout Europe, and,
- which support European environmental and health policy, EU Directives and industry,
- which are appropriate to avoid the risks (for human health and environment) of producing air quality data that are not sound and harmonised within Europe.

A secondary principle is to promote new work items and pursue close liaison with ISO/TC 146 "Air quality", and other relevant TCs of CEN (such as CEN/TC 137 "Workplace atmospheres") and ISO and organisations (governmental and NGO's etc.), to prevent duplication of effort and ensure effective use of resources.

Another objective is the Implementation of International Standards as European Standards relating to measurement methods for characterisation of air quality (inter alia: emissions, ambient air and indoor air, general aspects).

### **4.2 Identified strategies to achieve CEN/TC 264s defined objectives:**

To achieve the overall objectives it is necessary to have a strategy in place comprising the following instruments and protocols:

- a) Standards as tools in the context of the work undertaken by this TC, will principally be methods that could be used as reference methods for measurement of air quality, but these will be supported by other more strategic standards, such as the provision of performance criteria for continuous measurement instruments, methods for estimating levels of uncertainty to be used, and planning standards to ensure comparability of results, etc.
- b) Liaise and consult with stakeholders about new work items (tools), especially legislators and industry.
- c) Where applicable, undertake the field validation of proposed standards (i.e. comparability, uncertainty and variances evaluation) to ensure repeatability and reproducibility levels can be established which provide confidence in the use of the methods and enhance European harmonisation. Encourage the provision of funding for field validation work.
- d) Secure the funding to enable field trials to be completed in a timescale which meets the requirements of European legislation and reduce the barriers to trade.
- e) Identify research needs, which affect new work items.
- f) Encourage working groups to operate more effectively, especially via correspondence.
- g) Manage the programme for the production of standards to achieve deadlines/target dates, especially by holding plenary and convenors meetings.
- h) Determine the best structure of CEN/TC 264 to deliver the objectives and work programme of CEN/TC 264.
- i) Promote the expert work carried out by CEN/TC 264 and consider the need for specialised workshops.
- j) Review the work programme every year.
- k) CEN/TC 264 has agreed to work in English at meetings, therefore, translation is not required. However, for sake of efficiency, all participants are strongly invited to express themselves as clearly and as shortly as possible and shall be prepared to repeat what they have just said upon

the request of any participant. Also documents of any kind are provided in English. Only the resolutions are made available in the three official languages for which a resolutions committee is established at every meeting.

l) CEN/TC 264 will actively pursue the co-operation with ISO/TC 146 "Air quality" according to the Vienna Agreement. Not only by simultaneous development of standards but also by adoption of ISO Standards as EN Standards.

m) Take into consideration the information provided by the liaison members of CEN/TC 264 and other organisations in regular contact with CEN/TC 264, which are:

- CEN/TC 112 "Wood-based panels"
- CEN/TC 137 "Assessment of workplace exposure"
- CEN/TC 207 "Furniture"
- CEN/TC 351 "Construction products – Assessment of release of dangerous substances"
- CEN/PC 421 "Emission safety of combustible air fresheners and similar products"
- CEN/TC 437 "Electronic cigarettes and e-liquids"
- CEN/TC 444 "Environmental characterization"
  
- CEN/Sector Forum Gas\_Infrastructure/WG "CO2"
  
- ISO/TC 24 "Particle characterization including sieving"
- ISO/TC 146 "Air quality"
- ISO/TC 207 "Environmental management"
  
- CEFIC – European Chemical Industry Council
- CEMBUREAU – European Cement Association
- CONCAWE, the Oil Companies' European Organisation for Environment, Health & Safety
- EuLA – European Lime Association
- EURIMA – European Insulation Manufacturers Association of Mineral Wool
- EUROFER – European Confederation of Iron and Steel Industries
- JISC – Japanese Industrial Standards Committee
- MARCOGAZ – Technical Association of the European Natural Gas Industry
- OIML (TC 16) – International Organization of Legal Metrology
- VGB PowerTech e.V.

### 4.3 Environmental aspects

CEN/TC 264 is actively developing European Standards and normative (and non normative) documents to investigate and monitor environmental (including also indoor air) parameters to support European environmental legislation and environmental legislation in the member states and therefore fully supports the idea of promoting environmentally friendly standards provided that human health and safety issues are taken into account. The use of chemicals, organisms and apparatuses can cause negative effects on the environment, so the environment and human health is always prioritized during the development of standards and documents.

CEN/TC 264 supports the banning or replacement of harmful chemicals from analytical methods, where possible, provided that there is no impact on human health and safety.

The mid-term objective of CEN/TC 264 is also to develop closer link with relevant health standard developers to help them to integrate the environmental aspects in the standards aiming to protect human health.

CEN/TC 264 takes environmental aspects into account when revising existing European Standards and requests that its members also consider environmental aspects when proposing new documents, or revisions to existing documents, that enhance and improve European environmental standards.

## **5 FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE CEN/TC WORK PROGRAMME**

Every year the work programme of CEN/TC 264 is reviewed to take account of any constraints that have arisen during the year.

Two main factors are identified that play an important role in relation to the timely delivery of the required standards:

- availability of experts, and
- availability of financial funding.

Experts are originating from public and private bodies. Time and cost are provided by their employees, but to a limited amount. Field trials for validation of air pollution measurement are very expensive compared to validation of other measurement methods. Consequently, there is a strong need for further financial support. Also if EC/EFTA mandates are not granted in due time, then the start of validation work may be delayed and the target dates for the project will be extended. Similarly, if the convenor or experts were no longer available, delays would inevitably occur.

The field work can be unpredictable at times and any problems which would cause a reassessment of field trials would probably cause delays to the work programme.

Finally, the introduction of new legislation could require work programmes to be improved. Unless further funding was available it might not be possible to speed up the work.