



INZRAK

Enhanced environmental protection inspection for efficient control of air quality monitoring and of all entities under obligation within system of greenhouse gas emission allowance trading, in order to achieve better quality of air in Republic of Croatia



REPUBLIKA HRVATSKA

MINISTARSTVO ZAŠTITE
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EKONERG

Energy research and Environmental Protection Institute



SUBJECT MATTERS IN THE QUESTIONNAIRE

**O6 EXAMPLES OF AIR QUALITY ASSESSMENT ORGANIZATION
AND INSPECTION MONITORING OF PROVISIONS IN THE FIELD OF
AQM IN DENMARK**

O6 AIR QUALITY MONITORING SYSTEM IN DENMARK

Denmark has a national air quality monitoring network with 18 metering stations. In the four largest cities there are **10 city stations** (city traffic or city backgrounds) and **eight rural and regional background stations**.

The network is led by DCE - **Centre for Energy and Environment, in cooperation with the four largest cities**. Rural and regional background stations primarily measure concentrations of pollutants in the air and deposition for assessing ecosystem and agricultural impacts.

O6 AIR QUALITY MONITORING SYSTEM IN DENMARK

There is a **comprehensive model system for modeling** the air quality used as a supplement to measurements (<http://envs.au.dk/en/knowledge/air/models/>).

Denmark's annual air quality monitoring reports include results model calculations for all places (streets) where there is no air quality measurement (<http://dce2.au.dk/pub/SR234.pdf>).

Annual Report on Atmospheric Deposition (<http://dce2.au.dk/pub/SR204.pdf>) also includes extensive calculations model.

O6 AIR QUALITY MONITORING SYSTEM IN DENMARK

The main site for monitoring air quality in Denmark is located on the link <http://envs2.au.dk/luftdata/presentation> [in Danish]. Tables and graphs of current data from air quality monitoring stations (raw data) can be selected from the menu at the top of the page.

Historical annual statistics can be viewed and downloaded at the link http://www2.dmu.dk/1_viden/2_Milioe-tilstand/3_luft/4_Maalinger/5_database/HentData_en.asp.

O6 AIR QUALITY MONITORING SYSTEM IN DENMARK

The DCE also has a system for calculating and displaying annual statistics of air quality on the map (annual values of NO₂, PM₁₀, PM_{2.5}, values from 2012), including air quality statistics at individual addresses (streets) nationwide. ([Http://lpdy-en.spatialsuite.dk/spatialmap?](http://lpdy-en.spatialsuite.dk/spatialmap?)).

Maps can be increased to see the concentration ranges in a particular street. You can enter a specific address using the search box. For example, enter "Kongens Nytorv (1050 København K)" into the search box to make it see the values for that address.

O6 STATE NETWORK

The State Network for Air Quality Monitoring is led by the **DCE (Centre for Energy and Environment)**, in cooperation with the four largest cities (**Copenhagen, Aarhus, Aalborg, Odense**).

DCE (formerly known as the National Environmental Research Institute, NERI) is a university-based research institute by the Danish **Environmental Protection Agency (EPA)** appointed responsible for air quality monitoring and at the same time the **national reference laboratory** for air quality monitoring.

There are no other air quality monitoring networks in Denmark. In a few places citizens are conducting measurements with cheap sensors.

O6 AIR QUALITY MONITORING BY POLLUTERS

In Denmark, it is rare to monitor air quality by companies (polluters). The impacts on the air quality of certain pollutants are mainly determined by model calculations.

Short measurement campaigns (including smell scales) are usually done only if there are complaints or some other problems. As usual, polluters pay such air quality monitoring.

The environmental permit primarily regulates air pollution by determining the Best Available Techniques (BAT) and **maximum permissible emission concentrations** as well as discharge parameters (chimney height, air flow, etc.)
<http://eng.mst.dk/trade/industry/industrial-air-pollution/>.

O6 AIR QUALITY MONITORING BY POLLUTERS

The ambient air quality concentrations are calculated during the permits issuing, based on a standardized **dispersion model** using **Danish OML dispersion model**, taking into account the highest maximum hourly emissions (worst-case).

The **model results** (maximum hourly concentrations, 99th percentile) are compared with the Danish **hourly limit values** (given the impact on human health) as a contribution to the air pollution of a particular polluter (known as B-values in Denmark as a contribution to or increase in air pollution).

B-values are more conservative (**stricter**) than the EU limit values, so under normal conditions, industrial air pollution is below the limit values of EU.

O6 AIR QUALITY MONITORING BY POLLUTERS

Usually initial and occasional (annual) **emission** measurements are required (measurement at the outlet) to demonstrate compliance with emission requirements. Large plants and incinerators have **continuous emission monitoring** (IED directive).

An example where air quality measurements are required in an **environmental permit** was in a tarnish factory, where initially **BTEX** (benzene) was measured at the edge (fence) of the factory.

This request was rejected in a later revision of the environmental permit.

O6 LABORATORIES FOR AIR QUALITY MONITORING

Who can measure the quality of air in Denmark? Do the labs need some kind of permissions and who is authorized to issue permissions?

There is no certification or **licensed** laboratory system in Denmark for air quality monitoring. THEREFORE, NO SPECIAL PERMIT IS REQUIRED. (In opposite, there is a certification system for noise measurement.)

Danish laboratories can be accredited by **DANAK, Danish Accreditation Fund**.

DCE (Centre for Energy and Environment), which manages the national network, is accredited for reference methods (CENs) used in the national network.

Commercial labs that perform air quality measurements are usually **accredited** for particular parameters and for quality assurance in general.

O6 LABORATORIES FOR AIR QUALITY MONITORING

There are no general requirements for engaging accredited laboratories, but that can be a request entered in the environmental permit.

For example, "**Control and Calibration of the Automatic Tracking System (CEMS) is carried out by a company or laboratory authorized for it**".

Often, the term "qualified" is used, such as "**Measuring must be done by qualified company or laboratory**", which does not necessarily require accreditation for a particular method, but they can be asked for documentation on their experience and quality control.

O6 INSPECTION OF LABORATORY FOR AIR QUALITY MONITORING

What are the steps in the inspection of air quality monitoring laboratories in Denmark?

Inspection of the air quality monitoring laboratory is carried out through accreditation **DANAK** (Danish Accreditation Fund), which is the Danish accreditation body, and only for accredited methods. The accreditation is awarded for four years.

The procedure is as it is with us. At the beginning, it is self-accreditation, and thereafter follow regular annual inspections. After 4 years there is a re-accreditation which involves level of supervision as when obtaining accreditation.

The general accreditation procedure is described on the link:

http://english.danak.dk/English/english_about_accredit/English/english_about_a_ccredit/english_about_akkredit_process/.

DCE participates in intercomparations for air quality measurement in the reference European Union Laboratory (ERLAP, <https://ec.europa.eu/irc/en/research-facility/european-reference-laboratory-air-pollution>).

O6 INSPECTION MONITORING OF POLLUTERS

What are the steps in the inspection of polluters? Planning mode, role in "ad hoc" inspection, the inspector's responsibility to order immediate measures.

In Denmark, the environmental inspection is under the jurisdiction of "Kommune" (**local/regional self-government**) which employees carry out inspection monitoring of polluters, apart from the largest industrial **plants** directly controlled by **Environmental Protection Agency (EPA)**.

There is no "manual" for environmental inspection, but inspectors handle it according to appropriate legal provisions and guidelines of the Danish Agency.
<http://eng.mst.dk/trade/industry/industrial-air-pollution/statutory-orders-and-guidelines/>

O6 INSPECTION MONITORING OF POLLUTERS

There is also a legal regulation on environmental inspection that describes: frequency of the inspection process for different types of monitoring, the mandatory information which need to be in permits and inspection reports, public information and mandatory reports on inspections submitted to the Danish Agency.

<https://www.retsinformation.dk/forms/R0710.aspx?id=194518>

Main Industrial Air Pollution Guidelines (Air Emission Guidelines) determine the procedures for issuing and verifying license conditions, but do not describe the procedures of inspection.

<http://eng.mst.dk/media/mst/69141/Guidelines%20for%20Air%20Emission%20Regulation.pdf> (in Danish).

O6 INSPECTION MONITORING OF POLLUTERS

Since there are only a few requirements for sampling or **air quality monitoring**, there are no general procedures for checking air quality monitoring.

Inspections are usually based on measurements of qualified and **accredited laboratories**.

Laboratory measurement reports that require **licensing conditions** are usually forwarded to the body responsible for environmental protection by polluters.

In the **case of complaints**, especially for smelling scent, you may be asked for a short-term **measurement of air quality** to determine the concentration of unpleasant odors in the residential area from which the complaint came.

O6 INSPECTION MONITORING OF POLLUTERS

Inspections that contain air quality also include:

- review of relevant production processes
- discharge chimneys and all equipment for air purification
- overview of process management and measurement reports

All inspections are stored in the national environmental database (DMA) including inspection reports and decisions, all available to the public

<https://dma.mst.dk> (in Danish).

The database can be searched by one company as well as the total profit statistics for permits, inspections and executives in "Kommune.

O6 INSPECTION MONITORING OF POLLUTERS

Unplanned monitoring

When a complaint is received, the inspectors visit that place to determine the nature and scope of the problem. Working with other employees responsible for ecology in the "Kommune", they **may issue mandatory measures** that companies must apply within a certain timeframe.

For example, repair a faulty system and perform measurements until the system starts work properly.

Inspectors can also issue bans, which require the company to **stop an activity or process** that does not meet the conditions of the permit.

Also for serious and uninterrupted **violation of the terms of the permit**, they may report the company to the **police for civilian or criminal investigation** or issue mandatory orders or prohibitions.

O6 EXTRAORDINARY INSPECTION MONITORING

How is the inspection procedure in case of complaints, accidents and incidents carried out? Which other bodies are involved in communication during the extraordinary inspection monitoring?

Environmental inspection is usually announced 14 days in advance. Extraordinary inspection is occasionally used when there is doubt about a problem or something happens.

Exceptional inspections are rare because responsible management or technical company staff may not be available when the inspector arrives unannounced. It is not usually necessary to include other persons in the inspection or to notify others bodies when it comes to unannounced inspection.

All supervisory visits (announced and unannounced) are registered in the national base of environmental management data.

O6 ROLE OF ENVIRONMENTAL INSPECTION IN ADOPTION OF LEGISLATION

Denmark does not have a special environmental inspection agency. Inspections are implemented by employees of the **Environmental Protection Department of Kommune** (local/regional self-government), apart from the largest industries directly controlled by the **Danish Environmental Protection Agency**.

The Danish Agency is obliged to hold public hearings or open consultations for public comment on the proposed environmental protection regulation, which may include **consultations with the Kommune Environmental Protection Departments**, as well as other stakeholders.

O6 COORDINATION AT INSTITUTIONAL LEVEL

How is the coordination of the inspection body and the competent body carried out during the inspection?

The **Kommune** is the competent body for environmental permits and environmental inspection, except for the largest industrial plants directly regulated by the **Danish Environmental Protection Agency**. "Inspection body" is therefore a **part of the competent body**, and usually the inspectors are in the **same department in Kommune** as well as the environmental protection experts dealing with licenses, so the **coordination is excellent**.

O6 JUDICIAL PRACTICE IN THE AREA OF AQM

Complaints are usually referred to the **Kommune (LSGU/RSGU)** or to the **Danish Environmental Protection Agency** for the largest industries. If it is not satisfied with the Kommune decision, the plaintiff can file an appeal to the **Appeals Committee for Environmental Protection** (Miljøklagenævnet <http://nmkn.dk/> (only in Danish)) which is the highest administrative body in Denmark for environmental issues.

Citizens and companies can file complaints that the Board is considering and passed decisions are binding. The only possibility after that is a trial, which is not as usual.

O6 LEGAL PROTECTION OF THE INSPECTOR

Is there legal support to inspectors in the case of judicial proceedings?

Appeals (of companies or private persons) regarding environmental complaints, approval procedure permission or permit conditions, are processed by the competent Kommune or by the Agency for the largest industries. An appeal to the State Appeal Committee for Environmental Protection may be brought to the decision of the Kommune or the Agency, which is the ultimate administrative decision-making body about appeals. In rare cases, trials and court verdicts arise.

In appeals and court cases, when necessary, environmental inspectors have the support of the Kommune attorney (or Agency).

O6 JUDICIAL PRACTICE IN THE AREA OF AQM

An example of a particular case

The recent case concerning the industry and the air quality (scents) involves the company for food production, European Protein A/S in Jellingu, Denmark (in Vejle Kommune).

The company produces animal feed that includes soy and rape fermentation, which creates significant unpleasant smells in the surrounding business and residential areas. Therefore, there was a large number of population complaints and a large number of smell measurements, and the company invested heavily in control measures (carbon filtration) to reduce an unpleasant odor, but in spite of that it could not achieve a conformity with the limit values of 5 fragrance units (permit conditions).

There are currently two court proceedings in progress, and local politicians have been very loud. One problem is that the company has a permissible 12 m chimney, though the larger chimney would reduce the concentration of odor smells at ground level during stable atmospheric conditions.

O6 JUDICIAL PRACTICE IN THE AREA OF AQM

The company was closed in 2015 by a decision of the Complaints Committee for Environmental Protection, but was reopened by a local court decision, which found errors in the method (procedure) to which Vejle Kommune solved the case.

The company objected to Kommune (through the Complaints Committee for Environmental Protection) and it is allowed to work while the subject is in progress.



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