



**Royal  
HaskoningDHV**  
*Enhancing Society Together*



## Air Quality - Industrial Emissions & Odour

All industrial plants have to deal with emissions to air. The minimisation of these emissions and recovery of contaminants will decrease a plant's environmental impact. It will also positively affect the performance, sustainability, corporate and social responsibility of the site.

Royal HaskoningDHV's experts provide technical advice and policy related services in the field of emission management and impact assessment, with the objective of fulfilling our clients' local and international environmental obligations.

We are particularly experienced in managing emission aspects and use up-to-date tools and expertise to identify the impacts of air pollution in industry. We offer technical and compliance support on industrial emissions to air and odour emissions, ranging from detailed technological and modelling studies to full compliance support.

Based on our experience and connections with the industry, we can assist you to find the optimal balance between environmental impact, performance of your activities and investments.

Our services include:

- Regulation support / compliance management
- Measurement and modelling
- Technology selection
- Emission trading



## Regulation support / compliance management

To comply with the relevant legislation we can assist you with an overview of all current and future applicable legislation (for example the Industrial Emissions Directive, Activiteitenbesluit and others).

We assist you in complying with such legislation, both legally through assistance with permit applications and environmental impact assessments, and technically by advising in selecting the best abatement strategy and engineering the required equipment. We support many industries and also support local authorities and governments such as the Ministry of Environment and InfoMil in this field of work, so we are well aware of their perspective in industrial projects.

Our experienced consultants identify management measures that can be implemented practically based on your available resources, with the main focus on implementing the best available technology for a specific polluting source. We can also provide courses in this area.

## Measurement and modelling

Emissions can be quantified by measuring the concentration of related substances emitted from a source. At Royal HaskoningDHV we have extensive experience in setting up a measurement plan and coordinating emission measurements. We provide services for emission measurements for stacks as well as fugitive emissions, and our experts also have knowledge in measuring (inside and outside) air quality.

Our experts are skilled in modelling the contribution to air pollution and odour impact due to a variety of sources, whether industrial (i.e. mining, heavy and light industrial operations), transport, shipping (inland and sea) or agriculture.

In our projects we use high end dispersion models such as AERMOD as well as national models such as Geomilieu. To determine the impact of the deposition we use the AERIUS model of which, the results can be used for legislation purposes, including environmental (Wabo) and nature permits (Wet natuurbescherming), meeting limit values, health studies and communication with stakeholders.

## Technology selection

A key part of our business focuses on the selection of the best available techniques to reduce a plant's emissions to air.

This selection is based on:

- Characteristics of the emitted vapours – i.e. flow rate, concentration and properties of pollutants, presence of impurities, temperatures and pressure
- Legal requirements
- Control options
- Plant location, size and layout
- Safety of the vapour transport and treatment
- Availability of utilities
- Cross media effects – water and energy consumption and waste production
- Capital and operating costs
- Maintenance requirements

Part of the assessment for possible emission abatement techniques is cost-effectiveness.



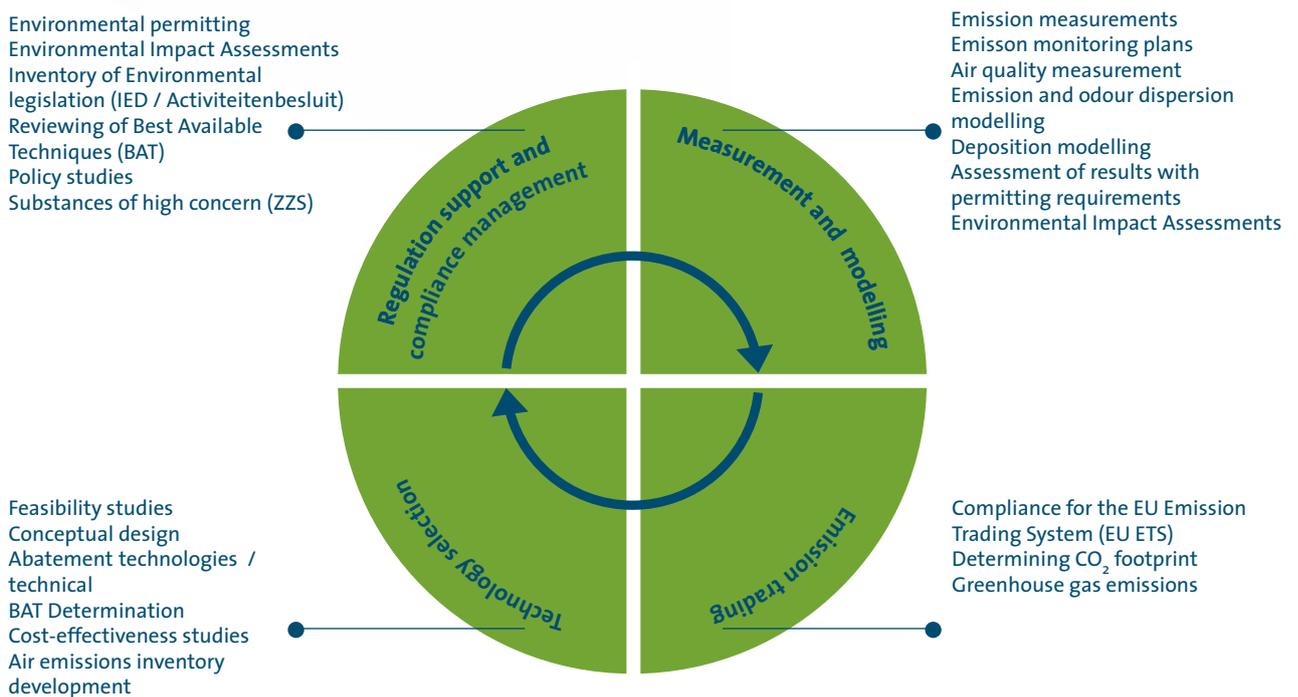
## Emission trading

The European Union implemented the European Emission Trading Scheme (EU-ETS) to form the cornerstone of the EU's policy to combat climate change. Following its implementation, a large share of European companies now have to comply with the requirements of the EU-ETS.

Yet it is not only companies that fall under the EU-ETS which need to track their greenhouse gas emissions. It's essential for any company to analyse the CO<sub>2</sub> emission footprint in their production chain.

Royal HaskoningDHV can support you in quantifying your CO<sub>2</sub> footprint and guiding you through the EU-ETS legislation.

The figure below illustrates an overview of all of Royal HaskoningDHV's services in this area:





## About Royal HaskoningDHV

Royal HaskoningDHV is an independent, international engineering and project management consultancy company with over 135 years of experience. Our professionals deliver services in the fields of aviation, buildings, energy, industry, infrastructure, maritime, mining, transport, urban and rural planning and water. Backed by expertise and experience of nearly 6,000 colleagues across the world, we work for public and private clients in more than 130 countries.

Royal HaskoningDHV is recognised as a market leader in engineering and consultancy project management and aims to provide innovative solutions which also benefit society.

Further information

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