



## AIR QUALITY ASSESSMENT & MODELLING

Assessment of the impact of activities on air quality forms part of an Environmental Impact Assessment and is an environmental licensing authority requirement for most industrial or infrastructural development approval applications.

The process involves the determination of the quantity and character of emissions to the atmosphere and the application of an atmospheric dispersion model to predict the transport and dispersion (mixing) of the emissions in the surrounding environment. The process provides a means of estimating the impact of emitted pollutants on the environment, the concentration of individual pollutants in the air we breathe and the rate of accumulation on the soil or water bodies on which we and our children play.

Application of atmospheric dispersion models is the most cost effective means of estimating the impact of air pollutants emitted by specific individual industries or more general local or regional emissions such as individual roads, regional traffic or wood fired heaters. Atmospheric dispersion models enable assessment of the spatial extent of pollutant concentrations and compliance with air quality limits and guidelines set by regulators (state or regional government authorities). Atmospheric dispersion models can also be used to assist in design of plant or mitigation strategies, providing detail of relative source contributions and affect of critical design parameters such as stack height.



Engineering Air Science has extensive local and international experience in air quality assessment and the application of fluid and dispersion modelling tools to understand the behaviour and impact of atmospheric pollutants. Experience that includes the use of traditional stability-class based Gaussian Plume models (ISC, AUSPLUME, ...), 'New Generation' Gaussian plume tools (AERMOD, ADMS, ...) and 3-dimensional wind field codes (CALPUFF, TAPM, ...) to industrial and regional investigations.

Our extensive knowledge and hands-on experience of the application of fluid modelling tools (CFD, wind tunnel) enhances understanding and improves representation of large and more often controversial industrial sites. The integration of modelling tools in the initial conceptual and design stages of a project can help highlight and avoid potentially costly environmental compliance issues.



*Engineering Air Science specialise in advising on issues relating to atmospheric flow and meteorology, air quality, industrial fluid mechanics and thermodynamics.*

We offer expertise encompassing the direct application of models to assess the impacts of aerial emissions. This is enhanced through participation in validation and uncertainty studies and investigations to develop advanced modules and improve model capability and reliability. With experience across many industry sectors including mining, processing, manufacturing, nuclear, defence, agriculture, transport, waste water, landfill and research and development. Engineering Air Science works with clients and regulators to achieve sustainable solutions.

## CONTACT

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## WHY CHOOSE US?

Notably the skills that differentiate Engineering Air Science Pty Ltd from the many other environmental air quality consultancies are;

### - EXPERIENCE -

Experience in fluid mechanics, and its application to aerodynamics and dispersion in relation to complex industrial sites.

### - KNOWLEDGE -

Knowledge of the individual modelling tools to understand their capabilities and limitations, strengths and weaknesses.

### - EXPERTISE -

Expertise to select and apply the most application appropriate tools and methods to your individual circumstances.

## SERVICES

- » Air Quality Assessment
- » Dispersion Modelling
- » Emission Estimation
- » Emissions Monitoring
- » Ambient Monitoring
- » Odour Assessments
- » Peer Review

