



WESTERN SYDNEY AIRPORT



Air quality

The Western Sydney Airport Environmental Impact Statement (EIS) models air quality impacts associated with the construction and operation of the proposed airport. The EIS found that the proposed airport would result in minor changes to air quality in the Western Sydney region. Emissions from the proposed airport will be within relevant standards and represent an increase of just 0.1 to 0.7 per cent of total emissions in the Sydney basin.

Understanding air quality

The EIS assessed the air emissions expected to be generated during construction and operation of the proposed airport. These emissions were compared against relevant standards including the *Airports (Environment Protection) Regulations 1997* ambient objectives, NSW Environmental Protection Authority (EPA) criteria, and the National Environment Protection (Ambient Air Quality) Measure advisory reporting goals.

The air pollutants assessed include:

- nitrogen dioxide (NO₂);
- sulfur dioxide (SO₂);
- carbon monoxide (CO);
- dust (primarily during construction);
- air toxics;
- odour;
- greenhouse gases; and
- particulate matter (PM₁₀ and PM_{2.5}).



Understanding the terminology

Particulate matter: A complex mixture of extremely small solid and liquid particles suspended in air. Major sources of particulate matter include dust and smoke.

Air toxics: Air pollutants that are considered hazardous to environmental and human health, including benzene, dioxins, lead and other metals. Major sources of these toxics include motor vehicle exhaust and some commercial and industrial processes.

Greenhouse gases: Any gas that absorbs and re-emits heat into the atmosphere. Major types of greenhouse gases include carbon dioxide (CO₂), nitrous oxide (NO) and methane (CH₄).

Air quality impacts during construction

Construction of the proposed airport may result in dust emissions during both the bulk earthworks and the construction of the terminals and buildings. The air dispersion modelling shows that predicted dust emissions from construction would be within the NSW EPA criteria and the National Environment Protection (Ambient Air Quality) Measure advisory reporting goals. A proposed on-site asphalt batching plant used during construction may generate some odour, but this would be mostly contained within the airport site.

Air quality impacts during operation

Operation of the Stage 1 development (one runway and around 10 million passengers a year) would result in increased emissions of air pollutants in the region. For all of the pollutants assessed, the EIS found that emissions would largely be within the relevant standards and criteria. The table opposite shows the predicted emissions of selected pollutants from aircraft operations and the equivalent share of total emissions for the entire Sydney basin.

Selected pollutant	Predicted on-site emissions (tonnes per year)	Share of total emissions in the Sydney basin 2030
nitrogen oxides, including NO ₂	368	0.7%
SO ₂	29	0.2%
PM _{2.5}	5	Less than 0.1%
PM ₁₀	5	Less than 0.1%

Air pollutants are generally expected to concentrate in areas away from existing and planned population centres, limiting the impacts on communities. The largest source of air pollutants would be from background road traffic associated with other developments in the region. As a result, many air quality impacts are predicted to occur on roads to the north and north-east of the airport site, largely within the surrounding Western Sydney Priority Growth Area.

Airport operations will have marginal ozone impacts, which are expected to occur downwind of the airport site to the south and south-east, generally away from population centres.

Australia's greenhouse gas emissions for the transport sector are predicted to be 115 megatonnes in 2029–30. The airport site would generate approximately 0.13 megatonnes of greenhouse gas emissions per year during operation of the Stage 1 development—this equates to around 0.11 per cent of Australia's total transport emissions. Aircraft using the airport site, which are not typically included in the estimation of total greenhouse gas emissions for an airport operator, would generate approximately 2.19 megatonnes of greenhouse gas per year.

Reducing air quality impacts

Mitigation and management measures are planned to reduce the proposed airport's air quality impacts. Industry standard practices would be implemented to reduce construction dust emissions, including using water sprays to suppress dust and revegetating exposed areas and soil stockpiles as soon as possible.

The proposed airport would be required to meet ongoing standards as set out in the *Airports (Environment Protection) Regulations 1997*. In addition, the proposed airport will incorporate best-practice features, such as clean energy ground support vehicles, energy efficient heating and cooling plants, and fixed electrical ground power and preconditioned air supply to reduce fuel burn while aircraft are stationed at gates. On-site air quality will be monitored through a dedicated air quality monitoring station at the airport site.

For more information contact the Western Sydney Unit: www.westernsydneyairport.gov.au | 1800 038 160 | wsu@infrastructure.gov.au

The information presented in this fact sheet is a summary; you should also consider the further detailed information in the EIS.