



Western Sydney Airport

AIR QUALITY



Western Sydney Airport will monitor and manage impacts on air quality during the construction and operation of the airport. This will ensure the airport meets air quality requirements set out in the *Airports (Environment Protection) Regulations 1997*.

Reducing air quality impacts

The Environmental Impact Statement (EIS) assessed air quality impacts and emissions from the construction and operation of the airport and found these will be within relevant standards. The EIS also sets out ways to minimise air quality impacts.

The Environment Minister considered the draft Airport Plan against the EIS and included environmental conditions under section 96B of the *Environment Protection and Biodiversity Conservation Act 1999*. The conditions include measures identified in the EIS to minimise air quality impacts from the airport's construction and operation, which were incorporated into the Airport Plan and must be complied with. The Airport Plan provides the authorisation for the construction and operation of the Stage 1 development.

Assessing air quality

The air pollutants assessed include:

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



Air quality impacts during construction

During bulk earthworks and construction of the terminal and buildings there may be dust emissions. The EIS modelled air dispersion and found that predicted dust emissions from construction would be within the NSW Environmental Protection Authority (EPA) criteria and the National Environment Protection (Ambient Air Quality) Measure advisory reporting goals.

Western Sydney Airport will use standard practices to reduce dust emissions, such as using water sprays to suppress dust and revegetating exposed areas and soil stockpiles as soon as possible. A proposed on-site asphalt batching plant to be 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) is expected to increase emissions of air pollutants. However, the EIS found that emissions would largely be within the relevant standards, and represent an increase of just 0.1 to 0.7 per cent of total emissions in the Sydney basin. The following table 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%
Sulfur dioxide (SO ₂)	29	0.2%
Particulate matter (PM _{2.5})	5	Less than 0.1%
Particulate matter (PM ₁₀)	5	Less than 0.1%

Air pollutants are generally expected to concentrate in areas away from existing and planned town centres, limiting the impacts on communities. The largest source of air pollutants will 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.

Airport operations may have marginal ozone impacts, which are expected to occur downwind of the airport site to the south and south-east, 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 — around 0.11 per cent of Australia's total transport emissions.



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).