Department of Climate Change, Energy, the Environment and Water

Air Program Logic

NSW GOVERNMENT

Broader goal

Connects to broader social, economic and environmental goals

NSW state outcomes	NSW Clean Air Strategy	National Clean Air Agreement	Climate Change (Net Zero Future) Act
Create a strong and liveable NSW	Improve air quality and health outcomes across NSW	Strengthen air quality management to reduce air pollution and exposure in NSW	• Net-zero emissions • NSW more resilient to climate change

End-of-program outcomes (4+ years)

Effects on the environment, society, economy, organisation, or communication (information used to guide decisions and policies).

Enhanced evidence of air quality impacts enables improved decisions on environment and public health outcomes

Enhanced amenity and liveability outcomes for New South Wales

Intermediate outcomes (2–4 years)

Changes in what individuals or groups know, their skills, attitudes, goals, intentions, practices, and behaviours (information understood, applied, and changes in practice).

Communities use air quality information to take preventative action to minimise personal exposure

End users know how to use air quality information for risk assessments and cost benefit analyses, including impact of net-zero emissions

The community and policy investigators use air quality science information in decision and policy making

NSW Government uses net-zero emissions modelling and reporting to track progress towards net-zero objectives

Immediate outcomes (annual reporting)

Changes due to direct results of actions and activities (e.g. increased awareness, engagement, and participation)

End users understand the air quality metrics and categories, and are aware of the significance of local and regional air quality

The community, government and business decision makers have access to the right air quality and net-zero modelling information, at the right time and at the right scale

Enhanced stakeholder engagement and collaboration on air quality science and management

NSW Government is recognised as an expert in net-zero emissions pathway analysis and modelling

Advisory services and communications on air quality issues

Outputs

Products, services and deliverables

- Operational and continually improving air quality monitoring network
- Air quality data, information and reporting
- Air quality forecasting and nowcasting

- Automated air quality alerts messaging system
- Emergencies and special incidents assessment
- Tools to quantify net-zero policy benefits
- Sources ranked by impact

- Communication protocols
- Integrated air pollution modelling and impact assessment
- Projected air quality and public health benefits of proposed interventions

Activities

Key activities to address the problem may also include foundational activities that underpin the program

Monitor, map and forecast air quality
- Maintain and enhance/expand air quality monitoring network
- Monitor at hotspot road corridors and emergency incidents
- Maintain accreditation
- Data validation and interpretation
- Model and map air quality
- Short-term air quality forecasting and nowcasting
- Monitor and assess air quality impacted by smoke, drought and high temperatures

Impact assessment
- **Measure** health impacts of air pollution on the NSW population and co-benefits economic cost and social burden of air pollution on NSW
- **Analyse** source contributions, climate change induced hazard events, and progress towards net-zero targets and objectives
- **Assess** urban climate and impacts on vegetation, and impacts of major energy transitions such as hydrogen

Continuous improvement
- Evaluate and model intervention scenarios and air quality-climate change interactions
- Build knowledge and understanding of clean air technologies, emissions modelling and economics
- Strategic partnerships with initiatives, council, fire agencies, safe-works, NSW Health, Chief Scientist, NSW Department of Education and Transport for NSW
- Communication platforms to meet community needs
- Future development for air quality management
- Case study and article development

Foundational capabilities

Monitoring
- Network-based meteorology and air quality monitoring
- Statewide network (e.g. DustWatch, rural sites, low-cost sensors)
- Advanced measurement techniques
- Specialised monitoring for incidental emissions and hot-spots

Data acquisition, storage and web-publishing
- Database management systems
- Web content management

Quality management
- Calibration Reference Laboratory
- ISO17025 accredited Quality Management System (instrument calibrations, auditing, competency training)

Air quality forecasting framework

Data interpretation and advisory services
- Data interpretation tools and platforms
- Periodic reporting
- Expert advice, (e.g. air quality impact assessments, incident reporting)

Modelling
- Meteorological
- Chemical transport
- Exposure risk and health improvement
- Emissions (air pollutants including greenhouse gases)

Leadership
- Community engagement (citizen science)
- Guiding and collaborating on external programs
- Strategic delivery partnerships

Program scope

Understand current air quality and its effects, how it has changed over time, and how it might change in the future.