

Protecting our urban environment

Exhaust Control Industries Air and noise pollution control specialists



Exhaust Control Industries

Protecting our urban environment for over 30 years

Exhaust Control Industries (ECI) has become the recognised leader in air and noise pollution control in Australia.

ECI has been developing innovative pollution and noise control technology for over 30 years. Designed using world-class engineering and CAD facilities, our products are not only manufactured in Australia, but we are a 100% Australian-owned company. As a leader in the field, ECI provides emissions and noise control solutions around both Australia and the world.

Our product range is comprehensive and we customise solutions for any pollution or noise condition where product performance levels are critical.

ECI is committed to continuously improving the environment. We are proud to offer this technology to improve working and urban environments, air quality, and to further reduce greenhouse gas emissions worldwide.

Talk to the experts.



SCR NO_x Abatement Systems

Leading the way in Selective Catalytic Reduction (SCR) NO_x Abatement Systems in Australia and around the world

Current and future Co-generation and Tri-generation building projects that feature the ECI Selective Catalytic Reduction (SCR) System and Oxidation Catalyst continue to set the industry benchmark for both business and environmental sustainability. ECI's constant testing, research and development ensures maximum reduction of harmful pollutants into the lower atmosphere, which reduces smog.

Emissions (NO_x) treatment

The emissions from power stations or engines typically contain NO_x. NO_x is a generic term for mono-nitrogen oxides NO and NO₂ (nitric oxide and nitrogen dioxide). They are produced from the reaction of nitrogen and oxygen gases in the air during combustion, especially at high temperatures. In the lower atmosphere, NO_x combines with reactive organic gases in the presence of sunlight to form ground-level ozone, which is the primary component of urban smog.

With the ever-increasing need for power generation, coupled with stringent air policy regulations, the SCR system for NO_x abatement is widely used in large power stations and process plant applications around the world.

The ECI SCR system

Selective Catalytic Reduction is a post-combustion control technology capable of reducing NO_x emissions by 80-95+ percent. The ECI SCR system selectively reduces NO_x by combining liquid Urea/Ammonia (NH₃) and Oxygen (O₂), with NO_x in the exhaust gas, in the presence of a catalyst to form molecular nitrogen (N₂) and water (H₂O).

SCR, in conjunction with various oxidation catalyst options, produces beneficial and accountable NO_x, CO (Carbon Monoxide), VOC (Volatile Organic Compounds) and PM (Particulate Matter) emission reductions.

ECI Oxidation Catalyst

The addition of an Oxidation Catalyst onto an SCR NO_x Abatement system will further reduce levels of CO (Carbon Monoxide), hydrocarbon and VOC (Volatile Organic Compounds) emissions by up to 80%.

Further treatment can be applied by diesel fuel applications, that is, with the addition of Particulate Filters that provide Particulate Matter (i.e. soot) reductions of up to 95%. These Particulate Filters oxidize the Particulate Matter to offer an environmentally sustainable option for diesel fuel applications.



Catalyst Systems

Reducing harmful emissions in diesel, chemical and industrial operations

ECI Australia is a major producer of universal catalytic converters and direct fit models. We offer great flexibility in design parameters such as diameter, length, cell density, wash coat type and loading.

Our products can be tailored for a broad range of applications, including:

- Transport vehicles
- Food and beverage
- Data and communication centres
- Industrial
- Health
- Construction
- Mining
- Marine
- Power generation, including:
 - Standby power
 - Emergency power, and
 - Community power.

**Oxidation Catalyst Systems
(also known as Catalytic Purifiers)**

Oxidation catalyst systems are used to reduce harmful exhaust gas emissions such as carbon monoxide and hydrocarbons from diesel and gas engines in both stationary and mobile applications.

Catalytic purifiers are used to control exhaust gas emissions in applications such as underground mining equipment, forklift trucks, emergency generator sets, stationary engines, trucks and buses. ECI also manufactures a comprehensive range of catalytic purifiers designed to suit internal combustion engines operating on diesel, LPG, LNG, CNG or unleaded petrol.

Catalyst Coatings

Catalytic coatings for soot traps and flow-through catalysts in both ceramic and metallic substrates reduce harmful emissions in chemical and industrial processes as well as from diesel exhausts.

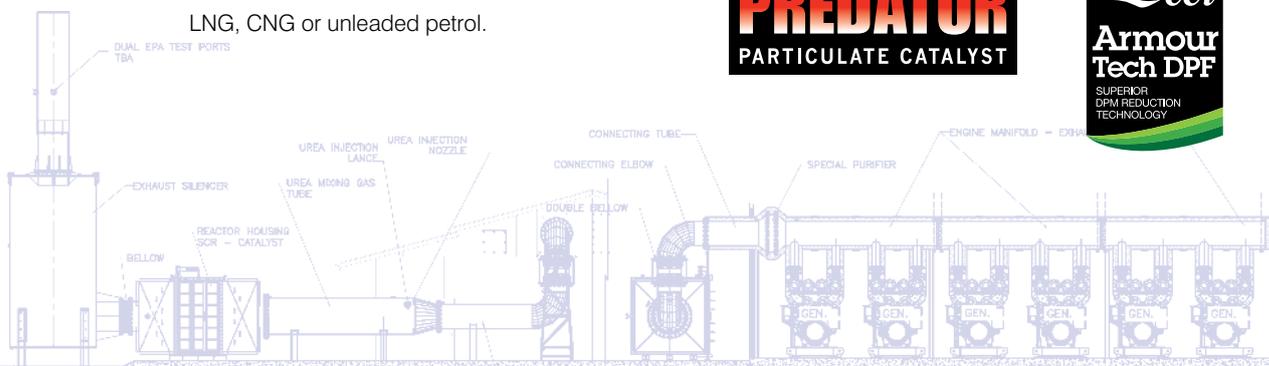
Predator™ Particulate Catalyst

Predator Particulate Catalyst is an open filter structure, developed to trap particulate matter in LD and HD diesel vehicles. Predator can reduce particulate matter emissions by up to 80%.

Armour Tech Diesel Particulate Filters

Diesel engines operating in close proximity to people can be a source of potentially harmful carcinogenic particulates as well as carbon monoxide and hydrocarbons. ECI designs and manufactures diesel particulate filters specifically to reduce these harmful emissions from diesel engines.

Typical work environments requiring controlled decreased particulate emissions include underground mines, tunnels, quarries, high rise buildings, warehouses and vehicles operating in densely populated areas, docks, ship holds and airports. ECI diesel particulate filters are self cleaning, do not wear out and will remain active for many thousands of hours. They are available in silica carbide or cordierite materials.



PREDATOR™
PARTICULATE CATALYST

eci
**Armour
Tech DPf**
SUPERIOR
DPM REDUCTION
TECHNOLOGY



Silencers and waste heat recovery

Providing quieter work environments and utilising waste heat for energy efficiency

Waste Heat Recovery

Waste heat from diesel and gas generators is recovered and used for making steam or hot water in hospitals, holiday resorts and power plants. ECI manufactures a comprehensive range of recovery systems to the AS 1210 standard. Complete turnkey packages are available including the total mechanical installation of the generator set and its ancillary equipment.

Spiral Silencers

Cowl high performance, compact exhaust systems reduce exhaust noise from diesel and gas engines where space is limited. They are suitable for vessels, mining equipment and, in particular, forklifts. Cowl silencers have a spiral chamber configuration that allows free flow of gas through a uniform cross section partially lined with stainless steel wool and mesh. Noise is diffused and progressively attenuated as exhaust gas passes through the spiral. ECI import, distribute & install a comprehensive range of Cowl silencers.

Silencers

Intake and exhaust silencers are designed and manufactured to suit all types of engines including stationary generators, pumping sets, compressors, ships, mining equipment, trucks and buses. The comprehensive product range includes both reactive and absorptive designs suitable for industrial, residential and super critical levels of sound attenuation.

Acoustic Products

Acoustic products include enclosures, ventilation silencers, acoustic panels, acoustic doors and noise attenuating louvers. They are used for the reduction of unacceptable noise levels from diesel and gas engines and other critical acoustic applications. ECI design, manufacture and install acoustic products for a wide cross section of applications. Single packaged acoustic enclosures are available up to 4 MW in size.



Why use ECI pollution control products?

Diesel exhaust emissions classified as carcinogenic

In June 2012, the International Agency for Research on Cancer (part of the World Health Organisation) updated diesel engine exhaust to the classification '**carcinogenic to humans (Group 1)**'. This is the highest classification and indicates that diesel exhaust damages the DNA, or genetic material in body cells in a way that leads to cancer. The Group 1 classification places diesel exhaust alongside toxins such as asbestos, benzene, formaldehyde and arsenic.

Exposure to diesel exhaust can have immediate harmful health effects. Those most vulnerable are children whose lungs are still developing and the elderly who may have other existing health problems.

The following substances are present in diesel exhaust:

- **Ozone (precursors, NOx and VOC)**
Effects: eye and respiratory irritants, asthma exacerbation, bronchitis and irreversible lung damage.
- **Oxides of nitrogen**
Effects: respiratory irritant, immunosuppressant and asthma exacerbation.
- **Carbon monoxide**
Effects: headaches, irritability, impaired judgement and memory, breathlessness, aggravation of angina and other cardiovascular diseases, developmental toxicity and death.
- **Particulate matter (i.e. soot)**
Effects: Respiratory irritant with higher levels associated with increased incidence of cardiovascular and lung failure.

Pictured Green Square North Tower project, Brisbane Australia.

ECI worked with Leighton Contactors to achieve a 6 Star Green Star rating. ECI's customised design met plant room requirements as well as stringent Brisbane City Council air policy regulations.



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ECI is the leader in Co-generation and SCR technology in Australia.

Our air and noise pollution control products include Silencers, Mufflers, Diesel Particulate Filters, Diesel Particulate Catalyst, Catalytic Purifiers, Waste Heat Recovery Systems and Acoustic Enclosure Products.



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