

# THE KEY BENEFITS OF AN ECOGATE SYSTEM



## SAFETY

Ecogate maintains minimum airflow in ductwork.

Ecogate helps greatly to minimise safety risks. Dust that isn't adequately removed is harmful to employee health and ultimately poses fire and explosion hazards.



## SAVINGS

Ecogate cuts energy usage and saves you money.

Electricity saved is money saved. Less air volume equals slower fan, which means less energy costs and ultimately more money in your pocket.



## ENVIRONMENT

Ecogate reduces a company's environmental footprint.

Ecogate helps your company to reduce its impact on the environment by significantly reducing the amount of electricity used in your production process.



## FUTURE

Ecogate allows for future expansion of the production process.

Ecogate optimises your fan to support all current workstations and more. This means less unnecessary capital expenditures when expanding.



## RELIABILITY

Ecogate is designed for long-term use in industrial environments.

Ecogate products are designed for long-term use in tough industrial environments. Cheaper alternatives may end up costing more in replacements and repairs.



Ecogate's motorised dampers, which open and close automatically when machines come on or off-line, can be included with a new system installation or retro-fitted into existing ductwork.

Ecogate's greenBOX Controllers continuously determine the optimum fan speed to exactly match demand for extraction, and the Power MASTER variable speed drive unit adjusts power to the fan accordingly.



For more information on how an Ecogate installation could benefit your operation, please contact:

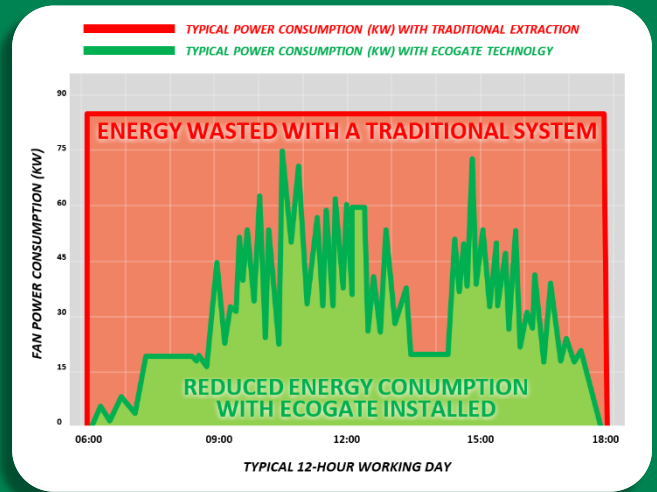
# WHAT IS ECOGATE?

The world-proven Ecogate system significantly enhances dust and fume extraction systems through the application of technology and controls.

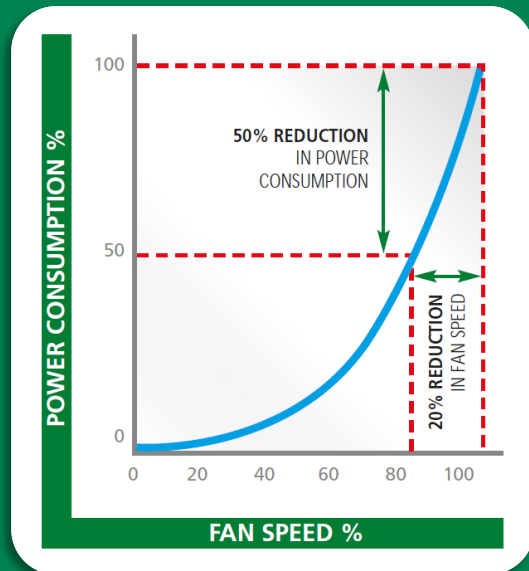
Manufacturers' dust and fume extraction systems have basically worked on the same principle for decades... extracting all the air, from wherever harmful waste is being produced, all of the time, every working day.

That's obviously very costly, and also not very smart... and that's the key insight behind Ecogate technology.

By only extracting polluted air when and where it's being created, using intelligent controls, an Ecogate system will use less than 50% of the electricity consumed by traditional systems and, in addition, all other parts of the system work more effectively to deliver further benefits and savings.



## HOW DOES IT WORK?



20% reduction  
in fan speed  
cuts power  
consumption  
by 50%



Ecogate technology is based on the laws of physics and, in overly-simplified terms, it's the relationship between fan speed, extraction volume and power consumption that provides the explanation.

Fan speed and extraction volume are directly proportional; a change in fan speed, changes extraction volume by the same percentage. However, the relationship between fan speed and power consumption is cubic<sup>3</sup>, which means a relatively small reduction in fan speed achieves a much larger reduction in electricity consumption.

As a rule of thumb, Fan Laws dictate that just a 20% reduction in fan speed achieves a 50% reduction in power consumption. The more complex side of the science is the technology which ensures that reducing fan speed, and the resulting volume reduction, can be achieved without affecting extraction system efficiency.

Although traditional extraction systems operate continuously, at full power, all the machinery in a typical joinery shop is rarely in operation at the same time. Ecogate technology constantly monitors machine usage and, when machines come on and off line, the system calculates the exact change in extraction volume required, in real-time, and adjusts fan speed to match demand, and to optimise energy consumption.

The computer-controlled system is also designed to maintain minimum airflow in the ductwork system; delivering good system balance and preventing sawdust from settling in the ductwork.

The system employs automatic motorised gates and remote sensors, which signal the controller to open or close appropriate gates when a machine comes on or offline. The central control unit, or greenBOX®, constantly monitors individual machines and determines the optimum fan speed, which is achieved via a variable speed drive unit – the Ecogate® PowerMASTER™.