

## 1 INTRODUCTION

EcoStation is a joint initiative of the Victorian Environment Protection Authority (EPA) and the Victorian Transport Association (VTA) designed to reduce greenhouse emissions and air pollution from the road freight sector.

A key aim of EcoStation is to promote a sharing of information about the practical actions that can be taken by industry stakeholders to improve the fuel efficiency of road freight operation and to reduce the emissions associated with these vehicles.

With this aim in mind, EcoStation is producing information sheets that will provide commercial vehicle operators with guidance on a number of potential improvement actions with a view to encouraging increased adoption of these programs by industry. This information guide discusses the concept of idle reduction.

## 2 DESCRIPTION

Reducing the time spent idling has the potential to reduce fuel consumption and deliver greenhouse gas and air quality emissions benefits.

The initiative revolves around modifying the common practice of idling during delivery stops on urban routes. Idling consumes fuel at variable rates, with research suggesting two to three litres of fuel consumed per hour of idling.

Educating drivers in the benefits of switching the engine off during these periods can lead to a reduction in unnecessary engine operation and presents a cumulative fuel saving opportunity.

Note that idle reduction, particularly in the United States, often refers to overnight idling practices in which

a sleeper cab and its amenities are powered by the truck's engine during a long-haul application. There are a number of technology options to reduce this form of idling. However, as this practice is not commonly undertaken in Australia, the focus of this guide is on short-term idling practices and behavioural change.

## 3 IMPROVEMENT RATIONALE

Idle reduction is based around the simple notion that by reducing the amount of time that a vehicle's engine is running unnecessarily, the average fuel consumption of the vehicle can be reduced. This in turn delivers reduced fuel costs for fleet operators and lower greenhouse emissions and air pollution for the community.

## 4 POTENTIAL BENEFITS

Although the reduction in unnecessary idle time generates a guaranteed reduction in fuel consumption, it is difficult to quantify this amount due to the current uncertainty and variability associated with baseline idle times. Nevertheless, research suggests that light commercial vehicles consume between two and three litres of fuel per hour idling, and emit approximately 2.3 kilograms of carbon dioxide per ten minutes of idle time.

On urban delivery routes with frequent stopping, cutting these idle times delivers an instant fuel saving and reduction in greenhouse and particulate emissions.

Due to the fact that the potential benefits relate to the improvement of current practices, the actual benefits of idle reduction is subject to a significant level of uncertainty.

## 5 ASSESSING FLEET SUITABILITY

Idle reduction is most effective for fleets that operate on urban delivery routes with frequent delivery stops. These conditions are considered likely to be subject to the greatest level of idling, accumulated over numerous small instances but leading to a significant idle period over time. Fleet applications considered unsuitable for this initiative include regional freight and delivery routes which are likely to be subject to longer unloading times during which idling is not a common practice.

This initiative is therefore considered to be most effective for vehicle operation that is characterised by frequent stopping rates of a duration that encourages idling rather than switching the engine off.

## 6 IMPLEMENTATION CONSIDERATIONS

One of the primary advantages of reducing idle time is that it is a low cost initiative that brings immediate savings. Educating drivers comes at a relatively low cost and can be integrated with existing driver education programs around safety and other issues. However, as with any fuel saving initiative that requires behaviour change, it is necessary to ensure ongoing education to bring about the cultural change needed to prevent drivers reverting to poor practices.

Another key challenge relates to the difficulties associated with quantifying the fuel saved via idle reduction. This is primarily due to the variation in idle time that can be imposed by factors outside driver behaviour, such as the nature of the delivery route on a given day.

The use of telematics systems can potentially overcome this uncertainty by collecting detailed data including idle time and fuel consumption. While the installation of these data loggers increases the cost, it does provide the opportunity to make a more robust assessment of the fuel savings and emissions benefit of reducing idle time.

## 7 RESOURCE INFORMATION

Additional information on idle reduction can be obtained from the following sources.

### 7.1 OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

The Oklahoma Department of Environmental Quality has produced a factsheet detailing the costs and environmental benefits of engine idling, and the benefits of reducing idle time. This factsheet can be downloaded at:

<http://www.deq.state.ok.us/factsheets/air/dieselidlereductionwlinks.pdf>

### 7.2 TOLL-IPEC

The CleanRun program, in partnership with Toll-IPEC, has found companies can save \$300 worth of diesel a year and reduce diesel emissions by up to 200 litres in the same period by having light commercial drivers cut idling times by three hours per week.

The joint initiative was so successful that Toll-IPEC has found 79% of its drivers have extended environmentally friendly practices by turning off lights as well as reducing idling when driving their cars.

More information about this initiative can be obtained by visiting:

[http://www.dec.wa.gov.au/index2.php?option=com\\_docman&task=doc\\_view&gid=2978&Itemid=797](http://www.dec.wa.gov.au/index2.php?option=com_docman&task=doc_view&gid=2978&Itemid=797)

### 7.3 CITY OF RICHMOND FLEET, CANADA

Implementing a fleet-wide idle reduction awareness program realised a reduction in fuel consumption of 160,000 litres over the first year, and 170 tonnes of greenhouse gases. The following three months saw a further reduction in fuel consumption of 30,000 litres, despite a growth in the fleet of 6%. More detail on this initiative can be found at:

[http://www.idlefreebc.ca/docs/Gerry\\_Hay\\_Richmond.pdf](http://www.idlefreebc.ca/docs/Gerry_Hay_Richmond.pdf)

#### 7.4 FREIGHT BEST PRACTICE, UK

The UK Department for Transport Freight Best Practice program works with corporate fleets to test and assess fuel efficiency opportunities.

The program conducted a trial with four UK fleets that examined the potential for fuel savings from idle reduction campaigns. The results indicated that although not all vehicles would realise an improvement in fuel efficiency, the average percentage improvement in miles per gallon was 1.2–5% for the assessed fleets.

At the close of the program, annual fuel savings were estimated to be 8000–65,000 litres of diesel, and 20–170 tonnes of greenhouse gas emissions. All programs were implemented at minimal cost, with education and awareness being the primary focus of investment.

For more information visit:

[www.freightbestpractice.org.uk/engine-idling-costs-you-money-and-gets-you-nowhere](http://www.freightbestpractice.org.uk/engine-idling-costs-you-money-and-gets-you-nowhere)

#### 7.5 BARTELS TRUCKLINES

This case study outlines a driver incentive program aimed to keep idling to a minimum. Bartels' scheme operates under the premise that if a driver has under 20% idling for the quarter, the driver receives a gift. In addition, the top three idling reducing drivers receive various gift packages. The company's fuel efficiency has increased from 5.6 miles per gallon to 6.37 miles per gallon and the fleet-wide idling average is 22.5% of total engine use.

<http://www.epa.gov/smartway/transport/documents/case-studies/profile-bartels-truckline.pdf>

## 8 FURTHER INFORMATION

Further information about EcoStation, including program participation, can be obtained by contacting the EcoStation Project Manager on:

(03) 9646 8590

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