

Sustainable Fleet Management Program

COUNCIL NAME

City of Sydney

WEB ADDRESScityofsydney.nsw.gov.au**SIZE**

26.7 square kilometres

POPULATION

191,918

Overview

The City of Sydney is investing in cleaner, greener vehicles and fleet management systems to drive down greenhouse gases and help abate climate change. Taking measured risks in trialling new low emission technologies, changing fleet management practices and ensuring a sustainable culture is embedded within the City of Sydney are key success indicators. The City's Fleet Management Strategy and Asset Management Plans are the key drivers and detail a range of inter-linked initiatives to achieve ambitious emission reduction targets. The vast majority of initiatives have required challenging proven products and common management practices. Significant emission reductions have been achieved by the City.

Background

The Sustainable Sydney 2030 strategy established 10 strategic directions, one of which was to become a 'Leading Environmental Performer'. To prove that performance, ambitious targets were developed to reduce the City's greenhouse gas emissions by 70% before 2030. Fleet emissions contribute about 7% of the City's total emissions, so strict emission reduction targets were also developed for vehicles, plant and equipment. The Fleet Services unit sought to reduce greenhouse gas emissions from the fleet by 20% over the four years to the end of 2013/14.

A comprehensive program of initiatives was developed, to make work practices more sustainable and develop an eco-driving culture. Although initially a local approach to sustainable fleet management, papers on the City's sustainable fleet procurement strategies have now been delivered at international and national best practice conferences. The City has also worked closely with Local Government NSW to share its knowledge, experiences, successes and failures with other councils across the State. Providing a leadership role and trying new ways for the benefit of others is part of the City's role as a global city.

Implementation

The program commenced in 2009/10 with baseline data capture, a scan of sustainable fleet initiatives and national and international research on available products and best practice. A gap analysis identified priorities and barriers in securing a more sustainable fleet through 11 key programs:

- Tendering - Environment performance is now a mandatory inclusion in fleet procurement evaluation, with minimum Euro 5 compliance standards specified in all vehicle tenders.
- Asset Management - Optimal intervention points for procurement and disposal are identified through proactive asset management plans and data peaks in maintenance costing, fuel consumption and emissions.
- Warranties - A close focus on warranty performance informs future purchases and in the case of biofuels, engine warranties have been transferred through the tendering process to the fuel supplier, minimising Council's risk and optimising fuel quality.
- Fleet Composition - Utilisation reviews and increased resource sharing enabled the fleet to reduce from 600 to 450 items without a reduction in service delivery. Disposal of over-sized vehicles and imposing emission caps enabled a much smaller vehicle format.
- Electric Vehicles - The City was a foundation partner with Mitsubishi in introducing the first zero emission electric vehicles (EV) to Australia. The EV fleet has now expanded to 18 with the introduction of Nissan Leaf electric vehicles this year. All EV charging is zero emission and offset through the installation of Solar Photo Voltaic based renewable energy systems on Council buildings.



- Biodiesel - The City tendered for sustainable biofuels in 2011. The fuel supplied comprises of recycled cooking oil and waste animal fats, is locally produced and doesn't contribute to land clearing, habitat destruction, overseas transport miles or increased food prices in developing countries.
- Hybrids - More than 40 hybrid cars and 66 diesel-electric hybrid trucks have been added to the fleet which save up to 30 per cent in CO₂ emissions per vehicle.
- Retrofits - 84 older trucks have been retrofitted with particulate filters and catalytic converters to achieve minimum Euro 4 emission standard.
- Eco-Driving - Eco-driver training programs were delivered to operational drivers. A full-time Driver Educator now works in-cabin with driving staff to track and develop their low-emission driving skills and behaviours.
- Bicycles - A staff bicycle fleet provides workers with a sustainable alternative to walking, zero emission pool cars and public transport for trips around town. Taxis remain the last resort in the staff transport hierarchy.
- Harvesting and Recycling Supply tenders for consumable fleet products including tyres, batteries, oils and rags contain a harvest and recycle requirement.

Outcomes

Over the past four years, the City has reduced the carbon footprint of its fleet vehicles by 805 tonnes of CO₂-e (carbon dioxide equivalents) and has achieved its four year reduction target of 20% by the end of 2013/14. Annual CO₂-e emissions were reduced by 26% from 3,155 tonnes to 2,350 tonnes, without reducing the delivery of services to its communities.

Key contributors to reduced emissions were:

- Business trips totalling over 7,000km were travelled by bicycle over the past 18 months, with a direct emission saving on trips otherwise travelled by cars or taxis emitting 4 tonnes CO₂-e per vehicle per year. 18 zero emission, plug-in electric pool vehicles for daily staff use has displaced 4 tonnes CO₂-e per vehicle per year.
- 84 older trucks have been retrofitted with particulate filters and catalytic converters, achieving a 60% reduction in diesel particulate and NO_x gas emissions.
- 80% of six cylinder ULP utility vehicles have been replaced with four cylinder 'Caddy' vans operating on sustainable bio-diesel and displacing up to 2 tonnes CO₂-e per vehicle per year.
- 75% of the total fuel consumed by the City is now sustainable bio-diesel, enabling average emission reductions of up to 18% per vehicle.
- 66 standard diesel mid-sized trucks have been replaced with diesel-electric vehicles allowing a reduction of up to 30% CO₂-e per vehicle.
- 40 standard passenger vehicles have been replaced with hybrid vehicles enabling emission reductions of 2 tonnes CO₂-e per vehicle per year.
- A data based focus on eco-driving education, skills and behavioural change is estimated to achieve a 5% emission reduction for each driver.
- Through proactive asset management and sound data on vehicle condition and emissions performance, the City continues to find the right life cycle disposal points to optimise resale values and minimise emissions.
- Reuse and recycle clauses in consumable fleet supply contracts have minimised solid waste going to landfill and eliminated liquid waste and heavy metal contamination.

In addition to direct emission reductions, the City has seen a proportionate reduction in fuel consumption and costs. Further, there has been an evident culture change among its driving staff with increased knowledge about transport impacts on climate change, and awareness of new and emerging fleet technologies. By far the greatest cultural change however, is in driving more responsibly and demonstrating fuel conscious driving behaviours, which in turn has resulted in reduced vehicle accident claims.

Key Learnings

The main challenges in delivering the program arose during the project strategy phase. Gaining stakeholder acceptance and encouraging drivers to try new technologies was plain hard work. Many drivers had worked for over 30 years with the same vehicle type and driving style, so any change required early input and information about climate change.

Demystifying electric vehicles required active encouragement. They were different, and anxious or hurried staff couldn't spare the time to change. Pro-active inductions and test drives were effective. The 18 EVs are now the most utilised of all.

Staff were initially sceptical and concerned about corrosion or power-loss in their vehicles from using biodiesel. Onsite instruction about biodiesel fuel bowsers, along with reasons for using sustainable, low-emission fuels worked well. Giving drivers the initial choice to continue using service station fuel cards was soon outweighed by the convenience of depot based refuelling.

Eco-driver training programs were developed to provide a greater awareness of the effects of climate change and improve driver skills and behaviours. Emission savings are estimated at 5%, and there is plenty of opportunity to monitor driver results and compare driver performance against base-line data and each other.

The cycling for business take-up rate was initially slow. Convincing a seasoned cyclist to complete a "Cycling in the City" course prior to being able to safely ride a City bike was difficult. Purchasing high quality bikes and safety equipment attracted more riders. New cycling facilities with bike racks, lockers and showers are nearing completion.

The City of Sydney has taken a leadership role in promoting sustainable fleet procurement across Local Government, proving that biodiesel does work, that hybrid and EV vehicles really do reduce emissions, that bicycles are the best transport mode for short trips, that driver education is critical and that most council vehicles are too big for their intended purpose. The City will continue working with Local, State and Commonwealth Governments on emission reduction pilot programs and in developing low-emission standards and regulations. We will continue to advocate and lobby manufacturers on bringing their new low-emission technologies to Australia in an effort to abate climate change. Current work with Hyundai on the development of hydrogen production infrastructure and the introduction of hydrogen fuel cell vehicles to Australia is an exciting new challenge.

Contact

Name: Chris Binns

Position: Manager, Strategy & Assets

Phone: 02 9265 9832

Email: cbinns@cityofsydney.nsw.gov.au

This project was the 2014 Joint Division C winner of the Climate Change Action Award at the LGNSW Excellence in the Environment Awards.