GREENPEACE

GREEN FLEETS

HOW COMPANIES CAN DRIVE DOWN COSTS AND EMISSIONS

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With greener vehicle fleets, companies have the potential to spearhead the reduction of global greenhouse gas (GHG) emissions and oil consumption while significantly reducing costs.

This briefing summarises the findings of a Greenpeace commissioned technical report by CE Delft. It provides an overview of the contribution that corporate fleets (which comprise 50% of new cars in Europe and 54% in the UK) make to global greenhouse gas (GHG) emissions and oil consumption. It also presents an overview of practical solutions that corporate fleet owners can implement to reduce their fuel consumption and fleet costs. The full report is available for download at: www.greenpeace.org.uk/greenfleets

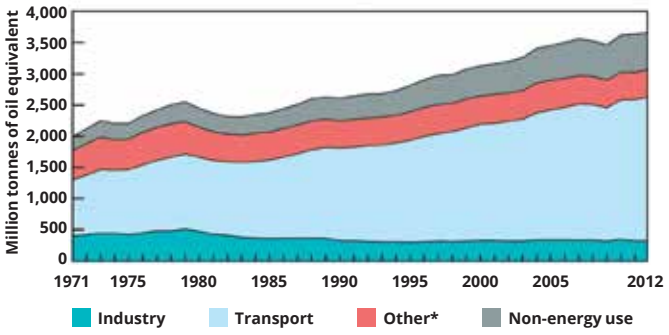
IN THE EU, OIL ACCOUNTS FOR THE BIGGEST SHARE OF CO_2 EMISSIONS FROM FOSSIL FUELS.
OIL: 41% COAL: 33% GAS: 26%

Arctic ice is melting faster each year

Melting Arctic ice is a warning: the visible effect of our over-reliance on fossil fuels. Ironically, as climate change causes the ice to melt, the Arctic itself is becoming accessible to oil drilling vessels. Because our economies are greatly dependent on oil, companies are relentless in their quest for new sources. Meanwhile those same economies are vulnerable to the fluctuations in the price of their imports from the international oil market.

Oil is responsible for more CO_2 emissions than any other fuel in the European Union's 28 countries (EU28). Oil drilling also risks disastrous spills like Deepwater Horizon, to name just one incident. Five years on the devastating effects of crude oil and dispersants on the Gulf of Mexico are still unfolding, and the full costs for wildlife and natural habitats are still unknown.[1] Burning oil-based fuels like petrol and diesel has catastrophic effects on health. The World Health Organisation (WHO) estimates that seven million premature deaths occur annually from air pollution.[2] In the UK, that figure is 29,000.[3] Over 90% of the EU's urban population is exposed to particulate levels above WHO guidelines and transport is a significant contributor to these.[4]

Figure 1: Total final consumption of oil by sector 1971–2012 [5]



*Other: Agriculture, commercial/public services, residential, and non-specified other.
Note: Energy consumption of transport includes international maritime and aviation bunkers.

Transport represents over three-fifths of global oil demand and produces 23% of the world's GHG emissions. In the EU28, transport GHG emissions are dominated by road vehicles.

If we are to avoid the catastrophic effects of climate change and the exploitation of fragile places like the Arctic, we need to radically reduce our oil use by implementing efficiency measures and cleaner technologies. As corporate fleets and their management are the biggest single influence on road transport emissions, companies with green road transport fleets will be leading the way to this vision of the future.

The technology exists to deliver this greener vision. Companies don't have to wait to reduce their dependence on oil and benefit from the cash savings that come with it. Organisations around the world are already incorporating new strategies and have significantly reduced oil consumption and CO_2 emissions. New solutions are emerging every month.

This summary shows how both large and small businesses can pioneer the reduction of GHG emissions. Companies that commit to reducing the environmental impact of their vehicle fleets will see improved efficiency and cost savings.

93% OF TRANSPORT ENERGY DEMAND IS MET WITH OIL PRODUCTS AND ONLY 4%, 2% AND 1% WITH NATURAL GAS, BIOFUEL AND ELECTRICITY, RESPECTIVELY.

Transport drives oil exploration

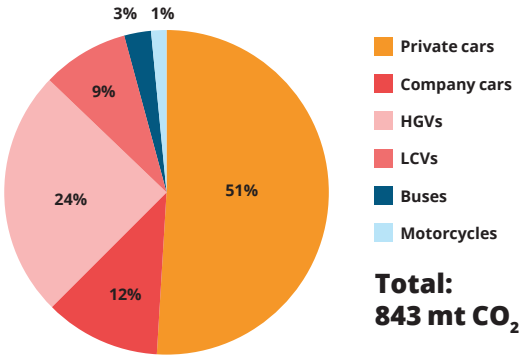
Oil-fuelled transport is a major factor driving climate change. The transport sector as a whole is responsible for a large share of global GHG emissions. It accounts for one-fifth of GHG emissions from the EU. Road transport is by far the most significant contributor, producing 72–81% of emissions from the entire sector.

64% of global oil demand comes from transport. New oil exploration – which is threatening the Arctic – is driven by our reliance on internal combustion engines. Our continued heavy use of vehicles could, with the rapid growth of alternatives, be much more efficient or be replaced by cleaner powertrains.

The corporate chain of change

Companies with transport fleets are the key to driving down oil demand. Passenger cars, light commercial vehicles (LCVs) and heavy goods vehicles (HGVs) are the source of up to 99% of road transport GHG emissions, and companies are by far the most significant purchasers of new vehicles. Around half of all new EU passenger cars, most LCVs, and nearly all HGVs are purchased by companies or other fleet owners. Companies that invest in greening their fleets will play an instrumental role in reducing GHG emissions.

Figure 2: Contribution of corporate fleets to the road transport emissions of the EU28 in 2012 [6]



But the benefits of companies pioneering change don't end there. Any reduction in emissions comes from reduced fuel use and so there is a reduction in fuel costs for the fleet owner. Significantly, all these benefits are passed on to the second hand vehicle market.

Most company cars are eventually sold on to the private market, remaining on the road until the end of their useful life. Second hand owners will benefit from the lower fuel use of fleet owner purchase decisions, meaning that GHG emissions remain lower for the life of the vehicle. The decisions of fleet owners therefore have an impact on the environment far beyond their own company's usage of the fleet. Companies have the power to re-shape road transport as a whole, making it cleaner for everyone as well as the environment.

45% OF THE TOTAL GHG EMISSIONS FROM ROAD TRANSPORT IN THE EU COME FROM COMPANY FLEETS, INCLUDING CARS AS WELL AS ALL KINDS OF DELIVERY VEHICLES.

Fuel consumption, fuel costs

Fuel represents 32% of the total cost of fleet ownership. Seeking to lower that cost is a significant incentive for development and use of new vehicle technologies. The total fuel cost of the EU28 corporate fleet can be estimated fairly simply. In 2012, for example, the EU28 corporate fleet consumed approximately 123 billion litres of fuel. This expenditure amounted to around 200 billion euros. A reduction in fuel consumption could typically see annual fuel cost savings of around €850 per car by 2020. The entire EU28 corporate fleet could, depending on the fluctuation in future oil prices, see a reduction of €28 billion.

HALF OF NEW CAR SALES IN THE EU WERE COMPANY CARS. IN THE UK, 54% OF ALL FIRST REGISTRATIONS FOR CARS WERE MADE BY COMPANIES.

Solutions: saving fuel, saving costs

Cleaner corporate passenger fleets can significantly reduce costs

Corporations seeking to reduce their spending on fuel can achieve this and, at the same time, reduce their environmental impact. Lower GHG emissions and less pollution go hand-in-hand with cost reduction strategies. Whether training fleet users in savings made through behavioural change, or investing in new vehicle technologies, there are benefits to both companies and society. As the following examples demonstrate, many companies are already delivering solutions, with both immediate and long-term effects.

IN 2012, CORPORATE FLEET OWNERS SPENT APPROXIMATELY 200 BILLION EUROS ON AN ESTIMATED 123 BILLION LITRES OF FUEL.

Cleaner cars

The regulation of new car CO_2 emissions by the US, Canada and the EU has resulted in significant fuel efficiency improvements and an increasing supply of very fuel-efficient vehicles, including hybrid cars.

Fleet owners can also choose to downsize the vehicles that they purchase. Less fuel consumption, as is generally the case with smaller cars, improves the efficiency of the fleet and reduces GHG emissions.

The implementation of purchasing policies supporting more fuel-efficient cars can produce significant results. Capping new car CO_2 emissions by setting a maximum number of CO_2 grams per km for employee use enforces efficiency in the fleet.

Example: The German company FRoSTA implemented a green company car policy in 2012. Employees at all levels, and without exception, were set mandatory CO_2 emission limits for their new choice of car, depending on their post. These limits are set to decrease each year, encouraging a continuing culture of change. In the first year, FRoSTA made fuel savings of 8% and an emissions reduction of 50 tonnes of CO_2.

ELECTRIC CARS FULLY CHARGED CAN GO 80–480KM.

New green technologies electrify the fleet
The popularity of electric and semi-electric vehicles is due not only to their significantly reduced oil consumption, but also because they send a message about an organisation's values.

Fully electric vehicles (FEVs) currently have a driving range of between 80–480km. Their use of entirely electric powertrains means that there is no oil consumption and no pollution from tailpipe emissions. In the EU, FEVs offer an average reduction in GHG emissions of 50% (by comparison with diesel), and this can be further reduced by sourcing decarbonised electricity.

While fully electric vehicles eliminate oil consumption, plug-in hybrid vehicles (PHEVs) are currently the most practical choice for the reduction of costs and emissions without limitations on the range of travel. For example, GHG emissions from HGVs can be reduced by 8–30% with full hybridisation. PHEVs offer electric motors with a range between 25–80km, and a petrol or diesel internal combustion engine for longer journeys. The reduction of fuel costs relates to the share of electricity in the total mileage. Fleet owners providing a good charging infrastructure and incentives for positive vehicle use can see significant reductions.

The initial investment costs of fully or part electric vehicles are higher. But these costs can be easily offset by tax benefits or subsidies, fuel savings (for vehicles with sufficiently high mileages) and lower maintenance costs.

Case Study: The Norwegian government offers some of the world's most generous subsidies for electric vehicles. The government also plans to give local authorities more say over policies such as allowing electric cars to drive in bus lanes, or to be exempt from parking charges and road tolls. And it might offer more benefits for owners of hybrid cars, which run on petrol and electricity.

Such measures have significantly increased sales of electric vehicless – one in five cars sold in Norway so far in 2015 is battery powered.[7]

Promote new ways of working
Teleworking and teleconferencing save significant amounts of time and money spent on travel. Teleworking for one day a week reduces CO_2 emissions from travel by an average of 14% and can save €2,000 per employee per year. Shifting employees out of cars and into alternative modes of transport can be stimulated in various ways, including financial incentives and travel card schemes. For example, offering multimodal business travel cards to employees can reduce company car kilometres by 7%, while video conferencing can further reduce CO_2 emissions from travel.

Case study: Capgemini Netherlands has implemented a New Way of Working programme which enables employees to work at the most efficient location. The global consultancy, technology and outsourcing company is projecting a reduction in vehicle kilometres and CO_2 emissions in the range of 20–25%

THE MAINTENANCE COSTS OF AN ELECTRIC VEHICLE ARE ONE THIRD LOWER THAN A REGULAR CAR.

Transforming driving patterns
Eco-driving courses encourage fuel-efficient driving behaviour in both passenger and freight vehicles, which can immediately improve fuel efficiency by up to 20% per year. Gains need to be maintained through follow-up monitoring, feedback and additional incentives, but such training and reward schemes can be embedded in a company's culture. The eco-driving approach has the advantage of saving fuel as well as bringing down employee accident rates and reducing maintenance costs.

Case study: TNT Express, one of the world's largest express delivery companies, has implemented eco-driving training alongside an internal driving competition where drivers compete on fuel efficiency, safety and speed. A possible 16% fuel saving was shown to be possible during the training day.

Cleaner freight fleets

There are many ways to reduce the fuel consumption and emissions of HGVs and LCVs. Retrofit technologies are widely available, and these can significantly reduce the fuel consumption of conventional vans and trucks. For example, low resistance tyres can increase fuel efficiency for all vehicles in the fleet, and they can be fitted to conventional cars and trucks.

Technological approaches reduce fuel consumption by reducing aerodynamic drag, rolling resistance, and vehicle-weight, or by improving engine efficiency and transmission. Trucks can be made much more efficient even with one single measure to improve aerodynamics. Emissions from HGVs can be reduced by up to 4% per measure and many measures have a relatively short payback time. Depending on the type of vehicle, the total combined reduction potential is 35–45%.

Fully electric and plug-in hybrid trucks, as well as electric vans, are available already. Purchase costs are currently higher than for conventional vehicles, but emissions can be reduced by up to 30%. The significant reduction in fuel costs, the possibility of subsidies (dependent on country), and the potential avoidance of congestion charges in large cities are making them close to competitive.

Case Study: British Gas bought and tested 28 fully electric vans over a recent six month winter period, to assess their appropriateness. By the end of 2014 100 FEVs were bought for the British Gas fleet. The company has made a commitment that 10% of their van fleet will be electric by 2017 – a projected total of 1,300 electric vans.

From road to barge and train

Utilising trains or barges for heavy goods not only reduces GHG emissions, but enables better logistical efficiency. Real world examples show that improved logistical efficiency can reduce emissions even further by up to 20%. Adopting alternative transport modes – for example, inland navigation or rail transport – can, as in the following case study, reduce GHG emissions further.

Case Study: In the UK, Tesco has replaced a significant number of road journeys with train journeys and seen a reduction in fuel costs by increasing the use of double decker trailers.

Tesco has five trains running at least six days a week carrying goods all over the country. Over 50% of the goods moved from its rail-enabled distribution centre at Daventry are transported by train to Magor in Wales, Thurrock in the South-East, up to Livingston in Scotland then onwards to Aberdeen and Inverness.

Tesco's first European project in multimodal transport started in 2012 with goods containers from the Far East arriving in Bremen, Germany. After trialling the service, Tesco now transports all these goods by train instead of road to its Slovakian distribution centre, for onwards distribution around markets across Central Europe. This saves over four million road miles each year.

Along with other efficiency practices, Tesco reduced its absolute distribution carbon footprint by 6% between 2011 and 2015.

ENDNOTES

1 http://thinkprogress.org/climate/2014/04/20/3428269/bp-oil-spill-four-year-anniversary

2 World Health Organisation - www.who.int/mediacentre/news/releases/2014/air-pollution/en/

3 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf p2.

4 European Environment Agency - http://www.eea.europa.eu/publications/air-quality-in-europe-2013 p8.

5 https://www.iea.org/publications/freepublications/publication/KeyWorld2014.pdf p33.

6 Source: CE Delft expert estimate based on EEA (2014); European Union (2010) & ACEA (2012).

7 http://europe.autonews.com/article/20150512/ANE/150519968/norway-reaffirms-electric-car-subsidies-after-boom

Please note: All non-referenced facts and figures in this summary are from Saving Fuel, Saving Costs, CE Delft, April 2015

About CE Delft

CE Delft is a renowned and independent consultancy, based in Netherlands, focused on energy, transportation and resources, with clients from the NGO sector, governmental bodies and industry.

Greenpeace stands for positive change through action. We defend the natural world and promote peace. We investigate, expose and confront environmental abuse by governments and corporations around the world. We champion environmentally and socially just solutions including scientific and technological innovations.

Greenpeace, Canonbury Villas, London N1 2PN

Tel: +44 (0)20 7865 8100
www.greenpeace.org.uk

For more information, please contact: barbara.stoll@greenpeace.org

This is a summary of the Delft report **Saving Fuel, Saving Costs** which can be downloaded at: www.greenpeace.org.uk/greenfleets