LDV FUEL ECONOMY AND THE G20

The Global Fuel Economy Initiative (GFEI) assists governments and transport stakeholders to achieve greater fuel economy.

Using the skills and expertise of the GFEI partners (The International Energy Agency (IEA), United Nations Environment Programme (UNEP), International Transport Forum of the OECD (ITF), International Council on Clean Transportation (ICCT), Institute for Transportation Studies at UC Davis, and the FIA Foundation), we provide data and research, as well as capacity building support in countries seeking to improve their fuel economy position.

The G20 Energy Efficiency Action Plan was an important outcome of the Brisbane G20 meeting held in November 2014, and included a focus on improving light duty vehicle fuel economy. This short paper summarises the importance of this issue for G20 countries.

Recent GFEI analysis has shown that using existing cost-effective technologies could result in $2 trillion in fuel savings by 2025, and help mitigate increases in carbon emissions from a growing fleet of vehicles in emerging economies. For a country with sales of 1 million vehicles, total fuel savings would reach $3 billion with a 30% increase in fuel economy. These fuel savings can provide valuable resources for other priorities in G20 countries, such as education, health, infrastructure, or indeed the promotion of other transport technologies or modes such as electric vehicles.

The importance of Fuel Economy

Currently there are over 1.5 billion motor vehicles globally, and the number is expected to reach 2 billion by 2020. G20 countries accounted for over 90% of vehicle sales in 2014, at around 80 million, and were also responsible for manufacturing 96% of cars produced.

Globally, the transport sector consumes 48 million barrels of oil per day - half of total production. It is also a major contributor to climate change, with transport consisting of 23% of the 38Gt of anthropogenic CO_2 emissions in 2010, and light duty vehicles responsible for around 9% of these total emissions (3.5Gt).

FIGURE 1

CAR SALES (2014)
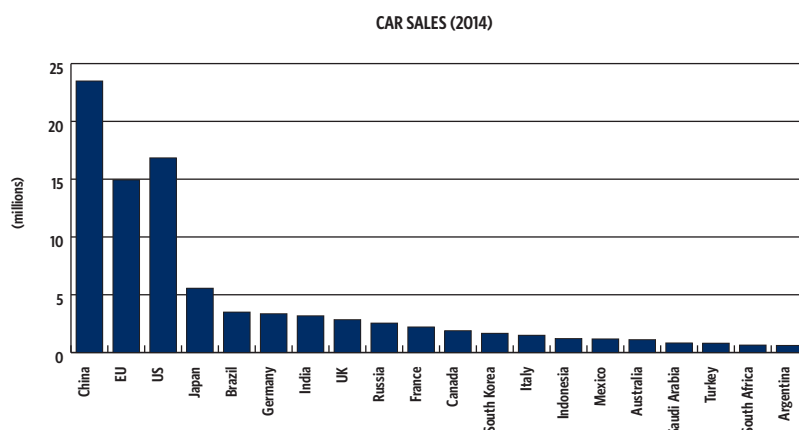
Source: OICA

Transport makes up more than 40 per cent of final energy consumption in the US and Mexico, and over 30% in Saudi Arabia, Brazil and Australia, whereas this proportion is currently less than 15 per cent in India and China. Road transport makes up around 90% of all transport energy consumption in G20 countries.

Energy consumption is rising quickly in G20 countries, so we must act now to improve vehicle fuel efficiency. Saudi Arabia, Indonesia, India and China all experienced more than 5% annual energy consumption growth from transport between 2000 and 2013. Energy consumption from road transport in China (Mtoe) increased by over 200% between 2000 and 2012 (Figure 2).

FIGURE 2

ROAD TRANSPORT ENERGY CONSUMPTION (2000-2012)
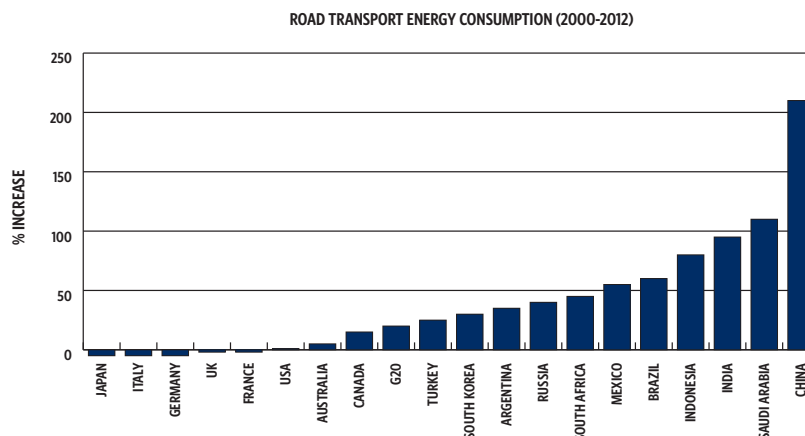
Source: Enerdata

G20 countries and Fuel Economy

GFEI's target is to reduce average fuel consumption by 50 per cent by 2050 through improving the fuel economy of new vehicles by 50 per cent by 2030. GFEI's latest analysis suggests that the global average fuel economy was 7.1 Lge (Litres of gasoline equivalent)/100km in 2013, an improvement on the 8.3 Lge/100km of 2005. However, this is some way short of the 4.2 Lge/100km needed by 2030.

There are a range of targets that different G20 economies have in place to improve vehicle fuel economy. In the EU and US, these are enforced on targets for corporate average fuel economy for each car manufacturer. ICCT defines 'world class standards' for fuel economy as 95g CO_2/km (the EU's 2021 target) or measures to cut new vehicle fuel economy in half from a 2010 baseline (the US aims to do this by 97g CO_2 /km, or 4.2 Lge/100km) by 2025).

Given the many potential benefits which fuel economy could generate for G20 countries, from fuel savings to CO_2 savings, it is vitally important that G20 countries engage with GFEI and our work on this issue.

An important principle of the GFEI is that every country assesses its vehicle market and decides itself the most appropriate steps to improve fuel economy.

Within the G20, there are differences between countries in terms of the size of their vehicle fleets and average fuel economy levels. GFEI's analysis suggests that average fuel economy ranges from 9 Lge/100km (210 gCO_2/km) in the US to 4.9 Lge/100km (115 gCO_2/km) in Japan (Figure 3). However, regardless of any differences, all these markets have the opportunity to contribute to significant reductions in fuel use and carbon emissions.
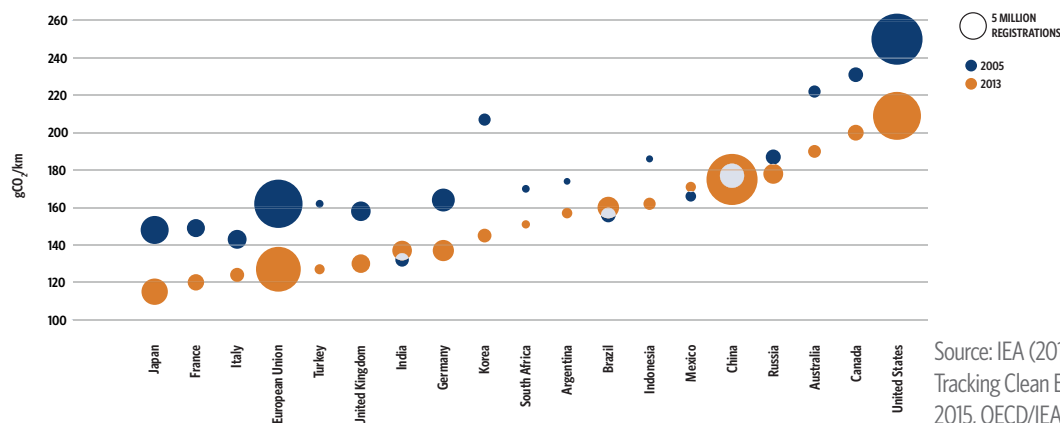

GFEI Executive Secretary Sheila Watson speaking at ITF 2015

Most major economies regulate their vehicle markets with some type of vehicle tailpipe emissions and/or fuel economy standards

FIGURE 3

Source: IEA (2015), Tracking Clean Energy Progress 2015, OECD/IEA, Paris

Fuel Economy measures

An important way of improving the fuel economy of vehicle fleets is to introduce minimum standards, most commonly MEPS (Minimum Energy Performance Standards) or CO2 emission limits. The first fuel economy standards were introduced in the US and Japan in the 1970s and 1980s, while Europe first introduced voluntary standards in the 1990s. Since the only way to reduce CO2 emissions is to improve fuel efficiency of new motor vehicles, fuel economy and CO2 standards are effectively interchangeable. Currently, three quarters of global light-duty sales occur in markets regulated by standards, with 14 of the 20 economies in the G20 covered by mandatory fuel economy standards.

The provision of information on vehicle fuel economy is essential if consumers are to understand the choices available to them. Currently 16 out of 19 countries in the G20 have vehicle labelling schemes for fuel economy (the EU also has a scheme). There are a variety of label designs, most of which use colours and scales to indicate fuel economy performance.

In isolation, labelling systems are unlikely to lead to significant fuel efficiency improvements, but can be highly effective when combined with fiscal measures. For example, the UK and Germany base the annual vehicle tax on a vehicle's average fuel economy, and in South Africa the tax on new vehicles is adjusted for carbon emissions, at $9 per g of CO2 above 120 g/km. France has a combined tax and subsidy scheme ('bonus/malus') which has supported a shift towards more fuel efficient cars. Many countries also have subsidy schemes to promote electric vehicles.

China

Germany

Korea

Australia

Next steps

We encourage all governments to periodically review their approach to fuel economy and ensure that there are implementing cost-effective solutions which maximise the economic and environmental benefits. For governments that have already set challenging targets to improve fuel economy, such as the US, it is important to ensure that these are achieved. Other countries have the opportunity to set stretching long-term targets.

There are also countries within the G20 that are yet to implement standards or other initiatives such as labelling schemes. GFEI, has experience of supporting fuel economy in a range of markets around the world, for example we have helped governments design schemes in countries such as Chile, Vietnam and Kenya, as well as several members of the G20. We can work with any country to help it design an effective scheme that will promote improved fuel economy, and secure financial benefits.

This paper has been drafted by the Global Fuel Economy Initiative (GFEI) at the request of the Transport Task Group of the G20 Energy Efficiency Action Plan. It is solely for informative purposes of the participating countries in that Task Group.

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