

Improving Fuel Economy in Australia

The Global Fuel Economy Initiative convened a meeting of experts on light duty vehicle fuel economy and CO₂ emissions standards in Melbourne on 2 March 2011. The meeting, which was also sponsored by Low Emission Vehicles Partnership (LEV), the Federal Chamber of Automotive Industries (FCAI) and the Royal Automobile Club of Victoria (RACV), was at the invitation of the Department of Infrastructure and Transport of the Commonwealth Government of Australia. The conference discussed potential avenues for regulation and complementary measures in preparation for a regulatory proposal on Australian standards for light duty vehicle CO₂ emissions to be developed in 2011.

The conference was chaired by the International Transport Forum and opened by the Deputy Secretary at the Department of Infrastructure and Transport. Presentations on global CO₂ emission and policy trends followed from the International Energy Agency and the FIA Foundation.

Regulators from the European Commission (DG-Climate Action) and from the National Highway Traffic Safety Administration (NHTSA) in the USA presented the European and US approaches to regulation. They discussed the options considered in developing standards and the evolution of regulation in these jurisdictions. Independent experts from Argonne National Laboratories in the US and from the International Council on Clean Transportation outlined international experience on the development of regulation and the pros and cons of differing approaches to the design of regulatory standards, as well as complementary measures to align market incentives with new standards.

Officials from the Federal Department of Infrastructure and Transport set out the policy context for developing Australian standards and the Federal Chamber of Automotive Industries presented an analysis of the performance of the Australian fleet in relation to light duty vehicles in other major markets. A broad group of stakeholders, including from the Australian vehicle manufacturing industry, car importers and retailers, component manufacturers, car clubs, environmental NGOs and State governments examined the economic and environmental context for developing standards and flanking measures in Australia.

Discussions at the conference led to a number of conclusions on the design of standards and the work to be done in preparation for a regulatory proposal. It was agreed that Australia is in a very good position to develop exemplary standards in terms of simplicity, avoiding distortions and maximising cost-effectiveness.

The GFEI and the international experts in attendance identified a number of broad principles which the international evidence suggests are important for good design of standards, and thus should be considered in the development of standards in Australia.¹ It is, of course, a matter for the Australian Government to determine the applicability of these principles in the Australian context, taking into account the broad range of factors influencing the determination of optimal standards.

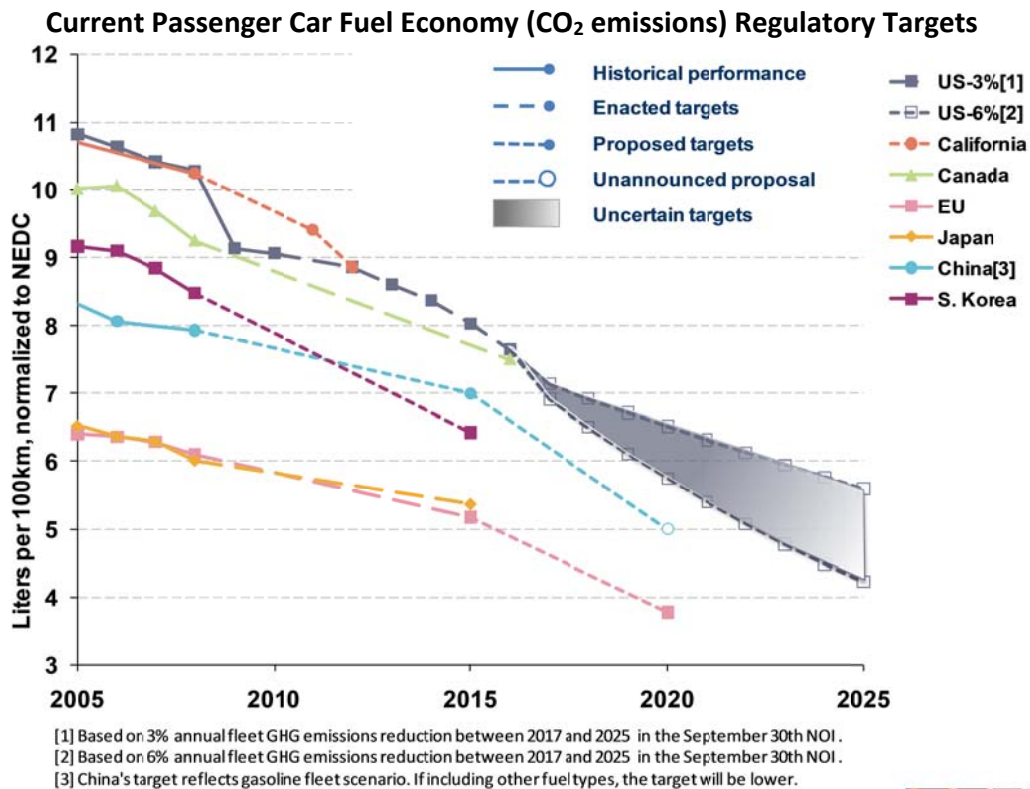
First, **simplicity is a virtue**, and this is reflected in a number of the points that follow.

The global nature of car manufacturing and sourcing of car components implies that the broad potential for technological improvement in light duty vehicle fuel economy and CO₂ emissions performance in Australia is similar to that in US and European markets. Much of the engineering analysis undertaken in Europe and the US to determine the technological potential for improvement should not therefore need to be duplicated for Australia.

Thus while Australian standards need to be considered in the context of the current fleet, they can be expected to generally follow the trend of regulations in other markets and evolve in the space delineated by European and Japanese standards at the lower end of the range, and US standards at the top end of the range (see figure).

That does not mean that Australian standards should simply be copied wholesale from those in use elsewhere. **Australian standards will have to be based on an analysis of the current characteristics of the Australian vehicle fleet.** An agreed baseline for current fuel economy and CO₂ emissions performance first needs to be established as the reference point for regulatory standards. An analysis of the expected future evolution of the Australian vehicle market, in terms of market segments and factors that are likely to differentiate it from the US and European fleets in the coming decade is also required to plot the path for Australian standards.

¹ These principles do not represent the views of the Australian Government or the Department of Infrastructure and Transport. The principles have been put forward by GFEI to contribute to the policy debate in Australia.



Standards and indicative targets should be set over a long term time frame. The Australian Government's commitment involves initial standards from 2015. With this short horizon, these initial standards will not be able to shift the market very far from current performance. Many highly efficient vehicles are available on world markets, and as all vehicle manufacturers operating in Australia are either full importers or supply a mixture of locally produced vehicles and imported vehicles, this affords considerable flexibility to manufacturers to respond to a new standard. However, domestic vehicle production will require sufficiently advanced notice of standards to adjust product planning cycles, and it should be noted that a number of vehicle importers have also advised that they have signed off on model choices up to 2015 and are currently developing product plans for 2016. Thus there would be merit in setting longer term standards to accompany the 2015 limits. These can be both more ambitious and provide manufacturers with the predictability they require to minimise costs and maximise the effectiveness of investments in new technology. The primary focus for standard setting should therefore probably be on 2020 or thereabouts. An expectation of improvement at a sustained or accelerated rate beyond 2020 might also be established in an indicative target. Experience in the EU and US suggests a trend towards accelerating improvement – with around 2% a year improvement feasible for a short term target, and 3-5% pa with longer lead times.

For simplicity, uniform percentage improvements or uniform fixed targets would be desirable, however, international experience suggests that standards will probably need to be differentiated by a vehicle attribute to distribute the effort required by different manufacturers and importers of vehicles equitably. Differentiating the standard by weight or vehicle footprint (area delineated by the wheels of the vehicle) ensures that manufacturers specialising in different types of vehicles face similar constraints. The US has recently switched from a weight based standard to differentiation by vehicle footprint and the EC is reviewing the possibility of switching to a footprint based system. Footprint preserves incentives for reducing the weight of vehicles as a strategy for meeting standards better than differentiating by weight.

A continuous, linear or curvilinear function is preferable for specifying CO₂ emissions or fuel economy to differentiating standards by class of vehicle. Such classes (or bins) can fragment markets and distort incentives through the artificial boundaries they create.

Add-ons to standards, such as bonuses for electric vehicles, biofuels, hydrogen fuelled vehicles and flex-fuel vehicles, should be avoided as they complicate the regulatory task and have the potential to reduce the actual emissions reductions delivered by the standards. Where there is considered to be a case for supporting the development of such vehicles, this is more efficiently delivered through specific instruments outside of the standards framework.

Ideally, a single standard for all light vehicles is preferred to separate standards for passenger cars and light trucks. This helps to avoid problems of distinguishing between segments and between different uses of similar vehicles and the perverse incentives to reclassify vehicles that can result. However, choosing a combined standard for a footprint-based regulation may cause light trucks to assume an especially heavy burden (or cars to assume an easy burden) because of the physical differences of these two classes of vehicles. Some modification of the formula for differentiation by footprint can probably be used to mitigate this effect.²

Demand-side incentives such as differentiated stamp duty, registration charges and company car taxation can be useful in promoting uptake of lower emission vehicles and can be designed to be revenue neutral. They assist manufacturers and importers in marketing low emission vehicles and reduce their risks of having to pay penalties for non-compliance with standards. As with standards, such incentive measures should be formulated as a linear function of CO₂ emissions or fuel economy to avoid fragmentation and distortion of markets. Company car taxation and government fleet

² Similarly, the tendency of weight based differentiation to penalise the use of light weight materials and down-sizing of vehicles to meet standards was mitigated by adjusting the formula currently used to differentiate standards in the European Union.

procurement policies are important as they determine a large part of new vehicle purchases, which then drive the second hand car market and determine fuel economy choices (and thus CO₂ emissions outcomes) for a large part of the population. Taxation and procurement policies should encourage the choice of lower emission cars for company fleets.

In the two days of detailed consultations with stakeholders which followed the main conference, these points were discussed in greater detail. The team of experts brought to the consultations by the GFEI will be available for consultation on the Australian CO₂ emissions standards as they are developed over the coming months.

The principles identified at the Conference by the GFEI and the international experts will be considered by the Australian Government as it develops the system of mandatory standards to be implemented in Australia.