With reference to the document “Light vehicle CO₂ emission standards for Australia - Key Issues - Discussion Paper 2011”, I am pleased to send you the Ferrari S.p.a. (herewith Ferrari) comments and answers to the questions contained in the above mentioned document.

Ferrari appreciates the opportunity to participate in this important rulemaking, and give our small contribution to define the final rule, hopefully harmonized with corresponding regulations already adopted in other countries and regions like European Union, U.S.A. and Canada.

GENERAL COMMENTS

Generally speaking, we support the international harmonization of vehicle regulations, and therefore we appreciate that the Department of Infrastructure and Transport of the Australian Government has taken, as a basis for the Discussion Paper, the main CO₂ emission regulations implemented in EU and U.S.A. We deem that it is better to have harmonized requirements (to the greater extent feasible) to reduce the burden on vehicle manufacturers and avoid a patchwork of different rules in various countries to regulate the same topic. Some changes and adjustments could be necessary, for example to take into account the present situation and the characteristics of the Australian light-duty vehicle market.

Ferrari is favourable to specific measures that increase the flexibility to comply with the CO₂ standards like (but not limited to):

1. Enough lead-time.
2. Implementation with a phase-in with increasing percentage of complying vehicles.
3. Special provisions for small-volume manufacturers and importers.
4. The Averaging, Banking, and Trading (ABT) program, with the option to get credits from other manufacturers.
5. Credits for alternative and fuel-flexible vehicles and advanced technologies (e.g. FFVs, HEVs).

It is important to define regulations which do not penalize certain types of vehicles, and small companies that give a negligible contribution to the total GHG emissions in Australia, as explained in the following. It is necessary to guarantee a level playing field.
SPECIFIC PROVISIONS FOR SMALL-VOLUME MANUFACTURERS AND IMPORTERS

1. Reasons to have specific provisions for SVMs

Ferrari strongly recommends implementing specific provisions to avoid any further and disproportionate burdens on small-volume manufacturers and/or allow them to request alternative CO₂ standards, taking into account the characteristics of their vehicles, the negligible impact over the GHG emissions and fuel consumed in Australia. Furthermore, they have normally more problems than large companies in complying with new or modified regulations for the following reasons.

- **Limited technical and financial resources**

  Small companies cannot afford the technical and financial resources of medium and large manufacturers. This fact has several consequences. It is necessary to concentrate all or most of the resources to one project per time, and it takes more time to complete the design and development process. Therefore, the time-to-market is longer.

- **Only few car lines, often with similar characteristics**

  SVMs have typically only few (2-3) car lines with similar characteristics. CO₂ and fuel economy are therefore similar for their products and they really don’t have the ability to modify the mix of the fleet like large manufacturers.

- **Limited production volumes**

  The annual worldwide production is limited and for each model the total number of vehicles manufactured in its life cycle is reduced to few hundred or maximum few thousand units. Consequently, the total expenses can be distributed over a small production volume with increased costs per unit.

- **Longer production life cycle for each model**

  Typically, small volume manufacturers launch a brand new model less frequently than intermediate or large manufacturers. The production lifespan for each model is longer (on average further 2-3 years) and it is more complicated to introduce relevant changes during the product life. Usually, relevant modifications and adoption of new technologies are associated with the launch of a completely new project.

  For example, our models normally are produced for 7-8 years, with eventually a modified version introduced in the middle of the period. We can confirm that the most important changes are adopted in completely new models, whereas only minor modifications can be introduced in correspondence of the typical refresh at mid production span cycle.

- **Reduced availability of Tier 1 suppliers**

  The limited production is also a problem to find suppliers available to give their systems and components. Some international (“Tier 1”) suppliers are not interested to supply small volume manufacturers because they logically prefer to deal with medium or large vehicle manufacturers that can buy much more systems/components. It does not worth investing resources for Tier 1 suppliers to design and develop solutions specifically for SVMs.
Ferrari Comments on Proposed Australian LV CO₂ Standards

Frequently SVMs are forced to use parts and devices originally designed for other manufacturers and applications, with limited modifications allowed (e.g. calibrations). This is a relevant constraint, especially for certain types of vehicles (e.g. high-performance sports cars) that instead should be fitted with tailored solutions.

On the other hand, small volume manufacturers must rely on suppliers because they cannot design, develop and manufacture most of the systems and components they need.

The compliance problems for small vehicle companies are not temporary, but strictly related to the above reasons and vehicle characteristics that cannot be completely changed. In fact, most of these SVMs are specialized in high-performance sports cars and luxury vehicles. Consequently, they cannot be fixed only by adding more lead-time.

2. Main problems to comply with CO₂ standards

Normally, when developing a rulemaking, the analysis of the cost of each technology that can be useful to comply with the requirements (in this case GHG emissions standards) is made with reference to manufacturers’ direct costs for high-volume production of vehicles with these technologies and sufficient experience with their application.

Costs for compliance are certainly higher for SVMs because they can be distributed over very limited production volumes and the other mentioned problems. Moreover, our vehicles often represent a worst case for certain technologies and suppliers. Some technologies cannot really be adopted or, at least, are not suitable for high-performance sports cars. Therefore, more time and resources are necessary for their design, development and certification, with consequent increment of time and costs.

Ferrari has always manufactured high-performance sports cars and race cars in the past 60+ years. Our customers purchase them for their top performance, excellent driveability, and styling. These features are a prerequisite for us. Therefore, Ferrari cannot afford to dramatically and suddenly change the types of vehicles it manufactures. This should be the same for other SVMs.

Ferrari has already fitted many fuel efficient technologies on its current production vehicles and we have achieved remarkable improvements of fuel economy and reduction of CO₂ emissions over the past few model years. We are quite confident we can reach further reductions in the next few years, especially for the brand new vehicles, in order to lower the average CO₂ emissions of our fleet worldwide. But it should be admitted the technical infeasibility to comply with stringent targets for high-performance sports cars if we want (and really we need) to keep their distinctive characteristics.

Although our negligible contribution, we are committed to continue to reduce CO₂ emissions (and to improve fuel economy) of our vehicles, but we need specific provisions and targets.

3. Specific provisions for SVMs in other CO₂ regulations

Both the European Regulation 443/2009/EC and the final U.S. EPA GHG rule for MYs 2012-16 contain exemptions and special allowances for small-volume manufacturers.

The EU Regulation allows a SVM (responsible of < 10,000 passenger cars registered in all 27 EU countries annually) to petition the European Commission to get a specific target for its fleet, based on its technological and economic potential. Also the so called “niche manufacturers” (responsible
of annual passenger cars registered in all 27 EU countries ≥ 10,000 up to 300,000) can do the same. The evaluation is made on a case-by-case basis, likewise the alternative CAFE standard in U.S.A.

The above mentioned U.S. EPA rule exempts the SVMs (< 5,000 vehicles sold/MY in U.S.A.) until 2016 MY. Furthermore, EPA will define specific less stringent CO₂ standards for this category for the second stage of the National Program (i.e. MYs 2017-25).

These exemptions and special provisions are based on the conclusion taken by relevant authorities that the greenhouse emissions due to the total vehicles sold by these small companies account for a negligible percentage of total GHG emissions inventory both in Europe and in North America. It should be the same, more or less, in Australia.

We noted that, in the Discussion Paper (Figure 5 on page 8), the graph shows that sports cars account for only 2% of new light-duty vehicles in Australia in 2010. And we suppose that such percentage is comprehensive of all manufacturers. Those produced by small-volume manufacturers should be only a portion of that. Taking into account that in the past few years the total number of new vehicles registered in Australia is approximately 1 million/year, the portion for SVMs all together should be around few hundreds.

4. Definition of the category of small-volume manufacturers/importers in Australia

Simple criteria to define the category of small-volume manufacturers/importers should be adopted in Australia to be consistent with the above mentioned EU and U.S.A. rules. For example the average number of vehicles of the same make imported in 3 consecutive years in Australia. The threshold could be less than 1,000/year.

We strongly recommend to consider the single manufacturer, regardless of the corporate relationships or to adopt the same option of the EU regulation that allows a small-volume manufacturer that, although being in a group, can demonstrate to be operationally independent (having its own design centre and production facilities) to petition for a specific CO₂ target. This approach is preferable to request a reduction of CO₂ emissions for each manufacturer, proportionally to its impact and capability.

ANSWERS AND COMMENTS TO SPECIFIC QUESTIONS IN THE DISCUSSION PAPER

We have written in the following our answers and comments to the specific questions listed in the Discussion Paper, following the same order.

3.1.1 Single or Staged Targets?

Q1 Do you support the setting of staged short and medium term targets?

Yes, because we deem that it is better to implement this regulation progressively, in two or more stages. It is necessary to give enough lead time to vehicle manufacturers before a final rule comes into force. This is even a more important requisite for technology-forcing and very stringent regulations like the present one.

Q2 If yes, do you consider 2020 is the logical date for a firm second stage target?
If the first stage is set in 2015, the second stage with more stringent requirements should begin at least a few years later. A 5-year period is reasonable, and it is also the same adopted in the European and U.S.A. CO₂ regulations. It also depends on the relative stringency of the second stage standards.

**Q3 Do you consider it is appropriate to set a target beyond 2020 at this stage?**

We agree that it is important for vehicle manufacturers to have certainty of regulations that means to know the final requirements well in advance of the date of compliance. Nonetheless, it should be difficult to set CO₂ standards too early for the period beyond 2020. It is necessary to monitor compliance with the 2015 target and the trends towards the 2020 target and review progress in mid of the period (e.g. 2016–17) to consider which targets are feasible later.

There are too many uncertainties and factors that can greatly affect the CO₂ emissions of the fleet (examples: adoption of different technologies, customers’ choice, mix of the models, alternative fuels diffusion). We note (and agree) that the suggest approach (two or more phases with intermediate revisions to set suitable targets) is consistent with that adopted by European Union and in U.S.A. by EPA, NHTSA and CARB.

**3.1.2 What is the Appropriate Reference (Base) Year?**

**Q4 Do you consider 2010 is the appropriate base year for determining the targets?**

Yes, because it is necessary to refer to the most recent year for which final data are available, and therefore to take into account the progress already made. This is consistent with both the European and U.S.A. final rules.

**3.1.3 What is a Reasonable Target for Australia?**

**Q5 What rate of CO₂ emissions reduction do you consider is achievable by 2015 and 2020 in Australia?**

In the first stage the annual percentage reduction should be a bit higher than that achieved in the past few years (BAU = 2.1%). Then it could be further increased, because vehicle manufacturers could adopt also for the Australian version the same or similar CO₂ cutting technologies used in Europe and North America where the CO₂ emission reduction programs start in 2012.

**Q6 What do you think is a reasonable CO₂ target for the Australian new light vehicle fleet in 2015 and 2020?**

Something around what proposed in the Scenario 3 or 4 (see Table 4 on page 14).

**Q7 Are there any impediments to Australia achieving the more ambitious rates of reduction embodied in Scenarios 5 and 6 above?**

There are several factors that affect the CO₂ emission of the entire fleet of LDVs in Australia, comprising the customers’ choice. In fact, even if more fuel efficient vehicles will be made available by manufacturers (inclusive of more advanced technologies and alternative propulsion systems like BEVs, HEVs) they cannot force people to buy them. Additional implementing measures could both induce vehicle manufacturers to adopt certain devices, and make more favourable for customers to buy lower CO₂ emitting vehicles.
In U.S.A. the average percentage of reduction per model year in the joint final rule EPA/NHTSA for MYs 2012-16 was set at a medium value among the extreme values proposed. It seems reasonable such approach to be adopted in Australia as well.

3.1.4 What are the Costs and Benefits?

Q8 Do stakeholders have any information on costs and benefits of standards which would assist the Department of Infrastructure and Transport in the preparation of the cost benefit analysis for the implementation RIS?

The costs and benefits analysis in the EPA and European regulations could be taken as a reference, but we want to point out that, generally speaking, the costs to introduce new technologies are certainly higher for small-volume manufacturers due to the limited number of vehicles produced worldwide.

3.1.5 Should the Targets be Split?

Q9 Should Australia set a single set of CO₂ targets for all light vehicles, or is there merit in establishing separate targets for passenger vehicles (cars and SUVs) and for LCVs (utes and vans)?

We think it is better to have separate targets for LDVs and LCVs, as done both in Europe and in U.S.A.

3.1.6 How should the Target be Calculated?

Q10 Do you support the idea of bonus credits for new technology vehicles (such as EVs), flex fuel vehicles and other technologies, or should the CO₂ standard be purely performance based, treating all vehicles on the same basis (using the CO₂ emissions result on the standard ADR test)?

We agree with the universal principle that regulations should be neutral, performance-based, and not forcing or prohibiting certain technologies (i.e. no design restrictive). Nevertheless, we support the idea to give additional credits for vehicle adopting advanced technologies that are beneficial for the environment, as done in the corresponding EU, U.S.A., and CDN regulations.

Such additional credits should be granted at least in the first period of the program to help the diffusion of alternative fuels and cleaner vehicles in the Australian market.

Q11 If you support credits, what vehicle types do you consider qualify for a credit and why?

Ferrari is in favour of all credit options implemented in other final rules in Europe, U.S.A. and Canada (e.g. for advanced and “off cycle” technologies, FFVs, AFVs and enhanced A/C) for the following reasons:

1) It is correct to consider all means useful to reduce GHG gases emitted, directly and indirectly, by motor vehicles.
2) They would provide additional flexibility to comply with the standards, especially in early years of the program.
3) They can promote a greater diffusion of advanced technology, fuel-flexible, and alternative-fuel vehicles.
All vehicle types using alternative propulsion systems and fuels that can really reduce CO\textsubscript{2} emissions, inclusive of those from the air conditioning system. Therefore to the following (but not limited to) vehicle types:

- Hybrid Electric Vehicles (HEV)
- Battery Electric Vehicles (BEV)
- Fuel Cell Vehicles (FCV)
- Alternative-Fuel Vehicles (AFV) using compressed natural gas (CNG), and LPG
- Fuel-Flexible Vehicles (FFV), using ethanol (e.g. E85)

We suggest harmonizing, to the greater extent feasible, with the credit provisions set forth in the above mentioned foreign regulations.

3.2.1 Methodology for Setting Targets – What are the Options?

Q12 Do you support an attribute based standard?

Yes, because we deem correct to set the standard related to one attribute that affect fuel consumption and CO\textsubscript{2} emissions.

Q13 If so, do you have a preference for mass or footprint?

Both attribute are simple, and quite easy to check, but both do not take into account several other vehicle characteristics that really affect FE/CO\textsubscript{2} emissions, like engine displacement and power, transmission type, body shape and aerodynamics... Footprint is the attribute adopted in U.S.A. (both by EPA for the GHG rule and by NHTSA for the CAFE) and in Canada. Moreover it could be the attribute in the future also for the EU regulation that is now based on the curb weight.

Q14 If you do not favour an attribute based standard, what is your preferred approach and why?

We are in favour of attribute-based standards (see our answer to Q13), but, if not adopted, we suggest to define a target for the fleet of light-duty vehicles, with the possibility to get a specific target for small-volume manufacturers, as foreseen in the EU CO\textsubscript{2} regulation and in the NHTSA CAFE rule.

3.2.2 What are the Specific Data Requirements?

Q15 Do you consider there are any other data elements which might also be required for the standards to be effective and enforceable?

The data listed in section 3.2.2 are almost complete. It is appropriate to add the fuel type and information about the air conditioning system.

3.2.3 Is the Current Data Set Adequate and Appropriate?

Q16 Do you agree that the current VFACTS database (supplemented and audited as necessary) is suitable as the primary data source for assessing and reporting compliance with the standards?
It could work, to avoid making a brand new database, provided it is periodically checked by authorities. In Europe and U.S.A. the data are collected by respective authorities. In Europe each member State is responsible to provide all relevant data to the EU Commission.

Q17 Do you also agree that data collected for the purposes of the standard should be made publicly available on an annual basis?

Yes, except for confidential data that could be requested (for example, to complete a petition for derogation for small-volume manufacturers).

3.2.4 What Legislation is Required?

Q18 Do you agree that the Motor Vehicle Standards Act is the most appropriate primary legislation under which to write appropriate CO₂ regulations?

Yes.

Q19 If not, what alternative legal framework would you propose?

See Q18.

3.2.5 Who is Responsible?

Q20 Do manufacturers, particularly importers, have any views regarding the identification of responsible entities under the standards?

Vehicle manufacturers are the main responsible to produce vehicle complying with the mandatory regulations. They should be responsible through their importers. In Europe is directly the manufacturer, whereas in U.S.A. the official subsidiary or importer. Vehicles imported by others (i.e. grey market) should not be attributed to vehicle manufacturers.

Q21 Do you consider there is merit in allowing manufacturers to pool, or is it an approach that manufacturers are unlikely to pursue?

We think so to give an alternative method to comply.

This option is found in the Regulation 443/2009/EC and could be used by all manufacturers. In the U.S. EPA GHG final rule for MYs 2012-16 manufacturers have the option to trade CO₂ credits, and those part of a group shall comply all together. We appreciate any measure useful to enhance the flexibility to respect the requirements.

3.2.6 Is Banking and Trading Appropriate?

Q22 Do you think there is sufficient merit to warrant the inclusion of banking and trading systems as a feature of Australia’s CO₂ standards?

Yes, to give more flexibility to comply. We strongly support such measure as implemented in the U.S. EPA Final Rule for 2012-16 MYs. Credits gained in one model year could be banked and used to offset debits accumulated in previous 3 model years (carry back) or in the next 5 model years (carry forward). Such credits could also be transferred to other manufacturers, and keep their entire value in the said periods. The possibility to accumulate CO₂ credits and, more generally, the averaging,
banking, and trading (ABT) program is certainly a cost-effective method to increase the flexibility, without any negative consequence for the Australian environment. We also deem that it is very important to count credits generated when the fleet average CO₂ emissions of a manufacturer is below the target for the calendar year. It is an incentive for vehicle manufacturers to go beyond the mandatory standards, because they can use the credits earned in the following years and, as suggested, also to offset debits in previous years. Otherwise, there is no advantage to further reduce the fleet average CO₂ emissions.

Ferrari also supports the early credits provisions that means the possibility to earn CO₂ credits in advance of the mandatory date of compliance as allowed in the U.S.A. EPA GHG rule for MYs 2012-16.

Q23 Do you agree such systems are only possible where annual targets are set?

Yes, likewise in the above mentioned US regulation. But it could work with a specific annual target for each manufacturer as well.

3.2.7 What are the Appropriate Sanctions for Non-compliance?

Q24 Do you agree that financial penalties are the most effective way to address non-compliance?

Yes, provided they are reasonable. We suggest adopting less stringent penalties during the first years and for the first g/km exceeding the target, similarly to the EU regulation.

Q25 If not, what alternative would you suggest?

The compliance with fuel economy and CO₂ regulations in different countries (EU, U.S.A., Canada) is for the fleet of each vehicle manufacturer, in a certain (calendar or model) year. In case of non compliance, the only reasonable measure that could be applied is to pay fines, taking into account that vehicles in use cannot be modified to reduce CO₂ emissions. It is completely different from the traditional criteria pollutants (HC, CO, NOx).

We oppose any measure that prohibits the importation of vehicles that cannot meet the corresponding CO₂ standards.

Should you need any information on this subject, please do not hesitate to contact me (phone: +390536949264, fax: +390536949512, email: corrado.cingi@ferrari.com).

Sincerely,

Corrado Cingi
Vehicle Certification Manager
Ferrari S.p.A.

2 November 2011