

CO2 legislation: threat or opportunity for the automotive industry?

A.T. Kearney and Credit Suisse research impact of CO2 legislation for automotive industry

Environmental issues are becoming increasingly important for the European automotive OEMs as the EU is currently enlarging CO2 legislations.

According to a report by A.T. Kearney and Credit Suisse measures associated with reaching 2012 CO2 legislation could require annual investments of up to € 18 Billion for European automotive industry while contrarily benefits for motorists from better fuel efficiency sum up to more than € 65 billion annually. Facing this dynamic framework OEMs have to innovate on how to turn CO2 compliance from a threat to a competitive advantage.

Despite significant CO2 emission reduction over the last 10 years, there is considerable likelihood that the self-commitment of the European Automobile Manufacturers' Association (ACEA), to achieve an average CO2 emission of 140 g/km in 2008 will not be fulfilled. Therefore the EU is currently preparing a CO2 legislation to achieve an average CO2 emission of 120 g/km for new vehicles in 2012. This complements existing emission legislation such as EU 6. Realizing the target, an average CO2 emission reduction rate of 2.9% p.a. has to be achieved over the next 5 years, which is basically nearly double the reduction rate over the last 10 years.

To achieve the 120 g/km limit in 2012, Europe has to avoid a clash between premium and volume OEMs, since they have very different proportions of CO2 emissions. Because of the huge production volumes today, around 70% of the CO2 emissions of

new vehicles can be attributed to volume brands, such as VW, PSA or Fiat. The sheer number of vehicles manufactured means that this segment is responsible for a much larger proportion of total emissions, with the result that reducing CO2 emissions of these vehicles has a much greater impact than in the case of premium makes such as Mercedes, BMW and Audi, which account for the remaining 30 percent of CO2 emissions.

The ultimate impact of the investments of reducing CO2 levels—estimated at between € 11 billion and € 18 billion depending on the final CO2 legislation set by EU—will thus differ substantially for the vehicle manufacturers. Under the currently most likely weight based scenario premium OEMs would need to spend € 4.0 billion and volume OEMs € 7.2 billion on additional product investments to fulfill all emission targets.



For European carmakers, innovative strategies for passing additional costs on to the end consumer are the key to turning CO2 compliance from a threat to a competitive advantage.

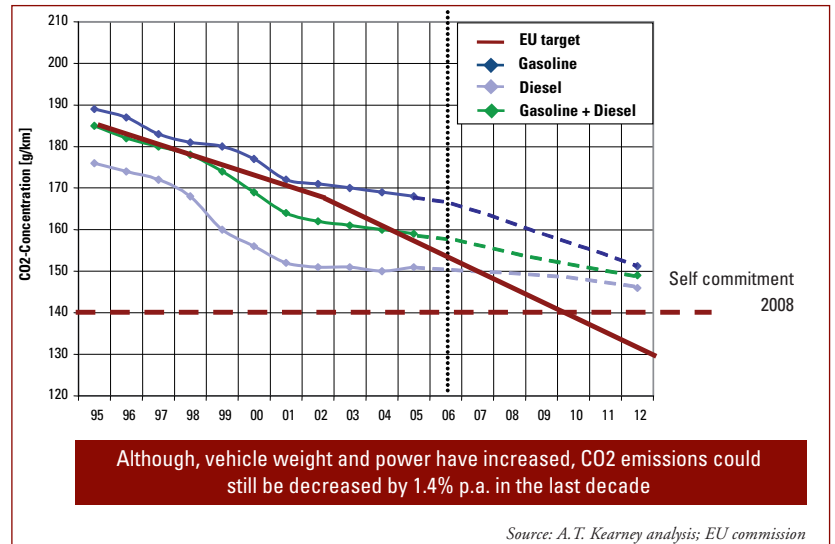
Achieving 120 g/km is only possible by demanding significant additional emission reductions from volume carmakers. Therefore the key questions for the legislator are:

- How can emissions be lowered without adversely affecting individual segments or brands of the automotive industry?
- How will the burden be shared between premium and volume car makers?

For OEMs this results in one single key question: How can the window of opportunity of the forthcoming CO2 legislation be used to create a competitive advantage through new business models and innovative products?

Even if the legislator succeeds in coming up with a well-balanced scenario, the regulation of CO2 emissions will have a direct impact on companies' profits. Assuming that some of the costs can be passed on to the customer,

Figure 1: CO2 emissions development



manufacturers' operating profit can fall by between 2 and 18 percent compared to the current financial market expectations for 2009.

We anticipate that the additional costs arising from CO2 reduction and the resulting negative impact on the

profits of European carmakers will kick in from 2008 onward and subsequently reach their maximum over a five-year period.

Consumer benefit through fuel savings

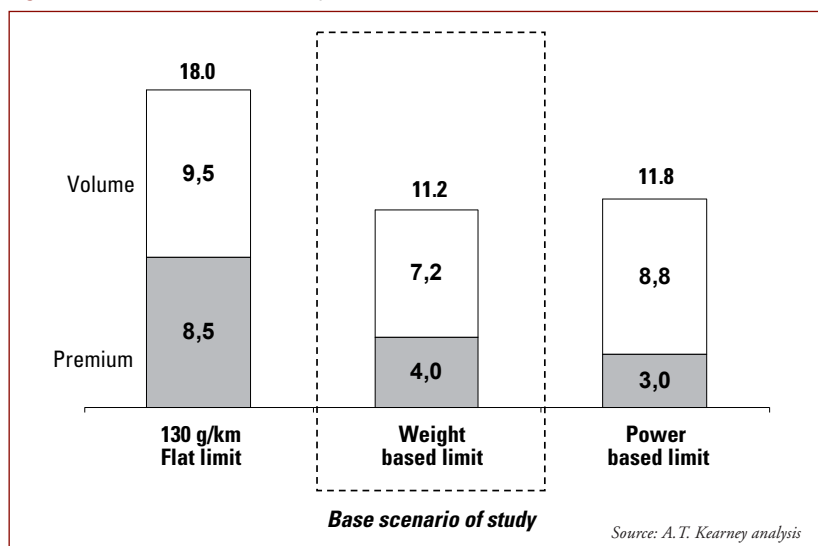
When talking about costs for the auto industry, we should also not forget the consumer benefits on the other side. By reducing average fuel consumption by 25% as planned, consumers will be able to save around € 65 billion per year once the entire vehicle park has been renewed, which will take a period of 8 to 10 years.

This consumer benefit creates a unique opportunity for OEMs to realize price increases for new cars.

This leeway, however, depends highly on

1. The vehicle class (the more km someone drives, the more fuel costs are important)

Figure 2: Costs to achieve CO2 compliance – EUR bn



2. The scope for fuel consumption improvement (the more a carmaker can reduce fuel consumption, the higher the gain for the consumer)
3. Price elasticity

It appears that premium makers are better positioned in all of these categories.

Volume vs. premium OEMs

The currently discussed weight based legislation would severely disadvantage volume over premium OEMs. This is because volume OEMs have to realize “relatively” large CO2 reduction targets for their large volumes of small and medium cars. For some car segments that even means they need to achieve fuel consumption with emissions of 100 g/km or even below.

Especially for the high-volume segments such as the small and compact segment profitability cushions are not sufficient to absorb costs allocated to CO2 and other emission reduction legislations (like EU 6). Given the relatively high price elasticity in this segment automakers will not be able to pass a large portion of the costs to the consumer without risking significant volume loss. This implies that there is a severe risk that the small car segment cannot be served profitably in the future.

Overall, under the weight based scenario premium brands need to reduce their emissions by about 20% whereas volume makers need to reduce their emissions between 14 and 22% over the next 5 years. Among the premium brands BMW

is currently best positioned and requires a reduction of about 18% whereas Mercedes-Benz and Audi require a reduction of about 23%.

Segments and brand position rules

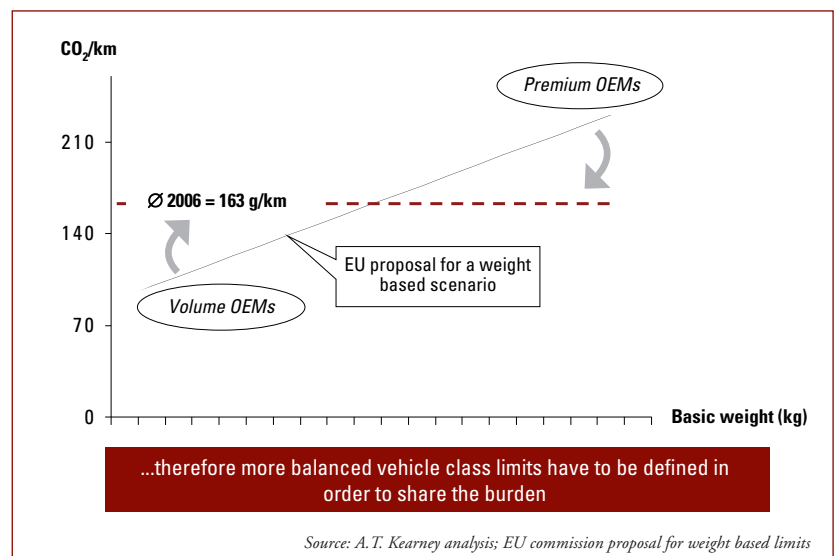
Profitability cushions to absorb CO2 compliance costs depend heavily on segments and brand position. In the small car segment the profitability cushion to absorb additional costs for CO2 compliance ranges from € 150 to € 400 per car. With additional costs between € 200 and € 550, the profitability in this segment cannot be maintained unless a large part of the costs can be passed on to the customers. But especially in the small car segment buyers often focus on initial costs and therefore those segments show a high price elasticity which prohibits to pass on costs to the customers.

For premium brands such as BMW the profitability cushion resulting from strong brand premiums is larger but is still not sufficient to absorb the entire CO2 compliance costs.

Only in the large segment (e.g. 5 series or E class) would the profitability cushion be large enough to absorb the entire CO2 compliance costs. However that means that the main profit source of OEMs would dry up.

So the main challenge for the OEMs is to develop strategies on how to maximize the portion of the costs that can be passed on to the customers. The most promising way to do so would be to argue with total cost of ownership (TCO) advantages for the consumer and advertising new product features such as “environmental friendliness” and “additional fun to drive”—as in the case of hybrid technology.

Figure 3: CO2 scenario impact on volume and premium OEMs

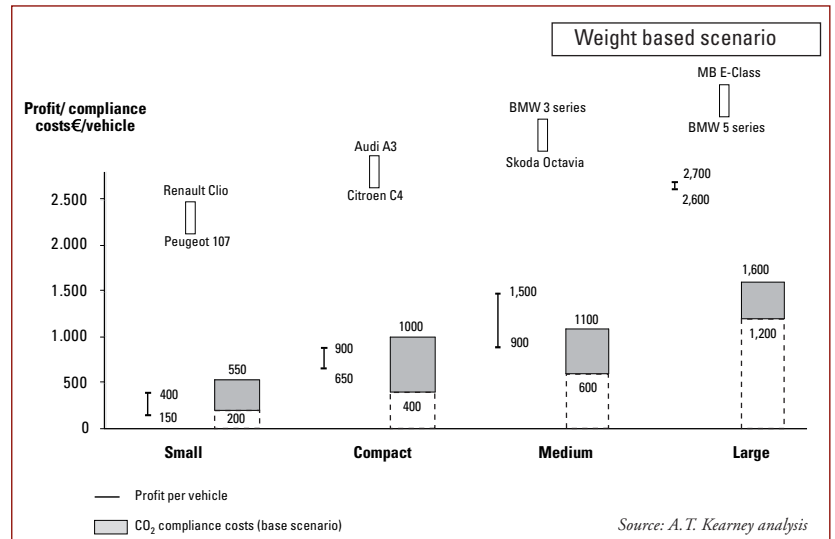


Brand image and pricing power

To pass on CO2 compliance costs to the consumers, brand image and pricing power will become even more important in the future. When OEMs want to increase prices, one way could be to stress the total cost of ownership advantages. However, this will only work for a limited segment of the market.

Only those consumers that drive a lot and can be consolidated as the “TCO buyer” segment would benefit. Usually these consumers would buy cars in the compact to medium segment. Depending on the brand of the car, the price elasticity for these consumers is around 1 for premium brands to 1.5 for volume brands. So especially for volume brands the challenge is to balance the TCO benefit arguments with higher price elasticity. Going further down to consumers who regard the initial price as the key buying criterion, the price elasticity usually increases. This is accompanied with the fact that usually those

Figure 4: Avg. profit per vehicle vs. CO2 compliance costs



consumers would not see a major fuel cost advantage since they usually drive fewer kilometers per year.

The best opportunities lie with the premium brands that target drivers buying cars chiefly for prestige reasons. Those buyers who have relative low price elasticity are expected to see a major fuel cost advantage.

Understanding the customer

Overall, the CO2 emission legislation provides a window of

opportunity for new business models to pass on prices to the customers. Especially those customers who are buying under a “total cost of ownership” rationale have to be addressed by the auto industry because they most likely see the most benefits from fuel efficiency improvements. In our view, there is a great opportunity for carmakers, turning the advantages of lower fuel consumption into a competitive advantage.

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