

Impact of vehicle CO2 standards on national transport emissions

Why ambitious targets are essential to deliver climate goals

September 2018

Summary

Road transport contributes over 35% of the emissions covered within the Climate Action Regulation that sets member state targets for reducing GHG emissions for sectors outside of the Emissions Trading Scheme by 2030. Cutting emissions from new cars, vans and trucks through EU regulation is one of the simplest, and politically most acceptable ways, to reduce surface transport emissions.

Transport & Environment (T&E) has analysed the contribution that vehicle standards can make to lowering surface transport emissions. We modelled three scenarios: what the car industry (ACEA) wants; what the Commission has proposed; and more Ambition (a 45% reductions for cars and vans in line with the position of the Parliament's Environment Committee). Compared to an overall cut of 30% in surface transport emissions the analysis shows that the ACEA option only reduces emissions by 11% of what is needed; the Commission by 29%; and the Ambition scenario by 50%. Even with Ambition, significant other policies are needed to reduce vehicle emissions, like raising fuel duty. But the level of cuts if vehicle standards are not ambitious will probably make it impossible to cut surface transport emissions by 30% by 2030, requiring bigger cuts in agriculture and buildings, buying allowances or paying fines.

Country by country analysis shows typically the ACEA proposal delivers less than 10% towards the required reduction in transport emissions for each country - effectively business as usual. The Commission proposal typically delivers less than 20% of the required emission reductions in transport in less wealthy countries; and between 20 and 40% of the cuts in more wealthy ones. The Ambition scenario typically provides 10 to 30% of the required emissions cuts in transport in less well-off countries; but 40-75% of the cuts in better off member states that have more ambitious climate goals.

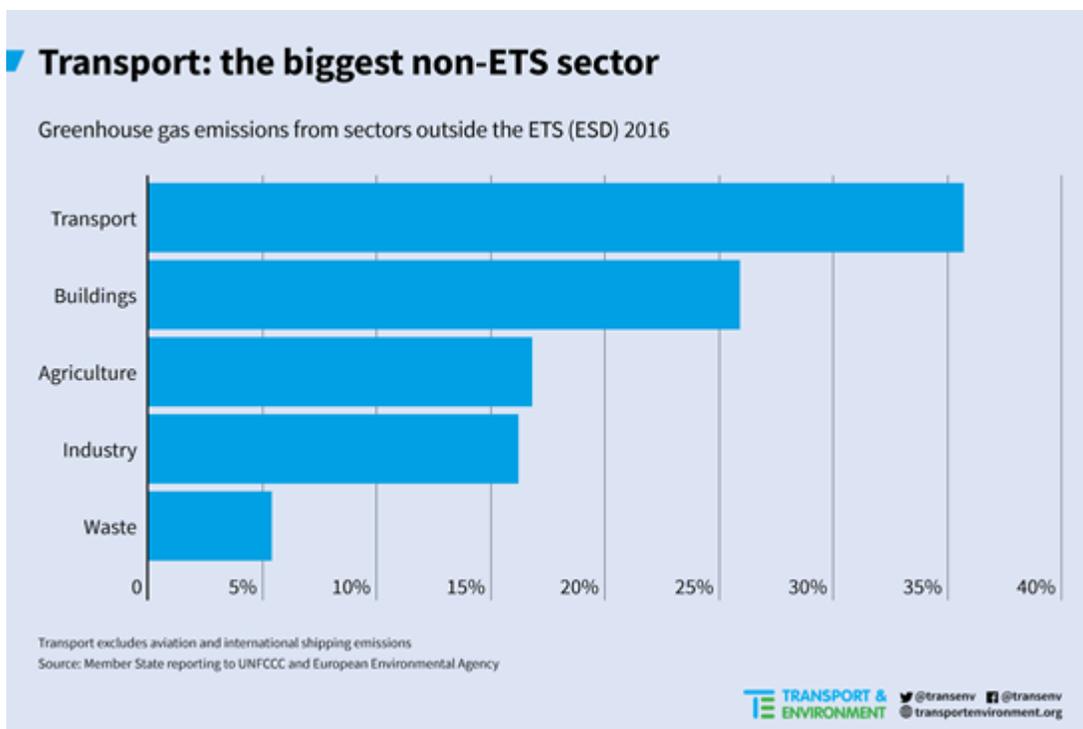
There is a significant majority of countries in favour of a 40% target; but collectively they represent 64% of the population (or 1% below the threshold). However, the support of either Austria or Germany would prevent a blocking minority by securing the 65% share of the vote required. The Environment Council on 9 October is likely to be key in finalising the position.

1. The contribution of vehicle standards to delivering member states CO2 targets

The European Union (EU) [Climate Action Regulation](#) (CAR), covers almost 60% of greenhouse gases and the single most important way of ensuring Europe meets its climate targets. It sets annual carbon budgets between 2021 and 2030 for each EU country, including: surface transport, buildings, agriculture, small industry and waste.

To achieve the overall EU GHG reduction target to reduce emissions 40% (compared to 1990) the CAR is required to reduce emissions by 30% between 2005 and 2030. Each country has an individual target ranging from 0% to 40% with the highest targets for the most developed member states.

The figure illustrates the share of emissions in the CAR from each of the main sectors. Surface transport is the biggest sector contributing over 35% of the emissions. There is no mechanism to guarantee the overall CAR reduction target is achieved. Instead it relies upon policies in each sector to reduce their emissions. For surface transport, the most important policy is EU car, van and truck standards to reduce the CO2 emissions of new vehicles.



The European Commission made its proposal to reduce car and van emissions in November 2017 with a headline reduction of 30% reduction in average new vehicle CO₂ between 2020/1 and 2030. This was followed in May 2018 with a similar proposal to lower truck emissions by 30%. This briefing examines the extent to which the Commission proposals for new car, van and truck targets to 2030 will help meet the CAR goal.

2. Analysis

For the analysis of the contribution of vehicle CO₂ standards to the CAR targets, T&E has used its in-house European Transportation Roadmap Model ([EUTRM](#)) which makes use of the most recently available data as well as detailed member state specific information. The EUTRM is a demand driven model that can compute GHG emissions annually based upon specifically designed policies, calibrated using historical data. For this study we have calculated the impact of three different levels of ambition in new car, van and truck CO₂ regulations and checks to ensure emissions reductions are delivered on the road.

There is no requirement to reduce emissions in each sectors within the CAR proportionally. The European Commission in its car CO₂ regulation assumes surface transport will reduce emissions by much less than 30% (about 19%) and buildings by much more. Given the slow rate of improvement to building efficiency and the difficulty other sectors like agriculture will have in reducing emissions, this is a high risk strategy that could lead to the CAR targets being missed, particularly in those countries with higher CAR targets. The increased offering of zero emissions vehicles coupled with price reductions gives road transport a clear and cost effective CO₂ reduction pathway. For the purpose of this analysis, this paper assumes a 30% reduction of all sectors, in transport so the share of emissions in building, transport and agriculture remain constant as the overall level of emissions are reduced. Other existing policies to reduce transport emissions are also included in the baseline including the 2020/21 CO₂ targets for cars and vans). The main assumptions in each scenario are detailed below:

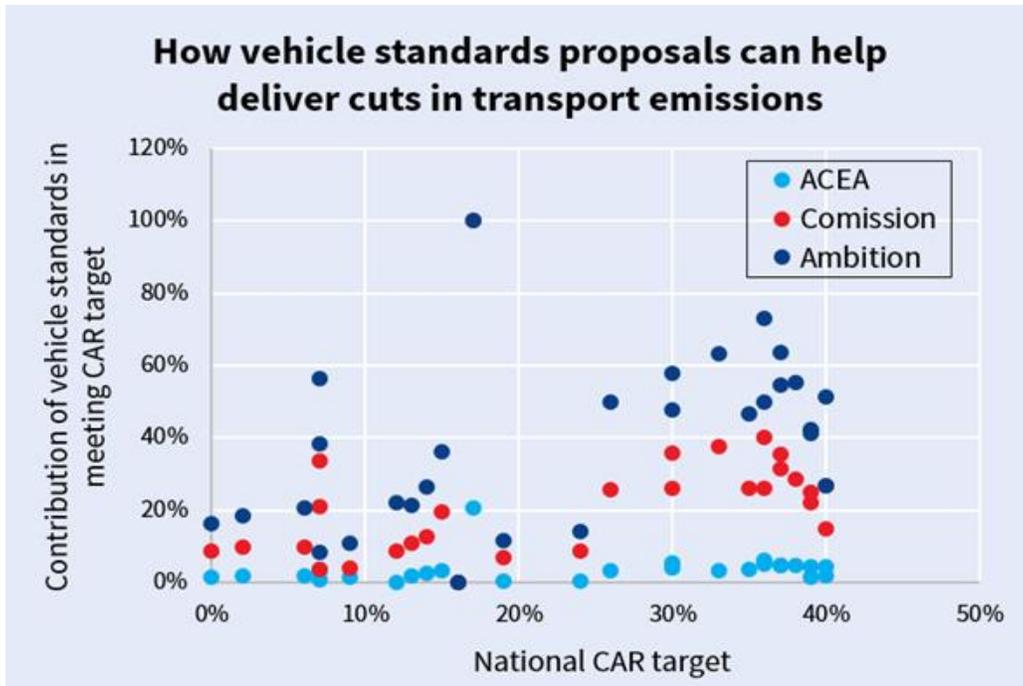
	ACEA	Commission	Ambition
CO2 reduction from cars and vans 2020/1 - 2025	None	-15%	-20%
CO2 reduction from cars and vans 2020/1 - 2030	-20% car, -13% van	-30%	-45%
CO2 reduction from trucks 2020/1 - 2025	-7%	-15%	-20%
CO2 reduction from trucks 2020/1 - 2030	-16%	-30%	-30%
Checks on real world emissions	None	Commission proposal +	Not to exceed limit fixed in 2021

The ACEA scenario is based upon published positions on the [car, van](#) and [truck](#) CO₂ regulations. The Commission scenario its [proposal](#) plus recent [non-paper](#) on manipulation of the WLTP test. The Ambition scenario is a combination of the recent vote in the [Environment Committee](#) and T&E proposals for truck standards. [Evidence](#) has shown that carmakers are [inflating their 2021 baseline](#) as they transition to the WLTP test. In the ACEA scenario, it is assumed that the worst case scenario occurs and that after inflating their WLTP results, emissions reductions are only met on paper, and not in the real world. In the Commission and Ambition scenarios, it is assumed that the appropriate measures are taken and correctly enforced that ensures CO₂ reductions are met on the road. The results are shown below.

	ACEA	Commission	Ambition
% of surface transport reduction delivered by standards	11%	29%	53%
Gap to be closed by other transport measures	223.2 Mt	179.1 Mt	118 Mt

The ACEA proposal is not more than what is anticipated through business as usual and the calculations show that with the ACEA and Commission proposals member states will be left with a huge additional effort to cut transport emissions through new measures in order to meet their CAR targets. Such measures may include: significant increases in fuel taxes; bans on cars entering urban centres to force modal shift; lower speed limits; significant investment in public transport and walking and cycling. Even with the Ambition Scenario, around half of the emissions reductions need to be achieved through measures other than improving the efficiency of new vehicles.

The figure below summarises the contribution that each scenario can make towards individual member states reducing their transport emissions.



The broad conclusions are:

1. The ACEA proposal typically only delivers less than 10% towards the required reduction in transport emissions in each country - effectively business as usual;
2. The Commission proposal typically delivers less than 20% of the required emissions reductions in transport in less developed countries (CAR target <25%); and between 20 and 40% of the cuts in more developed countries (CAR target >25%);
3. The Ambition scenario typically provides 10 to 30% of the required emissions cuts in transport in less developed countries; but 40-75% of the cuts in more developed countries.

The difference between more and less developed countries largely arises from the volume of new cars being sold which are greater in countries with a higher CAR target.

3. Member state views on the car & van CO2 proposal

Member states have been discussing the Commission proposal and are expected to reach an agreement at or immediately following the forthcoming Environment Council debate on the 9th October. The table below summarises the current positions based upon T&E communications with countries on the proposed more ambitious 40% target:

	For	Against	Undecided
2030 target of 40%	BE, CY, DK, EE, ES, IE, EL, FR, HU, IT, LT, LU, MT, NL, PT, SI, FI, SE, UK	BG, CZ, HR, LV, PL, RO, SK,	DE, AT
	<p>19 in favour (minimum 16)</p> <p>64% share of EU population (minimum 65%)</p>		

The required support for a 40% reduction has now almost been met with Spain indicating it will accept up to 40%. Poland previously indicated it will not block 40% but under pressure has shifted its position and indicated it will now support a maximum of 35%. This leaves the progressive group of countries less than 1% short of the required percentage of the population criteria.

Arguments continue to rage in Germany that originally promised to reach a position before the July Environment Council. It is expected to support more ambition but how much more is uncertain. The most recent indications are that 35% is likely to be an upper limit. The Austrian Presidency has so far remained neutral regarding its own position. But with 19 countries in favour, it should now support the 40% and stop the blocking minority from further delaying the decision. Its 1.7% of the EU voting population will secure the 65% majority needed.

The most recent text circulated by the Austrian Presidency proposes a 35% CO₂ target for new cars in 2030. The paper also proposes to significantly increasing the PHEV rewards such that a 50g/km PHEV will count 0.5 not zero as in the Commission proposal. The text will be tabled by the Austrian Presidency at a meeting of COREPER on Wednesday 26th October ahead of the Environment Council on the 9th October.

3. Conclusions

In the absence of ambitious vehicle CO₂ standards for cars, vans and trucks member states will be left with a huge challenge how to meet their CAR targets. For less wealthy countries, the anticipated growth in surface transport emissions poses a significant challenge already whilst for the more wealthy countries, buildings are typically already energy efficient and cutting agricultural emissions is politically challenging. The alternative approaches to cutting emissions in transport are difficult to deliver large reductions.

If vehicles are not made more efficient, emissions cuts will need to be met elsewhere or fines paid. Possible options are:

1. Very aggressive policies to reduce vehicle use include tax hikes on fuel and vehicle access restrictions plus considerable investments in public transport

2. Introducing an aggressive policy of renewal of the housing stock requiring energy efficiency upgrades and a shift to renewable power for heat
3. Introduce very strong policies to reduce agricultural emissions including possibly indoor housing of stock
4. Buy Emissions Trading Scheme allowances.

On car and van CO₂ regulations for 2030 a 40% reduction now has sufficient support if Austria supports the majority irrespective of what Germany wants. However given that Germany has a domestic climate target in transport of 40-42% that can only be met by very aggressive policies on car use and a rapid shift to e-mobility if Germany is serious about meeting its 2030 climate goals it should also support 40%.

If transport emissions are not brought under control, there is a significant risk that the EU will fail to meet its 2030 climate targets overall. These 2030 targets are already being reviewed and will need to be raised as they are insufficient to meet the EU Paris Climate commitments. Transport emissions are presently rising again at about 1% p.a. negating the progress in other sectors. If the EU fails to comply with the Paris Agreement, it will have no credibility calling for further cuts from other countries to meet their goals and this will contribute to a weakening of global climate progress.

Making our cars more fuel efficient and electric is an inevitable consequence of the shift to a low and ultimately zero carbon economy. The evidence shows it will save drivers money; create jobs, improve energy security and help tackle our toxic urban air. It is a win-win solution that should be supported.

Further information

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Annex: Contribution towards member state CAR targets (assuming transport emissions decline in line with the overall CAR target)

	ACEA	EC	T&E
BE	4%	26%	47%
BG	1%	9%	16%
CZ	2%	13%	26%
DK	4%	22%	42%
DE	5%	29%	55%
EE	2%	11%	21%
IE	5%	36%	58%
EI	n/a	n/a	n/a
ES	3%	26%	50%
FR	5%	31%	55%
HR	3%	33%	56%
IT	3%	38%	63%
CY	0%	9%	14%
LV	2%	10%	21%
LT	1%	4%	11%
LU	2%	15%	27%
HU	3%	21%	38%
MT	0%	7%	11%
NL	6%	40%	73%
AT	5%	26%	50%
PL	1%	4%	8%
PT	21%	100%	100%

RO	2%	10%	19%
SI	3%	20%	36%
SK	n/a	8%	22%
FI	1%	25%	41%
SE	4%	27%	51%
UK	5%	35%	64%
EU28	4%	26%	48%