



*Environmental Action Germany (Deutsche Umwelthilfe, DUH) are currently running the EU campaign “Get Real” to demand honest fuel consumption figures of passenger cars.*

*This interview with Peter Mock, Europe Managing Director of the International Council on Clean Transportation (ICCT), is part of the Get Real campaign. We conduct a series of interviews with experts from research and NGOs to gauge the effects of our project. We want to show what role the new EU certification procedure WLTP (Worldwide Harmonized Light-Duty Vehicles Test Procedure) and the Real Driving Emissions (RDE) regulation play in getting honest fuel figures.*

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## Interview

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***DUH: Mr. Mock, the aim of our campaign is to contribute to close the growing gap between real-world and official fuel consumption figures from passenger cars in the EU. What are your policy recommendations to get there?***

**Peter Mock:** There is a number of measures that need to work together to make real progress. First of all, the introduction of the WLTP<sup>1</sup> (Worldwide Harmonized Light-Duty Vehicles Test Procedure) in September will already contribute to close the gap, as it is more realistic than the current NEDC<sup>2</sup> (New European Driving Cycle). But this step alone is not enough. The second element, which I consider crucial, is enforcement. Last year the Commission proposed an overhaul of the type-approval regulation with a focus on market surveillance and better enforcement practices. The proposal is now in the hands of the European Parliament and the Council and it is key that they adopt it soon. Improving the test cycle won’t help if we don’t have better enforcement. It is as if a teacher would change the exam questions but then still leave the room during the exam.

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<sup>1</sup> The WLTP is a new laboratory-based certification procedure for vehicle emissions developed under the auspices of the United Nations. It defines a global standard for certifying the levels of air pollutants and CO<sub>2</sub> emissions, fuel or energy consumption, and electric range from cars and light commercial vehicles.

<sup>2</sup> The NEDC is a driving cycle used for EU type-approval testing of emissions and fuel consumption from passenger cars and light commercial vehicles in a vehicle emissions laboratory. It was last amended in the 1990s and will be replaced by the WLTP from September 2017.

In the mid-term, the next step would be to introduce a testing procedure for real-world CO<sub>2</sub> emissions measurements, similar to the RDE<sup>3</sup> (Real Driving Emissions) regulation for air pollutants. In fact, the Commission should monitor real-world CO<sub>2</sub> emissions already now and stipulate the introduction of a not-to-exceed limit, while they develop an adequate testing procedure. It needs to be clear to manufacturers that there will be a limit value for on-road CO<sub>2</sub> emissions in the near future and that there will be sanctions for noncompliance.

***DUH: As the ICCT has shown, the fuel consumption gap increased from about 9% in 2001 to around 42% in 2015. What is the main cause for the growing discrepancy over the last few years?***

**Mock:** The main cause for the growing gap is that manufacturers have been exploiting the many flexibilities and tolerances (also known as loopholes) of the NEDC, the current certification test procedure. Manufacturers are under pressure to reduce CO<sub>2</sub> emissions to comply with their EU CO<sub>2</sub> targets and, since there is basically no enforcement, exploiting testing loopholes is for them the cheapest way to cut emissions - on paper, not in the real-word. This is not only my opinion but a number of studies have proven it. The introduction of technologies such as start-stop systems, hybrid engines, etc. explains part of the increase but a much smaller part. The same goes for the deployment of fuel-consuming auxiliary vehicle systems such as entertainment devices. Potentially defeat devices for CO<sub>2</sub> emissions could also be behind the gap but there is no evidence yet. Consumers have definitely not contributed to the gap increase. They are not driving differently now to what they used to.

***DUH: You just mentioned that manufacturers exploit testing loopholes to cut CO<sub>2</sub> emissions on paper. Are these practices legal?***

**Mock:** Most of them are legal but some of them are not. For example, it is illegal for a manufacturer to equip a test vehicle with low-rolling resistance tires and then sell the vehicle in the showroom with different tires. However, nobody is enforcing the law, so manufacturers can do it anyway. On the other hand, it is legal to interrupt battery charging to reduce fuel consumption during the test, for example.

***DUH: As you mentioned before, a new, more realistic, certification test procedure, the WLTP, will be implemented in the EU in September. How do you expect the WLTP to affect the CO<sub>2</sub> gap over the next couple of years?***

**Mock:** In our studies, we estimate that the gap will go from about 40% today in the NEDC to about 20% in the WLTP. We expect that the gap is reduced by half at first but that it increases again in the coming years. This is because the WLTP will also have loopholes. It is just unavoidable. The regulation is very complex and I would argue that nobody knows all its details, except perhaps the top experts from the industry. Manufacturers will eventually exploit those loopholes and the gap

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<sup>3</sup> The RDE regulation defines a real-driving emissions test procedure for exhaust pollutant emissions from EU cars and light commercial vehicles. The RDE procedure complements the current laboratory certification of vehicles with on-road testing under more realistic driving conditions.



will increase again, unless we monitor it very closely and set a not-to-exceed limit for CO<sub>2</sub> emissions on-road.

***DUH: Why will we still have a 20% gap?***

**Mock:** Because, even if the WLTP is more realistic and has smaller loopholes than the NEDC, it still includes flexibilities, as I mentioned before. Also, the market shares of hybrid and plug-in hybrid vehicles are increasing and their real-world CO<sub>2</sub> emissions can be significantly higher than those determined during type-approval testing, both in the NEDC and the WLTP. This is because the on-road CO<sub>2</sub> emissions levels of these vehicles depend very much on the actual usage and recharging patterns of the individual drivers. In this respect, the WLTP is not more realistic than the NEDC.

***DUH: It has been said that the debate around the fuel consumption gap should be put on hold until we have first reliable WLTP figures. Would you agree with that?***

**Mock:** No, if you do not monitor real-world fuel consumption from the beginning, by the time you find out that there is again a gap, it is already too late. You have to start early in order to find better solutions for the future. And the Commission already has these solutions. They have the RDE procedure and there is absolutely no reason why they cannot extend it to include CO<sub>2</sub> emissions. In fact, manufacturers are already recording CO<sub>2</sub> emissions during the RDE testing, which means that it is already now possible to monitor them. Introducing a limit based on the RDE data is a bit more complex but it can be done. It is up to the Commission to define it, as they already did for air pollutants emissions. Actually, Germany's Environmental Protection Agency, the UBA (Umweltbundesamt), has already started looking into a monitoring mechanism for real-world CO<sub>2</sub> emissions, as they need a more accurate estimate of the gap for their official CO<sub>2</sub> reporting.

***DUH: Still on the WLTP subject, where do you see its main advantages and challenges?***

**Mock:** The new cycle itself is more realistic than the NEDC but the NEDC is actually not that bad. More importantly, the coast-down procedure and the testing conditions, such as the test temperature, are more in line with real-world driving in the WLTP than in the NEDC. However, the WLTP also has loopholes and, above all, it does not include any improvements in terms of enforcement. At the end, it does not matter how realistic the testing procedure is, if there is no enforcement. More generally, I think that having just one test procedure for all vehicle types and customers is not adequate anymore. In terms of CO<sub>2</sub> emissions, driving a gasoline or a diesel car in the city or on the highway does not make a big difference. If you now take a plug-in hybrid instead, whether you use it in the city or on the highway will have a huge impact on CO<sub>2</sub> emissions. In my opinion, reflecting the different usage patterns of new vehicle types is one of the challenges of the WLTP. I am afraid that it might be outdated very soon otherwise.

***DUH: In your opinion, which amendments should be considered in the WLTP?***

**Mock:** There is hardly any room for amendments in the WLTP itself as its development is an industry-driven process. But, beyond the WLTP itself, consumer information could be improved easily. At the moment we are only providing consumers with type-approval CO<sub>2</sub> and fuel consumption values. Whether they are NEDC or WLTP figures does not make a real difference to



them. We need to provide consumers with more realistic information, that is to say, estimates of fuel consumption and CO<sub>2</sub> emissions under real driving conditions. For example, we could use an adjustment factor to convert official values to real-world values, as they do in the U.S. Also, in future consumers could visit a manufacturer's website, input information about their driving patterns, and get an estimate of their specific real-world fuel consumption for one or more vehicle models. We could also have a more neutral website that would compare different models from different manufacturers and provide recommendations to consumers based on their needs. Actually, the JRC<sup>4</sup> (Joint Research Center) has already developed a tool called "Green Driving Tool"<sup>5</sup> that provides exactly this information but it is not well known yet. In my opinion, it is up to the manufacturers to implement such tools on their websites.

***DUH: What role does the RDE regulation already play (and is expected to play after the fourth package is adopted) in the framework of type-approval and market surveillance for air pollutants?***

**Mock:** RDE is a great step forward. For the first time, we are testing vehicles outside the laboratory. As a result, manufacturers are in fact changing their behavior and worrying about the performance of their vehicles under real driving conditions. However, the whole concept will not work until the fourth package is adopted. This package is all about introducing in-use surveillance tests, strengthening type-approval authorities, and securing that RDE testing can be performed by independent third parties, which is absolutely crucial. So far, manufacturers select the test vehicles and carry out the confirmatory testing themselves, which is useless. Actually, they never find anything suspicious. In principle, after the fourth package is adopted, third parties will have the possibility of carrying out RDE tests of in-use vehicles and, if they find deviations from type-approval measurements, authorities will have to investigate and eventually issue penalties in cases of noncompliance. Of course, type-approval authorities should also carry out in-use conformity testing. However, I have only limited trust in these tests, as authorities are very likely to test within the boundary conditions and not explore the whole range of test conditions – which is necessary to prevent manufacturers from developing new types of defeat devices that are tailored towards the RDE boundary conditions.

***DUH: You have already mentioned a few times that the RDE procedure should be extended to include CO<sub>2</sub>. Is it technically feasible? Otherwise, why has it not happened yet?***

**Mock:** I don't think there are any technical barriers. In my opinion, it is a matter of unlucky political circumstances. There are two different directorates, DG Clima and DG Grow, dealing with emissions regulations in the European Commission. Unfortunately, DG Clima has not been strongly involved in the development of the RDE procedure. This is actually a major problem that goes beyond the RDE regulation: air pollutant emissions and CO<sub>2</sub> emissions have been treated

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<sup>4</sup> The JRC is the research body of the European Commission.

<sup>5</sup> <https://green-driving.jrc.ec.europa.eu/#/>



separately for many years now. That should change because there are lots of trade-offs between them and technical developments that need to happen in parallel to cut both.

**DUH: Is it possible to reduce average CO<sub>2</sub> emissions and NO<sub>x</sub> emissions at the same time or do CO<sub>2</sub> emissions cuts need to be traded off against NO<sub>x</sub> emissions reduction?**

**Mock:** It is possible, even though some industry lobbyists suggest the opposite. They argue that diesel cars, which on average have higher NO<sub>x</sub> emissions than gasoline cars, are necessary to reduce CO<sub>2</sub> emissions but we have found that this is not true. Actually, diesel is a relatively expensive technology. The average cost of a diesel engine is about €1.500 higher than the cost of a gasoline engine. It is more cost-efficient to invest in hybrid technology, in more efficient gasoline vehicles, or in electric vehicles than in diesel. These technologies bring greater CO<sub>2</sub> reductions than diesel for the same amount of money and have lower NO<sub>x</sub> emissions. Diesel had an efficiency advantage in the past but that is not the case anymore. The technology itself still has a lot of potential but it just does not make sense anymore from the cost side.

**GR: A couple of weeks ago, the German Federal Ministry of Transport and digital Infrastructure announced<sup>6</sup> that it had come to an agreement with OEMs on setting up an Emission Testing Institute (Deutsches Institut für Verbrauchs- und Emissionsmessungen - DIVEM), which will be financed by the industry. According to the Ministry, the association will test about 70 vehicles per year, which is by the way significantly lower than what other more neutral organizations are currently testing. The Federal Ministry for the Environment, NGOs, etc. should participate in its Advisory Board. How do you assess this decision?**

**Mock:** I know little about the suggested institute but, in principle, I think that it is an interesting proposal. So far, we don't have any systematic real-world testing of CO<sub>2</sub> emissions and it would be good to finally have a dedicated organization. It is actually a good example of how it is possible to test real-world CO<sub>2</sub> emissions. But, why not an EU agency? Why not an independent institution? It would be better if an independent EU organization, such as the JRC, would conduct the testing. If it's got to be a national agency, which is the second best option, then the UBA would be the most logical and transparent option, as their political mandate does not include protecting the manufacturers. If manufacturers provide most of the funds, I am worried that they will also have the loudest voice. Also, who will define the testing conditions? Because depending on how they are defined, we can either end up having completely useless tests or the opposite.

**GR: It has been said repeatedly that real-world fuel consumption depends to a large extent on driver behavior and that, rather than pointing to car manufacturers, we should encourage consumers to drive economically. How would you reply to these comments?**

**Mock:** From my own personal experience, I can tell that I once did an ADAC Eco-driving test, which was very useful at first, but I quickly fell back into some of my old habits. In my opinion, it is of

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<sup>6</sup> <http://www.zeit.de/mobilitaet/2017-06/alexander-dobrindt-abgas-transparenz-co2-ausstoss-opel-smart>



course important to teach people to drive economically but that is not going to prevent the increase of the gap or reduce it in a significant manner. Blaming consumers is just an excuse.

In any case, I think it is up to manufacturers to provide consumers with tools to drive economically. The gear shift indicator is a good example of such tools. Anyway, I wonder whether we will have to educate consumers at all in a few years, when they drive electric vehicles. They will be themselves interested in extending the range of their vehicles and, for example, will not turn the A/C, unless it is necessary.

**Thank you very much for the interview.**

Berlin, September 06, 2017

The interview was conducted by Eva Lauer and Sonsoles Diaz (DUH).

**About the Get Real campaign:**

The DUH, together with its project partner Transport & Environment (T&E), has launched the campaign “Get Real: Demand fuel figures you can trust”. The campaign is funded by the LIFE Program of the European Commission. Our aim is to improve consumer rights, to advocate against misleading practices in the frame of type approval, and to strengthen market surveillance. Please visit the campaign website to find out more: [www.get-real.org](http://www.get-real.org).

