

Brussels, 8 December 2017

DON'T ONLY ASK WHAT BRUSSELS CAN DO ABOUT POLLUTION, BUT ALSO WHAT YOU CAN DO ABOUT IT



In our previous communication, **TAO-AFI** addressed the issue of Brussels air quality and publicly requested our authorities to take responsibility for their political engagements and to comply with the existing rules. Now we would like to turn to what is fully within our reach, which is: to be informed, and consequently take small actions relevant for all.

What can we do in a practical way to help reduce the problem, and be part of the solution?

- 1) The most obvious is to stop using a polluting car
- 2) What is a polluting car?
- 3) The way you drive
- 4) Is a moped or motorbike a good solution?
- 5) Retrofitting the car
- 6) What to avoid doing

1) The most obvious is to stop using a polluting car.-

If you own one, do not use it unless it is really needed. Public transport (and in particular clean public transport, as Brussels buses are definitely NOT clean) should be a priority, but one needs to be careful not to spend lots of time in metro stations, since there can be huge amounts of particles stirred up from the use of brakes by every passing train. There is little information about this in Brussels, but in Paris, recent Metro station measurements have shown that this can be an issue¹. Soft transport modes, such as walking and cycling, should be preferred when possible, in particular electric bikes, which alleviate the effort in uphill Brussels. In any case it is better to avoid streets with heavy traffic to breathe cleaner air.

2) What is a polluting car?

One can start doing something in the right direction when buying a new car. Let us take into account the option of greener cars available on the market. To do so, first of all, what IS a polluting car?

The worst are certainly old diesels (before Euro 5, except the few Euro 4 which had a particle filter), as they spew out huge quantities of both particles and nitrous oxides (NOx). To give an idea, such cars emit thousands of billions of particles every kilometre, on average (which means it can be worse if driven badly *-please read on to see what it means-*).

Next comes direct injection gasoline engines, a type of engines that is rarely mentioned (no limitation is foreseen for them in Brussels up to 2025 for the moment) which also have no particle filter and emit a bit less particles than an old diesel ("just" hundreds of billions per km), but much finer and carcinogenic (and therefore dangerous, a Swiss expert quantifies

¹ http://www.liberation.fr/france/2017/09/18/particules-fines-l-air-du-metro-parisien-largement-plus-pollue-que-l-air-exterieur_1597163

the additional toxicity, linked to cancer risk, at hundreds of times a diesel particle, due to the quantity and quality of poliaromatics, a powerful class of carcinogens, it can carry²).

Conventional gasoline engines were in general better, but recently some have been measured with a large number of particles as well. Does this mean that Euro 5 and 6 diesels are good? No, but... they have particle filters, so they emit around 100 times less than unfiltered diesels, but releases in most cases 5 to 30 times the legal limit of NOx. This pollutant is estimated to lead to the premature death of around 70. 000 people in Europe every year, while particles (from all sources) kill an estimated 400.000 (possibly even more due to underestimation of cancers apart from lung ones), so it should be clear which is the priority.

A few modern diesels, moreover, are capable of meeting or only slightly exceeding the NOx targets, and they should improve in a couple of years due to the introduction of new test that verify emissions in real driving. To get an idea of which is which, you can see what the emissions of many cars look like on the Equa index web page (NOx, CO2 and CO, for the moment, but they promise particles for the future). Comparing these results with other sources gives the impression that driving during their tests is not very aggressive (in the UK speed limits are quite low, for instance) but the general trend should be at least indicative: if your car has an A or B ranking, for instance, you can be relatively happy and feel not much guilt for driving around (but the indication for gasoline cars is not reliable due to lack of particles indications).

The best of course is to drive without using combustion engines at all, in a full electric or plug-in hybrid, followed by conventional hybrids, which however still use the engine from time to time. Whoever can afford it (and can charge at home or in the office, given the poor coverage of charging infrastructure in Belgium, not to mention the Commission) it would give a great help to the environment by buying these cars.

What if your car has a G or H ranking? If it is recent, changing it would not be that useful, as it will certainly not be scrapped and therefore someone else will keep using it. But you can still do something to limit the damage.

3) The way you drive.-

² http://www.nanoparticles.ch/archive/2017_Munoz_PR.pdf

The way you drive has in fact a very strong impact on emissions, in particular of NOx in diesel and of particles in all engines.

- High speed can lead to huge emissions, as it has been revealed that most cars switch off their pollution controls above 120-140 km/h since tests are not performed above these speeds³. So even in countries that allow higher speeds, stay at 120 and you should be emitting less.
- Around town, accelerate as gently as possible (*think of having an egg between your foot and the accelerator pedal*), and drive keeping an eye to anticipate what happens in the distance, in order not to accelerate and then just be forced to brake at a red light in a few hundred meters (brakes also contribute to particle emissions, by the way, so be gentle also with that pedal if not urgently needed).
- Emissions are particularly high when the engine is just started. In particular, don't do strong accelerations for a few minutes, in particular in winter: catalysts don't work until they reach a certain temperature, so all pollutants will not be treated. Try to drive at a slightly higher engine speed for a few minutes but at constant speed, without strong accelerations, to heat the exhaust system quickly.

4) Is a moped or motorbike a good solution?

It's surely good for CO2 emissions and to reduce traffic, but in most cases not for pollution, particularly if it's an old two strokes engine, but in general two-wheeler emissions are higher than good cars, so be gentle in driving, unless they are electric, of course. In fact electric bikes are a very good compromise; you get some exercise but electricity helps when climbing or riding against wind.

5) Retrofitting the car.-

Another emerging solution is retrofitting the car to make it cleaner, i.e. by applying new technology.

³ BMW is the most recent finding, according to a German NGO, for instance, <http://www.tagesspiegel.de/politik/abgasmanipulation-umwelthilfe-wirft-auch-bmw-trickserei-beim-diesel-vor/20670024.html> but almost all manufacturers have by now been found doing it

The most effective but costly way is to install a complete electric powertrain (it can be done in some specialised shops which are popping up in some countries, thanks also to specific legislation). The performance that can be achieved is not on a par with a new EV, particularly for range, but for a second city car it can be more than sufficient. A retrofitted Fiat Panda or VW Beetle, for instance, costs about 10 000€⁴ (a similar EV costs around 30000€, but with better performance)?

A cheaper option is to apply new catalyts. This is already possible for particle filters and should soon become available for NOx, in order to clean the most recent models (ironically, many are still for sale today and therefore makes it less interesting to swap an old car for a newer one).

6) What to avoid doing.-

Finally, there are things that one should NEVER do with a car if one wants to be a responsible citizen (*and, in some cases, not an outright criminal*).

- First of all, the maintenance record should be squeaky clean. If the car is puffing black smoke due to oil leaks, please don't ignore it, the particles emissions are awful. Have the EGR cleaned periodically and don't block it on purpose, as some workshops suggest. Don't apply software or hardware cheats to improve performance (sometimes called chip tuning, it makes pollution worse). In a way, this is the contrary of what the Volkswagen software "fix" should do, but according to several consumer organisations' tests it does not seem to improve pollution significantly (or worse), and a certain number of customers report issues after the application, to the point that many refuse to have it applied or go to court due to the problems.
- But even more important, DON'T accept the many proposals to tamper with the gasoline catalyts or the particle filter which are available on the internet and in workshops. This means taking it out or drilling holes in it, and brings the emissions of the car back by 20 years. It is definitely not the sensible thing to do, even if it saves some money.

At TAO-AFI we think we owe it to ourselves, and to our children!

⁴ <https://www.lifegate.it/persona/stile-di-vita/quanto-costa-il-retrofit-il-kit-per-trasformare-le-vecchie-auto-elettriche>

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