

Need for lifetime compliance

The text below is taken from the NL position on the approach on future emission standards in which enhanced focus on lifetime compliance is a key element.

Over the years, emission performance has become progressively dependent on the correct functioning of the emission reduction technology and as such modern vehicles have become increasingly vulnerable to aging and tampering. Current emission standards insufficiently secure the emission performance of older vehicles. In addition to extending the test conditions to include all driving conditions, measures should be taken to control lifetime emissions for at least two reasons:

- Aging of after treatment technology is known to cause a significant increase in emissions;
- Intentional misuse (tampering) of after treatment technology by individual owners is increasing. Requirements for lifetime emissions, are required to ensure control on the after treatment, also in the later stages of a vehicles' life.

Both causes can result in extremely high emissions. For instance, removing a diesel particulate filter (DPF), that typically operates at efficiencies of above 99%, will result in a hundred-fold increase of emissions of ultrafine particles. In case of petrol vehicles with defective three-way catalysts, NOx emissions can increase tenfold. This means that although it might occur in only a small number of vehicles, the total impact can still contribute significantly to the total amount of vehicle emissions, posing serious risks to the human health and air quality.

Direction of possible solution to enable lifetime compliance

A direct and continuous monitoring of emissions through OBD and OBM enables the lifetime compliance with emission norms, as it regularly provides feedback regarding the need for maintenance.

Another prerequisite for control of lifetime emission performance is a clear and unambiguous distribution of responsibility. A car manufacturer should never be made responsible for bad maintenance by the vehicle owner. Nevertheless, the manufacturer can be made responsible for detection of overdue maintenance or malfunction of the vehicle emission reduction system. The technology required to detect malfunctioning is already present in modern vehicles. If the responsibility is settled, this instrument can be used when emission performance requirements are extended to the full vehicle lifetime.

Life time compliance can be achieved by lifting the current lifetime and durability restrictions in the emission legislation, particularly if fair aging factors are introduced. If the vehicle indicates the performance of the emission control system, emission standards can be better enforced, especially if such is complemented with in-service conformity (ISC), market surveillance and periodic technical inspections (PTI).