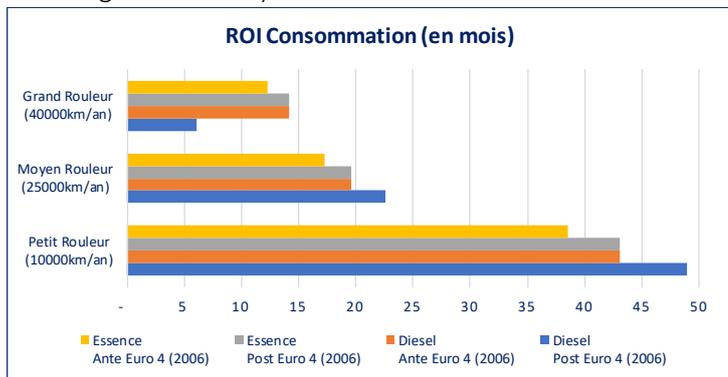


# Return on Investment (ROI)

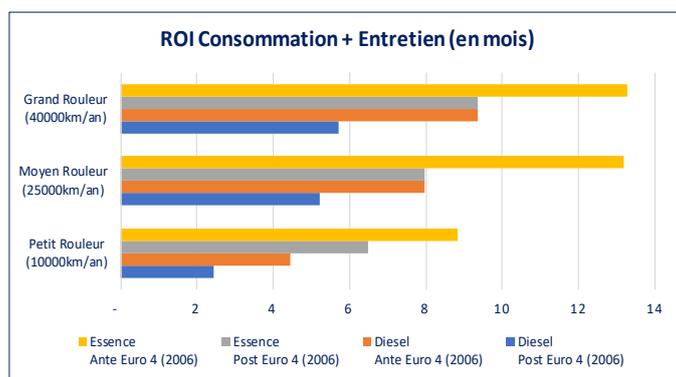
The Logikko system allows the reduction of fuel consumption and pollution on any thermal vehicle. In addition, **engine fouling is reduced, which preserves the performance and life span of the equipment** (intake, cylinders and exhaust) and therefore reduces maintenance, reduces costly breakdowns (EGR, FAP, Turbo fouling) and facilitates resale (especially of diesels). The graphs below (for particular vehicles according to fuel type, engine standard and driving characteristics) calculate the return on investment (ROI) of the Logikko system in the number of months needed to amortize the purchase price of the system.

The first graph only takes into account the drops in consumption. The second includes the reduction in breakdown rates and therefore the savings achieved by not changing certain engine components.

1. Taking into account only the fuel economy, (medium and large rollovers), **the ROI "Consumption" is between 2 and 23 months** (depending on the fuel and engine standard).



2. By combining fuel savings and reduced breakdowns, with the same variables, **the "Consumption + Maintenance" ROI is between 5 and 13 months**.



It is also interesting to note the high impact of the system on improving the maintenance of the vehicles of the "little rouleurs". Indeed, since these vehicles clog up their engines more than other wheelers, the risk of breakdowns is higher without a preventive system like Logikko.

**The ROI that integrates consumption and maintenance shows that Logikko is aimed at the entire used car fleet and not only at the big wheelers.** Big haulers can amortize a Logikko system in 5 to 13 months depending on their type of vehicle mainly because of the fuel economy. The medium sized rollers amortize it at the same time but thanks to the fuel saving but also to the reduction of breakdowns due to fouling. Small vehicles can amortize a Logikko system in 3 to 9 months just because of the fouling which causes many more breakdowns on short trips (urban type) especially if the vehicles are newer because they are equipped with more sensitive anti-pollution systems and therefore more vulnerable. Therefore, a vehicle that drives little (less than 10,000 km per year) will pay for its Logikko system more quickly than a large vehicle because it postpones the need for a large and expensive repair by having a preventive effect on fouling.

**The preventive effect on the occurrence of breakdowns also applies to new vehicles.** If a Logikko system is installed on a new car, e.g. a leased car (usually with maintenance included), the engine will remain as new and will avoid breakdowns (PAF, Turbo, exhaust line, etc.) even if the vehicle is only driven in the city.

The obvious consequence: the dealer who has worked on his maintenance leasing offer including maintenance will be able to reduce the cost allocated to maintenance (saving a few dozen €/month) and will make **his overall vehicle + maintenance offer all the more competitive.**

## Notes on ROI calculations

Our simulations take into account the wear and/or fouling of intake, cylinder and exhaust components (e.g. FAP, EGR Turbo, exhaust line) depending on the technology of the engine and its emission control components. The uncertainty (or error) on the ROI values obtained is of the order of 15 to 20%. ROI calculations are obtained for all engine sizes up to about 3 litres.

The calculations use a failure occurrence index that follows the following empirical laws:

- a diesel pollutes more than a petrol in terms of local pollution, especially on short journeys (the opposite is true for global pollution linked to CO2 as it consumes less) and this is why it has more anti-pollution devices (less and less true with direct injection petrol engines which now have a PAF)
- a diesel on short trips is more expensive than on long trips because it is more vulnerable to breakdowns (on long trips, it can get a bit dirty)