Mobility Blog

Plug-in hybrids: a balanced alternative for your fleet?

10 February 2020 / Theme(s): All articles, Fleet Strategy

The number of plug-in hybrid models is increasing dramatically in 2020. They seem to offer a good balance between TCO, usability and CO2 targets, but there are some important elements that could make the difference between hitting the mark or not at all.

With the 95g/km CO2 target taking full effect in 2020, many carmakers are launching below-50g/km plug-in hybrid models. The technology is really becoming mainstream: you can get it in a B-segment Renault Captur and a C-segment Mercedes A Class, for instance. Most of the premium OEMs now propose a plug-in hybrid alternative to all their ICE models (BMW, Audi, Mercedes, Volvo…).

They offer compelling TCO numbers in countries where plug-in hybrids benefit from tax incentives, making them attractive for their owner or lessee. Also the driver is stimulated to go PHEV in countries like Germany, Belgium, Spain, Ireland and the UK, where the Benefit in Kind is calculated on the CO2 value. In short: they get more car for their tax money.

Moreover, plug-in hybrids are generally less expensive than pure-electric cars while offering the added flexibility of a combustion engine, which extends their operating range considerably. If you don't find a charging station, you won't have to fear getting stranded. As such, plug-in hybrids seem to paint the perfect fleet picture.

Watch the fuel consumption

The official fuel consumption of a plug-in hybrid ranges from 1.2 to 2 l/100km, which promises to make the TCO picture even more convincing. Still, there is an important remark to be made. The average capacity of a PHEV's battery is 13kWh, which allows for some 50km of electric motoring. As soon as the battery is drained, the combustion engine takes over. Because of the extra weight of the battery, a plug-in hybrid will consume more fuel than a regular petrol car, making them highly unsuitable for frequent long-distance motorway driving.

Making plug-in hybrids work for your fleet boils down to selecting the right driver profiles. The ideal PHEV driver is someone who commutes to work over a short distance – a distance that can be covered entirely with the battery. Ideally, the PHEV driver can charge both at home and at the office, so that the combustion engine is hardly ever activated.

Bigger batteries

The good news is that as the offer of plug-in hybrids expands, technology evolves. Batteries are getting cheaper year by year, enabling carmakers to integrate bigger ones, thereby extending the all-electric range. The latest additions to the market are a case in point: the Ford Kuga, the Opel Grandland X, the Citroën C5 Aircross and the Peugeot 3008, for instance, boast a battery capacity of 13kWh. The new Mercedes A 250e and B250e even have 15.6kWh in their underbody, stretching their theoretical e-range to 75km.

At the high end of the PHEV range there is the new BMW X5 sDrive45e, with no less than 24kWh for up to 80km of electric driving. Mercedes-Benz tops it all, though, with the rivalling GLE 350de. It features a huge battery of 31kWh for more than 100km of tailpipe emission-free transportation. Another feature that sets this SUV apart is that its combustion engine runs on diesel rather than petrol – which makes sense in a heavy car like this.

What about "self-charging" and mild hybrids?

Next to plug-in hybrids there are two more types of hybrid. The first one is what its inventor and fond promotor calls the "self-charging" hybrid. Indeed, it is the system we know from the Toyota Prius, Yaris, Corolla and Camry, as well as all Lexus models. The advantage is that you don't need to plug them in – they are charged 'regeneratively' by braking or coasting – but the disadvantage is that the batteries are a lot smaller, meaning you can drive electrically for just a few kilometers. They make sense in an urban environment with a lot of stop-and-go traffic, which maximises regenerative braking and efficiency.

The last category comprises the mild hybrids. They are basically made up of an existing combustion engine which is assisted electrically by a tiny electric motor powered by a shoe-box sized battery – which can never drive the car by itself. All this electric motor does is help the combustion engine, so it needs less fuel to do its job. It's an easy way for car makers to shave off a few grams of a car's CO2 rating, but don't expect to save more than a few deciliters of fuel per 100km.

Self-charging hybrids might still give you access to certain tax incentives so long as they stay below certain CO2 thresholds, but they are generally a lot less generous. Mild hybrids only reduce CO2 emissions by roughly 5%, so they play but a limited role in decreasing your carbon footprint.

For more information, please contact our **Business Intelligence Consultancy Department**:

Benjamin Huvé - consultancy@aldautomotive.com

Tags: New mobility | plug-in hybrid | batteries | hybrid | alternative fleet

More links

- Are we ready for new mobility? The answer is yes, sort of…

Related articles

- Distinct needs, tailored mobility policies
- Which alternative fuels to keep on your radar?
- Making the most of the opportunities MaaS can provide: ALD Move
- Making corporate mobility individual with Employee Car Schemes
- Green bonds to finance green mobility