

E-drive's quiet start will build to a full crescendo

With the launch of an important new mild-hybrid Mercedes in the Australian market, AutoMate's Harrison Boudakin looks at how the E-drive ramp-up will play out in the Land Down Under.

Settling into the leather driver's seat of the 2019 Mercedes C200, it's quite easy to miss the fact that you're barely four feet away from one of the most important combustion engines built in the last few years. In fact, almost nothing about the C-Class seems massively different from last year's model – but that's the point.

Because while the appearance, and the driving experience, may have stayed the same, the C200 is in fact a harbinger of a mighty change sweeping across the car industry; a change which will increasingly see mass production cars repointed towards several new, and remarkable, propulsion models.

For at least five years now, the buzz around electro-mobility has simmered furiously beneath the surface of the automotive mass-market. Yet by and large, the revolution has yet to hit full boil – thanks to battery technology that is not yet mature, not yet at price parity with combustion drivetrains, and not yet supported by the appropriate infrastructure across the globe. Put simply, while the idea of the fully-electric car has become increasingly-attractive, broad-based adoption across the market remains elusive.

Of course, thought-leading, high-end electric flagships like Tesla's Model S, Jaguar's I-Pace and Mercedes' EQC 400 have worked wonders with the image of EVs, convincing many that the electric revolution need not preclude high performance, luxury amenities or that most important element in all car purchases: style.

And while it's easy to write these expensive machines off as Cloud 9 irrelevances for the automotive elite, they are in fact important proofs of concept for how well electric vehicles will be accepted into the market. In good time, and with more investment, the technology will trickle down into more affordable cars.

But for the moment, that doesn't mean the rest of us won't feel the tinge of electrification in the vehicles we might be buying over the next few years. Far from it – in fact, electric powertrain technology, albeit in smaller doses, is already flowing quickly through the automotive food chain.

Enter, again, the Mercedes C200 – and back to the question of why this otherwise-normal car is harbouring some very significant technology. No longer is the C200 a conventionally-powered four-cylinder petrol model; now it's a



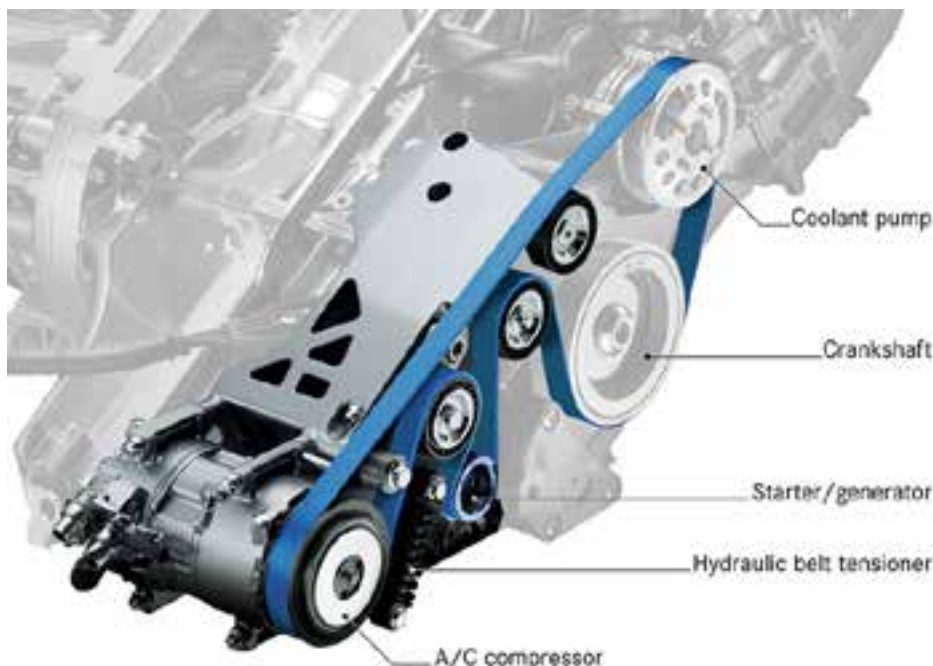
revolutionary 48V mild-hybrid, using electric sub-systems to subtly unlock new levels of efficiency and performance, all while introducing possibly-unknowing owners to the wonders of electrically-assisted driving.

At the heart of the C200's quiet revolution is the EQ Boost system, which is powered by a 48 volt electrical sub-architecture. Now, we've seen 48 volt systems before: VW-Audi debuted theirs a few years ago in the SQ7, which used the increased voltage to power an e-turbo and the car's energy-sapping anti-roll technology. Here though, on what is regularly Australia's best-selling mid-size sedan apart from the Toyota Camry, it arguably represents a more symbolic and significant step.

Suddenly, buyers not seeking anything radical will be exposed to a system that guarantees seamless engine start-stop in traffic, ICE-off "high-speed sailing" in the cruise, and effective energy re-gen under braking – all thanks to a lithium-ion battery, a belt-driven Starter/Generator and a small-electric motor that "fills in" the gaps in the 1.5L turbo's power delivery. Having landed in the C200, we can expect to see very similar "mild-hybrid" systems filter right through even more affordable cars, like for example, Volkswagen's Golf.

Why? Well, it's arithmetic essentially. With emissions standards tightening, particularly in Europe, and with China about to impose stronger quotas on vehicle electrification, manufacturers see mild-hybrids as an excellent "half-step" towards a more fully-electrified future that technology, and many markets, aren't yet 100% ready for.

Beyond the relatively basic 48V system





offered in the C200, we can also expect to see manufacturers roll-out more complex versions, featuring electric water pumps, e-turbos and electric AC compressors – meaning we’ll soon see an increasing number of vehicles with entirely beltless engines. The variety of full-hybrid models will also experience a substantial uptick – those being vehicles which can run on electric power alone for short periods of time without physically needing to be recharged, like the evergreen Toyota Camry Hybrid.

Simultaneously, plug-in hybrids will see a significant boost in popularity, as manufacturers look to build cars that

can run on EV power for more extended periods of time, while also maintaining the range of combustion-powered models.

Porsche, for instance, has recently retired all diesel versions of its Cayenne, Macan and Panamera models, replacing them with high-performance plug-in petrols. Expect to see that trend continue across the SUV and large sedan segments, as diesel increasingly fades as an eco-star in the face of tightening Euro emissions laws, and a dwindling public perception of their long-term reliability and complexity.

What’s fascinating about this massive shift is that Australia is well-placed to adopt a

balanced approach to the up-take of more electrified vehicles. With such a diverse market as ours, we can expect to receive many of these semi-electrified models coming out of Europe and Asia, while preparing ourselves for full-electrification over the next decade by building the necessary infrastructure and policy framework for 2025 and beyond.

A coherent understanding of what constitutes an electrified vehicle, in both the market and by our policy-makers, is vital to ensure that consumers are not sold wrong messages about electrified vehicles – particularly around the idea of hybrids and the pace of their spread across the marketplace, as a precursor to buyers’ acceptance of full EVs with better range, at a lower price point.

The key point is this – the electrification of the car in Australia will not happen overnight, in a linear fashion, or even in the same way across different sectors of the marketplace. With EVs in Australia, we should not expect a silver bullet, nor adopt any punitive approaches.

Instead, we can participate in what is becoming a truly global march towards full electrification, via a path that will see us increasingly behind the wheel of cars featuring different levels of electric propulsion. The key to our success will be understanding how to best navigate that path today and tomorrow, and how best to prepare ourselves in the meantime for the electric future that lies at its end.

Article written and researched by Harrison Boudakin.

