

STORY BARRY GREEN
PHOTOS AUTONEWS



hybrid vs pure petrol power

TESTERS: BARRY GREEN, JOHN EWING
STARTERS: MITSUBISHI OUTLANDER PHEV,
NISSAN X-TRAIL TI 4WD

PHEV STATS

MLP: \$47,490

WARRANTY: 5-year/100,000km (includes battery).

CAPPED PRICE SERVICING: \$360 first service and \$470 second, third and fourth services (every 15,000km or 12 months). Average \$442.50 per service.

SAFETY: DFSCA, KA, ABS, EBD, TC, ESC.

MAIN FEATURES: Cruise control, HSA, NAV, bluetooth, voice control, tilt and telescopic steering adjustment, 7" colour touch screen, AM/FM radio/CD/MP3 player with six speakers (including two tweeters), auto rain-sensing wipers, dual-zone climate-control, RC, PS (rear), dusk-sensing HID headlamps with auto levelling, alarm.

ENGINE: Hybrid 2.0-litre DOHC, petrol 4-cyl, twin 60kW electric motors.

MAX. POWER: 87kW @ 4500rpm (+ 60kW for each of the front and rear electric motors).

MAX. TORQUE: 186Nm @ 4500rpm (+ 137Nm for front and 195Nm for rear electric motors).

FUEL: 1.9 litres/100km.

ANCAP CRASH RATING: ★★★★★

GVG EMISSIONS RATING: ★★★★★

FOR: Innovation without real-world compromise.

AGAINST: No spare wheel.

X-TRAIL STATS

MLP: \$44,680

WARRANTY: 3-year/100,000km.

CAPPED PRICE SERVICING: First 12 x 6-month or 10,000km scheduled services for up to six years or 120,000km (whichever occurs first). Average \$310.35 per service.

SAFETY: DFSCA, ABS, EBD, BA, TC, ESC.

MAIN FEATURES: 4x4-AWD system with electronic selection, AW18, 7" colour touch screen, NAV, CD player with MP3 capability, digital radio, AUX, USB/iPod+ connectivity, bluetooth, dual-zone climate-control, cruise control, tilt/telescopic steering adjustment, 8-way power-adjustable, heated driver's seat including lumbar support, 4-way power-adjustable, heated passenger seat, leather accentuated trim, RC, HSA, Lane Departure Warning, Blind Spot Warning, hill descent, heated outside mirrors, front fog lights.

ENGINE: 2.5-litre, petrol 4-cyl.

MAX. POWER: 126kW @ 6000rpm.

MAX. TORQUE: 226Nm @ 4400rpm.

FUEL: 8.3 litres/100km.

ANCAP CRASH RATING: N/A

GVG EMISSIONS RATING: ★★★★★

FOR: Practical and conventional.

AGAINST: Foot-operated park brake.

THE MITSUBISHI OUTLANDER PHEV is the world's first plug-in hybrid 4WD and SUV.

Unlike other hybrids we've seen, it can be fully charged from a 15amp household power point in about five hours, rather than relying on the petrol engine to provide the charge while driving. Depending on the electricity tariff, a full charge is claimed to cost around \$3.50.

The 300volt, 12kWh lithium-ion battery is housed under the floor and provides about 50km range, though obviously this is dependent on driving conditions and the amount of power other devices, such as airconditioning and heater, use. Two electric motors – one driving the front wheels, the other the rear – are provided. Both axles have their own single-speed transmissions.

The PHEV has three separate operating modes – EV and two hybrid. EV mode drives the vehicle on electric power alone and is the most efficient for low-speed driving.

When operating conditions dictate a need for more power, the petrol engine automatically starts and, through the generator, supplies power to the electric motors.

And when battery power is low, or high speed operation is required, the petrol engine provides electric power to the motors but is also mechanically coupled to the front wheels to increase efficiency. In effect, this second mode allows both electric motors and the petrol engine to drive



the vehicle while the battery is being charged.

The PHEV also features regenerative braking, which those familiar with Mitsubishi's i-MiEV will no doubt recognise as a much advanced version of that used in Australia's first production electric vehicle.

The 2.0-litre petrol engine is from Mitsubishi's MIVEC stable, putting out power and torque of 87kW @ 4500rpm and 186Nm @ 4500rpm.

By comparison, Nissan's new X-Trail Ti 4WD is absolutely conventional. Under the bonnet is just one powerplant – a 2.5-litre, 16v DOHC four-cylinder petrol unit, good for power and torque of 126kW @ 6000rpm and 226Nm @ 4400rpm, driving through one of the better CVTs on the market.

Built on a completely new platform, this third-generation offering is a step up from its predecessors, being more refined, more comfortable and improved dynamically. Interior space has been opened up by making the wheelbase 75mm longer and rear passengers will appreciate the improved vision that the theatre-style rear seating provides.

The standard equipment inventory, particularly on the range-topping Ti (as tested), is comprehensive and impressive and, at \$44,680, the Nissan is nearly \$3000 less than the base-model PHEV.

ON THE ROAD

The PHEV is much like a conventional Outlander to drive, except that for most normal city use, the petrol engine doesn't start, so it's exceptionally quiet. Floor the accelerator, as we did as part of our normal performance testing, and the petrol engine starts, sounds and behaves much the same as a conventional SUV fitted with a CVT.

The response is good. It outgunned the X-Trail by 0.3 seconds from 0-60 and 0-80km/h, but the Nissan was a 10th quicker from 0-100km/h and over the standing 400m. Important roll-on acceleration, from 50-80 and 60-100, favoured the Mitsubishi by some margin and it also pulled up shorter in our emergency braking from 80km/h.

Perhaps of more real-world relevance is that, unlike many of its hybrid predecessors, the PHEV proved no one-trick pony. It does everything a conventional Outlander will do

“Both vehicles would carry a family of five comfortably”

and even has the same 1500kg towing capacity.

On electric power, the Mitsubishi obviously is the smoother and quieter, but under conventional power the X-Trail feels more refined with better NVH suppression. Ride quality favours the Nissan slightly, with better compliance over rougher roads, though there's little between the two dynamically. Body roll is present in both during higher speed cornering, but the X-Trail's steering offers more feel and consistency in weighting.

Both vehicles would carry a family of five comfortably, though the X-Trail Ti goes the extra yard in providing its front occupants with powered seat adjustment.

Being 4WDs, we put our duo to the test with a run along the Mt Mee State Forest gravel trails, a challenge both were handling with ease until the PHEV suffered a front right tyre puncture. Unfortunately, a rock had split the sidewall and, with no spare tyre offered as standard (presumably due to space constraints caused by the electric powertrain), we set about the laborious task of using the supplied compressor to maintain some pressure while we limped towards Dayboro.

Eventually, we had to abandon the test and have the PHEV towed to its dealership. This prevented any chance of further testing where we might have validated, or otherwise, Mitsubishi's claimed ADR combined average fuel consumption figure of a remarkable 1.9 litres/100km. For the record, our testing (to that stage, in environments not conducive to optimising hybrid energy efficiency) produced an average of 9.4 litres/100km, 2.2 lower than that of the X-Trail.

But our test and a drive at the vehicle's launch did show that the PHEV is a practical and workable fusion of electric and conventional engine technologies, while overcoming the dreaded electric vehicle range anxiety.

The X-Trail? Though no class leader, it is at the pointy end of the popular medium SUV market segment and also deserves a showroom visit and test drive.