



JECO

The Jewish Ecological Coalition

One of JECO's aims is "to educate and encourage individuals to 'tread softly on the face of the earth'; i.e. to minimise their environmental footprint." To this end we bring you the first of a series of articles, by our 'JECO Transport Correspondent', Jonathan Keren-Black, who writes from his extensive personal experience with emerging more sustainable technologies for cars.

If you would like to contribute an article of your own, please email me flitman@optusnet.com.au

Evelyn Flitman

JECO President

Hybrids, electric cars and hybrid hybrids

The hybrid has been a great success, particularly for Toyota, who commercialised the idea of having a petrol engine and an electric motor working together to increase efficiency. There is no doubt that they do so. In real driving you probably save a third of petrol consumption, and therefore a third of emissions. I have been driving hybrids ever since I came to Australia 13 years ago - 3rd and 4th generation Prius (is the plural Priii?), a (made in Australia) Camry hybrid, and the baby of them, the delightful, most affordable and most efficient Prius C. One user I was reading says:

My weekend challenge is to beat fuel consumption shown on the label of 3.7L for city driving. I get down to 3.3L/100km on many trips (no aircon or heating).

(Source: [Product Review – Toyota Prius C](#))

That may be beyond the call of duty but you get the point! But let's clear up some confusion (before causing some more!). You don't plug these hybrids in. You only fill them with petrol - but less frequently. The charging system is completely automatic and self-contained. The motor helps the engine to get the car moving - this is where it saves most petrol. And when it is driving along, and especially when it is slowing down, it uses 'spare energy' to recharge the battery, ready for the next start.

But these hybrids still need petrol - and cause emissions. What about electric cars? An electric car (if charged on renewably generated electricity) uses no petrol and causes no emissions. Of course there are production and recycling questions, but not dissimilar to any ordinary vehicle. Do we worry enough about what happens to our nasty lead-acid car batteries when we replace them every 4-5 years? Battery technology is changing and developing - including some exciting ideas from Israel - and batteries are certainly recyclable, if the price is right. But first, hybrid and electric vehicle batteries have a second use as static energy storage when they are no longer quite efficient enough to be used in cars. And the bottom line is that, for every km driven on renewably charged batteries, all the potential petrol emissions are avoided! But solely electric vehicles are still few and far between - the only reasonably affordable and practical one, the Nissan Leaf, was well over \$30k for an early, four-year old model (range 120 km) And though Tesla is promising its lower priced new car

next year (model 3, 300+ km, at least \$50k), the current model S is \$135,000 upwards (range of 350+ km), most of us are not in the market for them, though they do prove a petrol-equivalent range is achievable.

But there is one type of alternative which is available - we might describe it a 'hybrid-hybrid', though more usefully, it is known as a 'plug-in hybrid' or 'plug-in hybrid electric vehicle (PHEV)'. The feature of these vehicles is that they have a larger battery pack and motor, so they can run exactly like electric cars, up to full motorway speeds purely on the battery. But the battery's range is limited - perhaps 10-70 km depending on model. In other parts of the world, the Prius is available with the Plug-in option - but Toyota decided not to bring it to these shores! Chevrolet make the Volt - and a few hundred were brought here in 2012 as the Holden Volt - but still very expensive at over \$30k for a 4 year old car. So I come to the conclusion - and the one exception in that it is a similar price to a more conventional vehicle - and this is the Mitsubishi Outlander PHEV. Those of you who know your cars (or have checked the picture) will immediately spot that this is an SUV - and therefore would immediately seem contrary to the logic of environmentally friendly transportation. I would agree, and it made me very hesitant about exploring it further. But when I parked my Camry alongside it, it was the same length. And when I checked the weight, it was more or less the same as the electric Nissan Leaf (some leaf!). And then I found that it drove just like 'a real car', only silently (actually it can be set to beep at low speeds to warn pedestrians), right up to motorway speeds, and for up to 45km. Which meant I could drive to work and back (with a big smile on my face) and some side trips as well, plug in overnight, and be full and ready again in the morning. For the first seven weeks of my long-term test, I didn't even fill up. Then I had a couple of longer trips, Castlemaine and Geelong, and set off without a worry - not trips you could do in a Leaf without finding a fast-charge somewhere (en-route each way in the case of Castlemaine, which is 135km each direction)! Overall I put in 35 litres of fuel for 1881km - an average fuel consumption of 0.54 litres/100km. Which makes the 3.3 that the guy in the Prius occasionally manages to achieve (with his cooling and heating off) look very thirsty! And the Mitsubishi Outlander PHEV is available 2 years old across the country for less than the 4 year old Leaf or Volt.

Effectively safe and comfortable electric driving without range anxiety is available here and now. Who knew? Not surprising that in the UK (where people are more aware and there is more choice of alternatives) it has sold more than all other plug-in hybrids combined!

Jonathan Keren-Black





Holden Volt charging



Nissan Leaf charging



Tesla 3 charging

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JECO works to deepen the Jewish community's commitment to caring for the earth. We believe there is a religious as well as a moral obligation to protect the environment. To this end we work with Jewish, secular and multi-faith groups in supporting activities that promote sustainability.