

Here is something for you Morrie owners who have asked for my professional advice on electric cars. One of you, I know, is electrifying your Morrie, I want to know how that goes!

Most car manufacturers are producing electric cars; here is one progressive design from Mercedes Benz, the Mercedes AA Class luxury sedan. You all know how serious I can be...

<https://www.youtube.com/watch?v=0k1tbf8muMc>

Would I like an electric car? Oh yes please! I've driven a Tesla, a magnificent car with brilliant performance! Pity it took so long to charge, though, and twice in one day. And it costs \$70k. Maybe not, then.

Current technology enables charges in "as little as 30 minutes", according to experts. That best-case-scenario fast charging cannot be done on home power. Charging at home on alternative current can take a few hours, or overnight, to fill the battery, and add a bit to the home power bill. That home power, like most electricity in the Australia, comes from generators using coal power during the night.

The problem with electric cars in Australia (and this is going to sound a bit dumb so bear with me) is electricity. Or, how we produce our electricity.

In 2020, 76% of all Australia's electricity came from coal, oil and natural gas. And most of that comes from coal. That just leaves 24% from solar, wind and hydro. For solar and wind... if the sun doesn't shine and the wind doesn't blow, then coal takes over. Affordable batteries to store lots of electricity are some years off.

Hydro (or, in the words of politicians, 'pumped' hydro) is great - it provides almost instant energy/electricity by turning a valve and letting water plummet downhill, spinning turbines and generating electricity.

Hydro is fantastic for those morning and afternoon peak times, when breakfasts

## EXPECTATION



## REALITY

across the nation are being cooked and jugs boiling; likewise for the evening meals, when lots of extra electricity is needed.

But... Australia is the second driest continent on the planet after Antarctica, don't we need all that water? Yes we do! So in the wee early hours of every morning, all that water is pumped back uphill ('pumped' hydro) ready to be used again, wonderful.

But... water being pumped uphill, against gravity, uses more energy/electricity than it produces running downhill, right? Yes it does! So, in the middle of the night, when the sun isn't shining, where does the electricity for pumped hydro come from?

Ka-ching! The penny drops! From burning coal of course. Hydro power in Australia burns more coal than it produces in electricity, simple. That's because we need coal for our 'base' load, the minimum



level of power generation, to generate electricity when everything else isn't.

So to electric cars: In Australia, where does most of the energy come from to charge them? From coal; trust me, I'm an electrical supply consultant to the federal government. That means, if you're following me, that electric cars produce carbon emissions at similar rates as petrol-powered cars - unless you have an expensive solar-battery-storage-and-unique-charging-system at your house; probably not.

Get it? Electric cars are great, but only if the charging infrastructure is in place AND the electricity produced is carbon free.

And let's not mention battery life, battery replacement, trade-in valuations, etc, all of which add to a car's running costs.

What can we use to produce base load electricity instead of coal? Nuclear is about the only option, unless you live in Tasmania or New Zealand where it rains a lot and hydro goes straight out to the sea.

Oh, nuclear is 'good', especially the efficient fast breeder types - but google 'plutonium' and find out just how 'good' it is. That stuff is nasty, real nasty, and is nasty for millennia. Its half life is 24400 years; in 100000 years it will still kill people. Oh!

Toyota, the world's biggest car maker, understands both the car market and the infrastructure that supports it perhaps better than any other manufacturer on the planet. When Toyota offers an opinion on the car market, it's probably worth listening to.

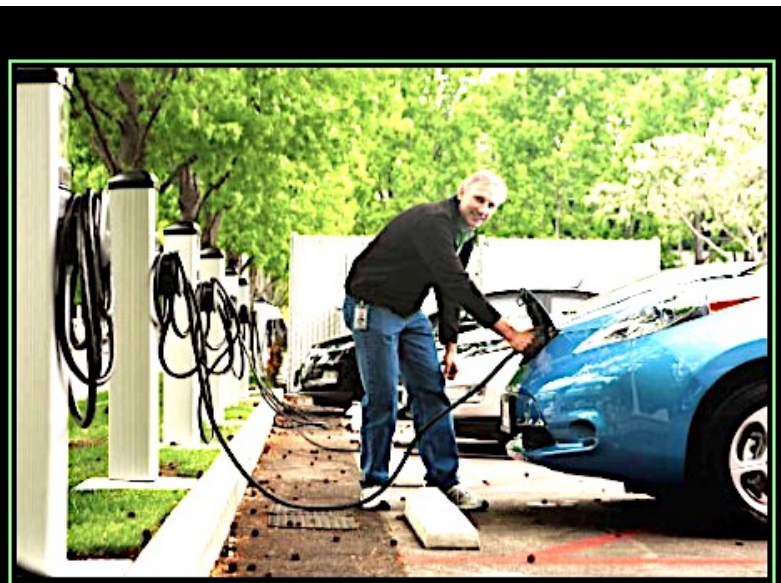
The other week, Toyota repeated an opinion it has offered before. That opinion is straightforward: The world is not yet ready to support a fully electric auto fleet. "If we are to make dramatic progress in electrification, it will require overcoming tremendous challenges, including refuelling infrastructure, battery availability, consumer acceptance, and affordability."

Hmmm, and affordability, eh? Exactly the same problems Australia has, and with electricity production/carbon emissions as well. Maybe Morris Minors are OK then...

Don't get me wrong - the sooner the human race stops spewing all the filth into the air (and into the sea for that matter) the better for all of us, and our life-support system called 'Earth'. We have to do start stopping putting so much crap into our air and water and land. Or do we leave it for our children? Or grandchildren? Because it's in the political 'too hard' basket???

Fully electric cars do have a place, and will be commonplace eventually, just don't hold your breath.

Cheers,  
Sir Rom



## Coal fired electric cars

Helping the politically-influenced think they are making a difference.