Robotaxis to the rescue

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Australia enjoys some of the least reliable and most costly electric power in the developed world. There’s some argument about the exact figures, but rest assured, Australia certainly isn’t falling behind on either metric. It is, however, falling way behind on a closely related metric: Australia lags most other developed countries in the consumer take-up of electric cars.

It may be naive to connect expensive, unreliable electricity with the unpopularity of plug-in battery electric vehicles (BEVs). Surely the country’s political class knows better. Bill Shorten thinks the problem is a lack of government subsidies. Scott Morrison thinks it’s because too many Australians own boats and trailers.

Either way, if 5 million Australians (25 per cent of Australia’s car owners) come home on a hot summer day in January, 2030, turn on the air-conditioning, and plug in their BEVs, they’ll crash the electricity grid. If 10 million Australians try to plug in at the same time, they might blow it up. And staggered charging won’t help. There’s not enough generating power on the continent to charge 10 million electric cars.

Bribing people to buy electric cars is one way to ‘catch up’ with other countries on individual BEV ownership. Letting BEV owners use the roads for free (by not paying fuel taxes) is another. People respond to price signals, and if Australia’s political class wants to sink billions of dollars into promoting an outmoded technology that will be obsolete by the time it comes online, foreign automakers will be only too happy to offload their excess electric cars on Australia.

For while Australia is talking about BEVs, the world’s innovation leaders — the US and China — are rapidly moving toward autonomous vehicles (AVs). Australian state transportation departments hope to have regulations ready for AV road tests by 2020. The US and China already have AVs on the road.

Of course, most AVs are also BEVs, so Australia could have its electric cupcake and eat it too. But there’s a reason why automakers are going all-in on AVs, which happen to be electric, rather than pushing conventional BEVs, which have been around for more than a century. It’s because AV-BEV together is a much smarter value proposition than either AV or BEV alone.

Apple, Google, Amazon, and dozens of other technology companies are investing in AVs, too. The reason is simple: BEVs only make economic sense when they can intelligently manage their batteries for themselves. An AV-BEV can take a signal from the grid to go charge when the charging is cheap. It can also top up while you’re working or shopping. It can even sell power back to the grid when electricity prices spike and there’s money to be made from powering your neighbor’s dishwasher.
Or when the wind doesn’t blow, or the sun doesn’t shine. Remember Elon Musk’s giant battery in South Australia? Most of the time it just sits there, doing nothing at all. Well, it always sits there. And it does something — feed power back to the grid — five or ten days a year. The same battery power could be distributed among 20,000 BEVs doing stuff every day, but only if they were smart enough (and autonomous enough) to plug themselves in when needed.

The only problem with this model comes when you want to run to the store, but your AV-BEV thought it was a good idea to sell power back to the grid all day. And that’s where the final element of the future of personal transportation comes into play: ride-hailing.

Ride-hailing has taken Australia by storm, though it’s been a pretty low-tech storm so far.

That’s about to change. The worst thing about ride-hailing, from just about everyone’s perspective except the driver’s, is the driver. That’s why ride-hailing companies like Uber, Lyft, and China’s DiDi are among the most aggressive investors in AV-BEV technology. Ride-hailing companies are dreaming of the day when they can take the driver out of the loop — and keep the entire fare for themselves.

Put ride-hailing (RH), BEV, and AV together and you get the RH-BEV-AV technosystem. This emerging technological ecosystem will allow fleets of BEVs to ferry us around on demand, all the while responding to price signals from the electricity grid. When you order a ride, you’ll be competing with your neighbors and their dishwashers for the available battery power. You won’t be booking a car that has a battery — you’ll be booking a battery that has a car.

The world’s political elites have bet the farm on renewable energy, but they don’t seem to understand that renewable energy only makes sense in the context of an RH-AV-BEV technosystem. Without smart, shared, electric cars, renewable energy requires enormous redundancies: huge battery banks sitting ready to discharge immediate standby power, backed up by gas turbines that stand idle most of the time. That’s a lot of infrastructure (and staffing) to keep around ‘just in case’ the grid runs short.

As things stand, renewable energy requires massive subsidies, and BEVs require massive subsidies. Invest in them now, and all you do is subsidise the past. Work toward the RH-AV-BEV future, and the robotaxis will ride to the rescue.

The only reason to own your own electric car is to show it off in the parking lot. Or if you plump for a Tesla Model S, to drag race it.

When it comes to BEVs, the economics of individual ownership just don’t add up, and without subsidies, they never will. But for an RH-AV-BEV fleet running on demand 24 hours a day, the economics shift substantially.

You may never own an electric car, but chances are you’ll be riding in one soon.