First of all, thank you for changing things for the better and not only allowing Australia to contribute to positive action against climate change, but to keep up with the rest of the world and come out of the dark ages. Australia never used to be a country that (so to speak) promoted use of “the horse and cart” when the rest of the world was moving to automobiles.

I am a New Product Development Engineer that has been quite successful (mostly overseas) at implementing very new products and concepts “ahead of the curve”. I have learnt ways to do this that does not scare the general population or make them resistant to new things or technologies and thus to improve the chances of acceptance and uptake of new concepts. Given this and the model I am currently using, I think I have some vital points here.

I think we have to be careful about promoting hybrid vehicles (LEV’s) as an acceptable solution. Although hybrid vehicles reduce carbon emissions and burning of fossil fuels, they still contribute to the problem. Therefore, I think you need to be careful with use of the term LZEV (low or zero emission vehicles). In fact, I think the government should not use that term, because in a way you are “behind the curve” again. What I am saying is the general population is already looking toward ZEV’s and you are still partly promoting LEV’s.

I think a FAR better solution is to encourage the majority of people to have a different hybrid solution. Not all, but particularly families, couples or 2 vehicle households. That hybrid solution is to own one full EV and one normal petrol or fossil fuel vehicle. This is of course, only until it is feasible for the majority of people to only own EV’s. Only a full electric vehicle or ZEV does not burn fossil fuel and will not contribute to CO2 emissions (if fully charged with solar). Even if the electric vehicle is only partially charged with solar, it is still a benefit. This provides a model which will allow people to better transition to full ZEV’s faster. To do this, if the states give registration incentives to keep the 2nd petrol/diesel vehicle under an ever-reducing travelled distance every year, it will encourage people to use the ZEV where possible. I know this distance travelled is not easy to police or control, but it would be the ultimate way.

In this way, those families or multi-vehicle owners will drive the EV as much as possible and ever reduce their dependence on a fossil powered vehicles, for example only for longer trips, holidays etc. Or maybe to find other solutions like car sharing or car hire where their own EV is not useable. Perhaps there could be incentives on car sharing or renting a car if an EV is owned. Perhaps there could also be more incentives on full ZEV’s and also on the 2nd petrol car if kept under, say, 5000km per year.

This is the model that I have adopted. I only have an older 2016 Nissan Leaf with a range of 160km plus a small petrol car. I have now owned the Leaf for 9 months and already the other car almost never gets used to the point of degradation. I am already thinking of selling the petrol car and using car sharing on the odd occasion the EV does not suffice. My parents live 160km away so it is difficult for me with this solution, but I make it work. That vehicle cost only A$20,000, as a 2nd hand import from Japan, which is something most people could work with. The cost of a longer range EV’s is

presently very prohibitive, and I think you are not going to reach a level of support where the average family could afford a new electric vehicle with a 500km range – especially given rising costs of living at the moment. I know that my solution will work for many people if given a chance and promoted or incentivised in some way. Even for those people who cannot and may never be able to afford a new vehicle over A$50,000. If those people are then given incentives for solar on the rooftop, also where they live in a strata apartment or unit setup, this would also help. Note, an expensive home charging system is not really necessary, I use only the portable 10amp charge which came with the vehicle. That plugs into any common household power outlet. Then, if the sun is shining and I am at home, I charge. If not, I generally don't. If I really need to charge and it is not sunny (like overnight), I sometimes charge anyway. If I want to use the vehicle and it has a useable range, I do. If not, I use the petrol vehicle. Also given the level of solar that most people will be able to invest in, "slow" charging at 10A or 15A is probably also most suitable.

OK, if workplaces were encouraged to have 10amp outlets (or maybe 15A) for electric vehicle users, that would also help. Charging 8 hours with a 10amp charger realises approx. 80km, enough for most people to travel home from work. Charging at 15amps gives (fairly obviously) a 50% improvement on these results and it may be wise to encourage installation of 15A outlets at home or in workplaces, which is not a prohibitive cost, and encourage uptake of portable 15 amp chargers that are not much more expensive than 10A chargers. Fast charging is great for a high-priced vehicle, but for something most will able to afford, slow charging preserves the battery longer and will suffice for most people.

I hope these comments have helped in some way. If you would like further input, I have many other innovative solutions to not only improve Australia's contribution to reducing climate change, but to make us more productive the dawning of this new commercial era. I have been promoting it and waiting for it since I was at university back in the 1990's.