



LEGISLATIVE ASSEMBLY
FOR THE AUSTRALIAN CAPITAL TERRITORY

STANDING COMMITTEE ON PLANNING, TRANSPORT, AND CITY SERVICES
Ms Jo Clay MLA (Chair), Ms Suzanne Orr MLA (Deputy Chair),
Mr Mark Parton MLA

Submission Cover Sheet

Inquiry into electric vehicle (EV) Adoption in the ACT

Submission Number: 6.1

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Absentee Submission to Public Hearing on EV Adoption

Alex Satrapa

I present this document in place of (or in support of) attendance at the public hearing of the committee investigating EV adoption in Canberra. As I am not aware of the specific audience I have targeted a generic audience with slightly less domain knowledge than myself.

In my original submission by email my main claim was that in my opinion the government would be better off spending its attention and money assisting the installation of “slow” chargers at places that cars will be parked for long periods such as apartments, office carparks, shopping malls and restaurants.

In support of this opinion I’ve provided three attachments:

1. A map from “TeslaFi” showing the places I’ve driven and the odometer reading of my car (a miscalculated field has been redacted). Basically providing bonafides that I have an EV and I’ve used it a lot so (to borrow a phrase from an ancient jeans ad) I know boats
2. A summary of charging from “TeslaFi” showing that indeed the majority (about three quarters) of the energy that has gone into my EV over its 34,000km to date has come from one 10A socket in my garage
3. A list of YouTube videos describing two successful owner-organised charger installations in strata title properties, some products that are relevant (to illustrate the type of products on the market for this purpose) and a video from Technology Connections explaining the innards of a EV charger or “wall box”

FYI in the third video “Tesla Electric Vehicle Apartment Charging by EVSE Australia” the product described is the EO Genius, which is available with tethered or untethered wall boxes. A tethered wall box will have a cable with a Type 2 plug (useless for legacy vehicles such as Nissan Leaf) while the untethered wall box will have a Type 2 socket which means the EV owner will bring their own cable, so a Tesla or Polestar driver would provide a “Type 2 to Type 2 cable” which plugs in to both the wall box and the car, while a Leaf driver would provide a Type 2 to J1772 cable. You can see an example of this product at the Majura Park IKEA, and whatever time you visit you are likely to find an EV charging though whether the owners are interested in talking to curious visitors is up to the individuals concerned.

While most people considering an EV are aware of DC fast chargers such as the Tesla supercharger network, far too many people are of the belief that they need DC fast charging or an expensive three phase 22kW wall box for daily use. For most people 2–7kW (10A to 32A single phase) is more than sufficient for a family car that will be parked for five to ten hours a day. At 2kW most EVs on the market will recover about 100km range overnight.

(continues)

There are larger EVs coming, notably utes/"pickup trucks" like the F-150 Lightning (no Australian release date yet), which will require more energy per day for the same amount of travel. Work trucks in particular will require more energy simply because the expectation is that the tradie will be using the power from the truck to run tools on a work site. For a F-150 Lightning with a 100kWh battery, a 7kW charger would take about 14 hours to replenish from empty to full. Thus ensuring capacity for most parking bays to have a 7kW charger (rather than 22kW) will still provide most people with the charging they require (even a tradie with a few busy days a week), and provide opportunity for a small number of bays to be 22kW three-phase or 50kW HVDC while remaining within a building's electrical demand limits.

Scaled up to a strata title's (for sake of illustration) 100 parking spaces the difference in infrastructure required is significant, eg 700kW instead of 2.2MW as a simplistic estimate of peak demand. This difference can be especially significant when retrofitting charging infrastructure since a building might already have a 2MW substation with a couple of hundred kW spare capacity which is useful, but having to upgrade to a 4MW substation is a major undertaking. As cars and charging systems get smarter, it might be possible to reduce that 2.2MW peak demand to 1MW peak demand by simply orchestrating the fleet to charge when there's spare capacity. But that's a discussion best informed by others more familiar with the technology than I am.

Expectation management is going to help save a lot of money when it comes to retrofitting existing apartment buildings, and help rein in costs on new developments. Part of what the ACT Government can do to improve EV adoption is to perform this expectation management, for example through individual MLAs reaching out to their respective communities about their EV experience (and perhaps supplying a small EV fleet so the MLAs can experience them personally for a few months at a time), regulatory agencies working with commercial suppliers and architects to produce case studies showing how to budget demand for expected number of EVs in 5, 10, 20 years, and introducing requirements for at least having the space reserved in a building for EV charging needs (chargers, cabling, distribution board, room for metering/billing equipment, internet connection, substation if required, etc).

As far as future residential or commercial developments go, I'd much prefer to see local building codes updated to **require** actual infrastructure installation (even if it's only 5% or 1 bay, whichever is greater) with documented plans for expanding to 100%, and giving tenants the right to request installation of that equipment.

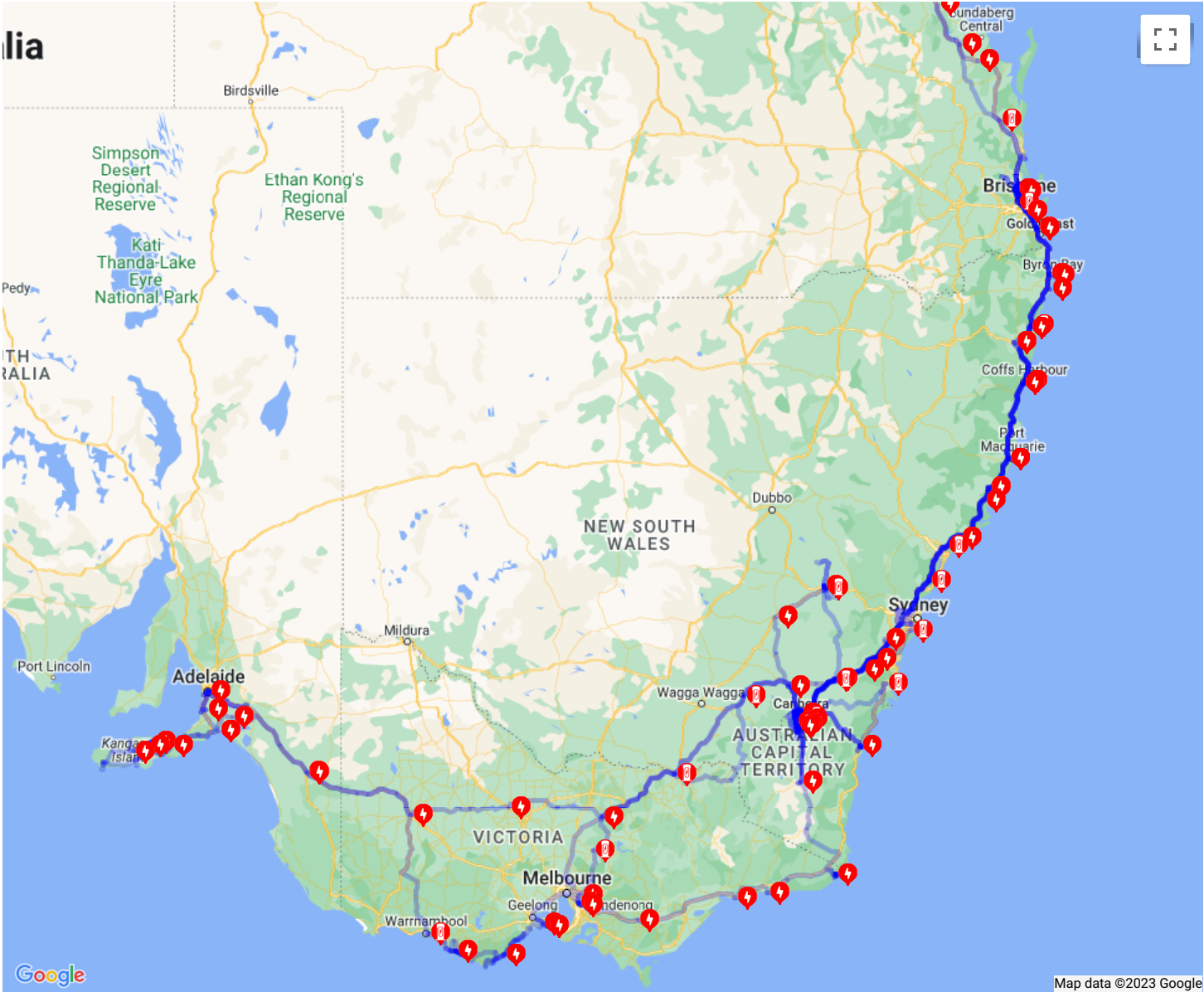
To recap, my opinion is that a great invisible hurdle to EV adoption (after supply constraints) is the lack of charging infrastructure that would make it easy to own one: namely the ability to plug in and charge overnight at home, or during the day at work. To aid EV adoption the simplest actions the ACT Government can take is to manage expectations, followed by assisting developers and owners to provide facilities. Subsidising vehicle ownership is a far distant last place: the people who can afford a \$80k vehicle don't need a \$2k discount, and we only have \$80k vehicles because manufacturers aren't producing cheaper vehicles yet as they get supply chains up to speed. I appreciate the free money the government has given me, but it wasn't needed.

Alex.

TeslaFi Lifetime Map



Drives	Kilometers Driven	Rated Kilometers Used	Wh/km	Efficiency	kWh Used	Avg Speed	Avg Temp	Total Cost	Time Spent Driving
2,048	34,421	42,063	151 Wh/km	81.83 %	5,186 kWh	62.3 km/h	18.19 C	<div></div>	23 Days 0 Hours 38 Minutes



All TeslaFi logged drives.

[Rebuild Drive Records](#)



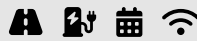
Wanda Is Sleeping 7 Minutes

Charger Disconnected 95 / 100 %

Rated Range 385.68 Kilometers

3.00 3.05 27.5°

36,088 Kilometers 2023.2.10



Estimated Range 385.81 Kilometers (100%)



3.00 2.98

Settings ▾ Drives ▾ Charges ▾ Calendar ▾ Controls ▾ Fleet ▾ Help ▾

Logout

Starting Date: Ending Date: Search

AC Charging Totals

Show 10 entries

Search:

# Of Charges ▾	Address ▾	kWh Added ▾	kWh Used ▾	Avg Efficiency ▾	Time ▾	Avg. Time ▾	Savings ▾	Cost ▾
342	Home	2,512.92 kWh	2,845.92 kWh	88.3 %	58 Days 12 Hours 59 Minutes	4 Hours 6 Minutes		\$ 623.59
50		456.72 kWh	492.80 kWh	92.68 %	10 Days 14 Hours 31 Minutes	5 Hours 5 Minutes	\$ 63.14	
15	Port Campbell Victoria 3269, Australia	69.31 kWh	78.16 kWh	88.68 %	1 Day 8 Hours 36 Minutes	2 Hours 10 Minutes	\$ 9.77	
13	Apartments	84.33 kWh	92.78 kWh	90.9 %	8 Hours 28 Minutes	39 Minutes	\$ 11.65	
10	Kingscote South Australia 5223, Australia	69.68 kWh	79.97 kWh	87.14 %	1 Day 9 Hours 45 Minutes	3 Hours 22 Minutes	\$ 10.00	
9		17.12 kWh	31.25 kWh	54.79 %	3 Hours 42 Minutes	24 Minutes	\$ 3.91	
8	Taree, New South Wales 2430, Australia	78.12 kWh	85.27 kWh	91.61 %	8 Hours 2 Minutes	1 Hour 0 Minutes	\$ 10.66	
8	Kennett River Victoria 3234, Australia	43.68 kWh	47.10 kWh	92.74 %	20 Hours 10 Minutes	2 Hours 31 Minutes	\$ 5.89	
6		18.07 kWh	20.56 kWh	87.87 %	9 Hours 21 Minutes	1 Hour 33 Minutes	\$ 2.57	
6	Keith, South Australia 5267, Australia	41.83 kWh	45.56 kWh	91.81 %	4 Hours 14 Minutes	42 Minutes	\$ 5.69	
537 Charges At 51 Locations		4,003.94 kWh	4,493.95 kWh		79 Days 4 Hours 1 Minutes	3 Hours 32 Minutes	\$ 207.59	\$ 623.59

Previous 1 2 3 4 5 6 Next

Supercharging Totals

Show 10 entries

Search:

# Of Supercharges ▾	Supercharger ▾	kWh Added ▾	Time ▾	Average Time ▾	Savings ▾	Cost ▾
5	Goulburn New South Wales 2580, Australia	93.67 kWh	1 Hour 7 Minutes	13 Minutes		\$ 51.53
4	Central Coast Supercharger	122.03 kWh	1 Hour 52 Minutes	28 Minutes		\$ 67.12
3	Wodonga Supercharger	83.42 kWh	1 Hour 10 Minutes	23 Minutes		\$ 43.46
3	Harwood New South Wales 2465, Australia	99.92 kWh	1 Hour 29 Minutes	29 Minutes		\$ 54.96

Videos about Charging EVs in Apartments

EV CHARGER INSTALLATION IN APARTMENT CARPARK: One Owner's Experience (Ludicrous Feed)

<https://youtu.be/epf6aubGUQg> (22 minutes)

SUCCESSFUL APARTMENT EV CHARGING INSTALLATION AUSTRALIA 2022 Q&A Live (Ludicrous Feed)

<https://www.youtube.com/live/JRbF2HvH9h8> (64 minutes)

Tesla Electric Vehicle Apartment Charging by EVSE Australia | Ludicrous Feed (Ludicrous Feed)

<https://youtu.be/WuzAIKIK0HI> (4 minutes, product marketing by EVSE Australia selling the EO Genius system)

EV CHARGING TESLA MODEL 3 AND APARTMENT LIVING Tesla Tom Live E 2021.9 (Ludicrous Feed)

<https://www.youtube.com/live/zJojgHrAKvg> (78 minutes)

A Better Option for Apartment EV Charging: Orange Charger (Josh Charles)

https://youtu.be/_GxyK6UWVmg (10 minutes, US-specific)

Electric car chargers aren't chargers at all – EVSE Explained (Technology Connections)

<https://youtu.be/RMxB7zA-e4Y> (27 minutes)