Australian Electric Vehicle Association Inc.
www.aeva.asn.au

ELECTRIC VEHICLE NEWS

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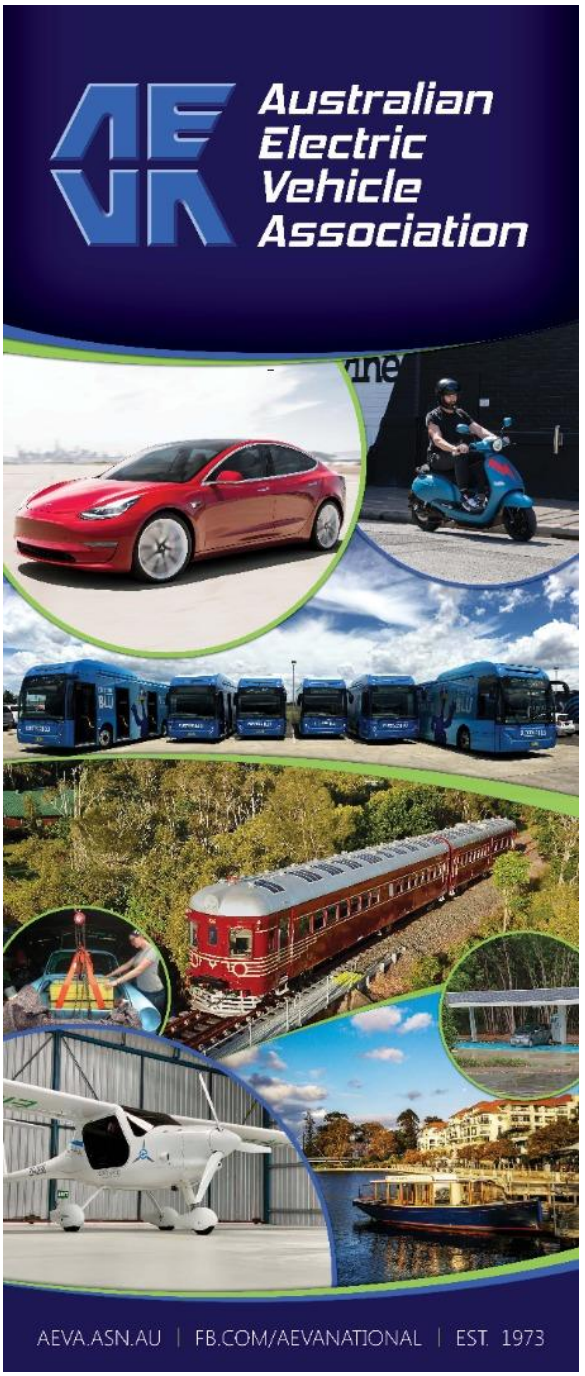
2020 EV Vision e-Conference edition

The future is clear –

EVs are here!



Inside:

Specials:

Regulars:

Corporate members pages

*Please note: this is an **OPT-IN** free listing offer to all current corporate members.*
To be listed – email the details of your business (as listed below) to: EVNews@bigpond.com
Details needed: business name, state, logo if desired, brief business description – 10 words/2 lines maximum, contact details. See listings for examples:

Hobart BMW (Tas)
Sales & Service of BMW PHEV & Electric vehicles
Contact (03) 6236 9099; sales@hobartbmw.com.au
Web: www.hobartbmw.com.au

University of Tasmania
Higher education provider and sustainability leader
Contact: sustainability.utas@utas.edu.au
Web: www.utas.edu.au/sustainability

Tesla Owners Club of Australia (nationwide)
Officially recognised club for Tesla owners and enthusiasts.
Email: contact@teslaowners.org.au
Web: www.teslaowners.org.au

SA Power Networks (South Australia)
SA's electricity distribution network operator
Phone: (General enquiries) 13 12 61
Web: www.sapowernetworks.com.au

Evse.com.au (Sydney, nationwide)
Supply & Installation of EV Chargers, Adapters, Cables & accessories.
Phone: 1300 40 62 10
Email: sales@evse.com.au
Web: www.evse.com.au

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Supply of EV components and batteries, EV repairs and conversions.
Phone: (07) 3808 7637
Email: suziauto@live.com.au
Web: http://ozdiyelectricvehicles.com

Tritium (Queensland/nationwide/world)
DC Fast Charging equipment designer & manufacturer
Phone: (07) 3147 8500
Email: enquiries@tritium.com.au
Web: https://www.tritium.com.au/

Priority One, powered by Ngroup (Mornington Pen. Vic)
Energy efficiency specialists in electrical, solar, batteries, hot water, heating & cooling.
Email: operations@priorityone.services
Web: www.priorityone.services

Rectifier Technologies (Victoria, nationwide)
Power converters for electric vehicle chargers.
Phone: (03) 9896 7500
Email: sales@rtp.com.au
Web: www.rtp.com.au

Electro.Aero (WA)
Electric aircraft flights and training
Web: http://electro.aero

Gemtek Automation (WA, nationwide)
EVSE metering, installation, maintenance, service, spare parts, cables and adaptors.
Phone: (08) 9248 1881
Email: admin@gemtek.com.au
Web: www.gemtek.com.au

MiCycles - Adelaide Electric Bikes (SA)
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32A George St - Thebarton - South Australia
Phone: 0424 569 317
Email: electricbikes@micycles.com.au
Web: www.micycles.com.au

Ogden Power (Alice Springs, NT)
Power generation design, install & service - solar, batteries, generators.
Phone: 0427 718 774
Email: rede@ogdenpower.com
Web: www.ogdenpower.com.au

Betts Boat Electrics (Qld, nationwide)
Marine electric propulsion outboard and inboard systems
Phone: 0419 674 135
Email: bbelectricboat@gmail.com
Web: www.bbelectricboat.com

Corporate members pages

SkillBuild (NSW)
Registered Training Organisation 70059
Phone: 1800 059 170; Mob: 0409 154 775
Web: www.skillbuild.edu.au

Zero Emission Vehicles Australia (WA, nationwide)
Designer & manufacturer of EV products incl. motor controllers, battery management and safety systems.
Web: www.zeva.com.au

Apollo Electrotech EC0171 (WA)
Electrical engineers and contractors: Electrical, ICT, Energy Management & Automation, Fire.
Phone: (08) 9434 3333
Web: www.electrotech.com.au

ACE EV Group (Qld)
Electric Vehicles and Infrastructure
Phone: 0412 028 709
Web: www.ace-ev.com.au

RetroEV (Port Adelaide, SA)
Phone: (08) 7226 9282
Mobile: 0437 485 216
Email: energy@retroev.pro

M-TECH EV Technologies (Qld, Aust)
EV charging pedestals, charging points: installations & accessories.
Phone: (07) 5580 3041
Email: info@m-tech.com.au
Web: www.m-tech.com.au

EVolution (Victoria, nationwide)
For EVerything EV, all you need is EVolution.
Phone: AUS 1300 70 11 99; NZ 0800 11 11 51
Email: contactus@evolutionaustralia.com.au
Web: https://www.evolutionaustralia.com.au

mpev.com.au (Victoria, nationwide)
Mornington Peninsula Electric Vehicles
Custom classic ev conversions
Phone: 61 3 5988 6808
Email: info@mpev.com.au
Web: mpev.com.au

Launceston Drive Park Fly (Tas)
Long term airport car park, car wash, detailing and more.
Email: team@driveparkfly.com.au
Web: https://www.driveparkfly.com.au/

Assured Learning Australia (WA)
Registered Training Organisation (52765)
Serving the auto, mining and agricultural industries.
Phone: 0488 038 904
Email: support@assuredlearning.com.au
Web: https://www.assuredlearning.com.au/

Peninsula Solar (Mornington Peninsula, Victoria)
For all your EV, Solar and Electrical needs.
Phone: 0403653192
Email: pat@psevic.com.au
Website: www.peninsulasolar.net.au

EON Charge (VIC, nationwide)
Smart EV charging infrastructure solutions.
Email: info@eoncharge.com.au
Web: https://eoncharge.com.au

EVNews is the quarterly national newsletter of the Australian Electric Vehicle Association. (AEVA)

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Next issue deadlines:

Articles, corporate member listings:
December 19th, 2020

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December 1st, 2020

Paid advertising copy:
December 19th, 2020

Branch reports and For Sale/Wanted:
January 2nd, 2021

Publication date: January 10th, 2021 (Approx)

Contents

Who is AEVA?

The Australian Electric Vehicle Association Inc. (AEVA) is a volunteer run, not-for-profit organisation dedicated to the cause of switching Australia's transport networks to electric drive as quickly as possible. Members come from a wide range of backgrounds, but all share a common interest in Electric Vehicles (EVs) and electric vehicle technology.

The AEVA is structured as a federation of state-based branches, overseen by a National Executive.

The purpose of the AEVA is to provide a forum for social and technical communication in the EV field, create greater awareness of EVs and encourage their use, to foster further research and development in EV technology, and to be an official source of information on EVs in Australia.

There are branches in all states and territories except the Northern Territory, which is currently covered by the SA branch. Branch contact details are listed at the end of this newsletter and the 'Around the Branches' section gives details of what's going on in your part of the country.

AEVA media contacts

As a national body, we have members in each state and territory who are keen to field any questions for radio, television and print media.

TAS: Clive Attwater - 0439 941 934

NSW: Michael Day - 0419 986 801

ACT: Peter Gorton - 0419 601 579

VIC: Bryce Gaton - 0428 537 053

SA: Sally Knight – 0420 898 628

- NT (Alice Springs): Hunter Murray - (08) 89523411
- NT (Darwin): Richard Smith – 0401 110 198

WA: Chris Jones - 0418 908 002

QLD: Graeme Manietta - 07 38087637

From the editor

Bryce Gaton, national AEVA newsletter editor & Vice-chair, AEVA Victoria

At the risk of announcing my farewell from the editor's role more times that Johnny Farnham has sold tickets to his farewell concerts …

Yes, I am back and starting my fourth term as EVNews editor … (in what was, by the way, an originally intended two year stint to set EVNews up to better represent and serve the growing needs of the Australian EV community).

The big news in this edition is twofold. First is that you have a bumper bumper edition of 72 pages! The second is that is the 12 page centre section (starting on Page 31) covering the full program and description for the 2020 EV Vision e-Conference! This program is updated weekly as the last of the speaker and talk details come in. (For the latest version, go to https://aeva.delegateconnect.co/). The 2020 EVVision conference gives you the opportunity to see the biggest ever EV conference (in person or virtual) ever assembled in Australia – with presentations from local, national and international speakers talking on an enormous range of EV topics.

So what's in the rest of this edition? Well, you get a selection of EV owners' reports – one from Tesla Model 3 owner Peter Hayes (Page 12), who did a (just) pre-Covid trip around Australia in his new Model 3. We also get another Model 3 owner's report (Page 23) from Hunter Murray (NT AEVA member) who entered the Red Centre Nationals event to silently scare the more noisy amongst them! Also in this edition is a 'Member's Profile' of long standing Queensland branch member and EV conversion business owner, Graeme Manietta (P. 28). Conversions also get good coverage this edition with an article on Tim Harrison's addition of CHAdeMO DC charging to his 1965 Cortina (Page 49), as well as a progress update on Steve Carter's Singer ute conversion (Page 52).

In the regular 'under the covers' section you get an explanation of why the quoted EV range estimates can vary so widely for supposedly the same vehicle offered in different countries – and which are the most reliable for use when evaluating a potential choice of EV (Page 25).

As usual, you get the current BEV/PHEV list of available EVs in Australia (Page 16: as always, the latest version can be downloaded from https://www.aeva.asn.au/battery-electric-vehicle-models-bevs/) plus a collection of EV articles I've written for other publications – including one on a new extreme rally EV championship (Page 17) and how AC EV charging is literally 'popping up' in local streets. (Page 44).

And last, but definitely not least, are the local branch reports (starting on Page 63). They are a brilliant source of ideas and contacts to ask about events to run and the best ways to do them.

So enjoy your latest EVNews and, as always, if you want to contribute to this newsletter with experiences, articles (include photos please), product reviews, App suggestions or anything else – feel free to email me at EVNews@bigpond.com. Article, Branch Report and advertising deadlines for the next edition are listed on page 3.

Yours in EV'ing!
Bryce Gaton.
EVNews editor and Victorian AEVA vice-chair

From the president

Chris Nash: National AEVA President and Victorian AEVA branch Chair

Welcome to our 'Conference Edition' of the AEVA Newsletter.

On the 27th November we will be holding the largest EV only conference ever seen in Australia. With over 40 speakers including Tim Flannery (Climate Council), Robert Llewellyn (Fully Charged) and Lily D'Ambrosio (Victorian Minister for Energy, Environment and Climate Change), plus speakers from EV Associations in Norway, Scotland New Zealand and Canada, it is an event not to be missed! Tickets are only $40 for members ($25 concession) and are available from the AEVA website, so get along to this ground breaking event and see what the future holds for EVs in Australia.

As most members would be aware, we have held our Annual General Meeting on October 3rd. It was the first time the association has held this meeting 'virtually' and it worked very well with members logged in from all corners of the nation. The current National Executive was returned unopposed and I congratulate Clive Attwater (Vice President), Chris Jones (Secretary) and Michael Day (Treasurer) on retaining their positions. Although this year has been quite extraordinary and our usual activities have been difficult to maintain, the executive has worked well to keep AEVA moving forward.

Branch AGMs have also been completed and I offer congratulations and thanks to all those committee members around the country who have taken on a role for the upcoming twelve months. As a volunteer organisation, we exist only because of the great work our passionate volunteers do all year round. It is one of the wonderful features of the Australian Electric Vehicle Association.

The change to an EV future needs our constant discussion and encouragement and the EV Vision conference next month will generate plenty of extra interest in the EV scene here in Australia. So please take the opportunity to spread the message wide and far when it presents itself. As passionate advocates and users of electric vehicles we are the best ambassadors for this change.

Best wishes and stay safe.

Chris Nash

National President – Australian Electric Vehicle Association

From the secretary

Dr Chris Jones; AEVA national secretary and WA Branch vice chair

This year has been a critical year on many fronts. Global temperatures are breaking records which were set the year before, while CO_2 and CH_4 emissions continue to grow. Australian politics has become an absurd pantomime where black is white, right is wrong, and we're told emissions are being reduced while simultaneously opening up new coal mines and gas hubs. Transport emissions are Australia's worst performing sector – currently representing 20% of all greenhouse gas emissions and growing. Little wonder the ABC's Fight for Planet A television series was so popular.

Despite the challenges, the AEVA has continued on our mission to see the electrification of everything that moves. Whether it's submissions to government, meetings with MPs and senators, or something as simple as inviting a business leader to an EV display, we've been pushing for a fairer and quicker transition to electric mobility. We're raising funds for critical charging infrastructure in regional WA, hosting a series of drive days in the ACT thanks to a successful grant application, and we're collaborating with like minds in other organisations like ReNew, SEN, Cleanstate, Idle Off, the EV Council, Standards Australia, AEMO and countless other statutory bodies. One good thing to come out of the pandemic was the AEVA official Zoom account, which allows any branch to host a virtual meeting, allowing members who live far away from the cities to get involved.

The new website has been running smoothly for about six months now, with articles, events, stories and factsheets in abundance. We can even manage bookings through the events feature and business members of the AEVA have a space in the Directories section to promote their wares.

Our membership growth has stalled a little, which was to be expected in the transition from the old database to the new one. So now is the time to start pushing for more members as EVs hit the mainstream. Our association represents a wealth of knowledge, experience and humility, and we look forward to sharing it with the nation. As the organisation grows, so too will the demands on our branch committees. The AEVA is still run by volunteers and it can be quite a thankless task, so please be patient as we do our best to make things happen. Plans are underway to update the structure of the organisation such that we can one day pay staff to manage our affairs. This places a greater emphasis on growing the membership and improving our revenues so we don't burn out our greatest contributors.

Let's make 2021 the year of change. Let's aim to double our membership, and get out into the regions to demonstrate the opportunities EVs offer. Let's aim to include the full diversity of Australia into our organisation, and tailor our efforts to those less well off. The most resilient change happens from the ground up.

After all, you can't stop an idea whose time has come.

And finally: if you have any questions relating to the running of AEVA events, public liability insurance, introductions or just where to find some information on EVs and charging, please send me a message on secretary@aeva.asn.au

Chris Jones, AEVA national secretary.

EV Website links

New listings for this edition in red:

Australian:

TheDriven https://thedriven.io/
Drive Zero https://www.drivezero.com.au/
EVTalk http://evtalk.com.au/
My Electric Car https://myelectriccar.com.au/
EVGO https://whatevs.io/
EV Festival: https://evfestival.com.au

International:

Plugin cars http://www.plugincars.com
NZ Gov. EV info site https://www.electricvehicles.govt.nz/
Green Car Reports https://www.greencarreports.com/
Inside EVs https://insideevs.com
Cleantechnica https://cleantechnica.com/
Electrek https://electrek.co/
EVObsession http://evobsession.com/
Charged EVs http://chargedevs.com
Drive Electric Week https://driveelectricweek.org/
Push EVs: https://pushevs.com/
Driving Electric (UK site): https://www.drivingelectric.com
Motorsport: https://sportscar365.com/category/ev-racing/

Video sites:

Fully Charged http://www.fullychargedshow.co.uk/
Autogefuehl https://www.youtube.com/user/autogefuehl
Electromotive Force EVs: (AEVA member)
https://www.youtube.com/channel/UC51_0pVDjgn1DbDFmjxFxQQ/videos

Reminder: AEVA YouTube channel

Yes folks, we now have our own dedicated YouTube channel! You will find it at:
https://www.youtube.com/channel/UCnXUeRiI052r6piTRh46Qdw/videos

AEVA EV Fact Sheets

The AEVA website hosts two page ***EV Fact Sheets*** on each of the full battery electric vehicles (BEVs) on the Australian market – plus a summary table listing the prices and major specifications of all the BEVs and PHEVs (Plug-in Electric Vehicles) available (or coming soon) to Australia.
New BEV Fact Sheets are added when a model is officially released to the Australian market. They are also updated whenever there is major model change or upgrade. The PHEV/BEV sheet is updated monthly. (And reproduced quarterly in *EVNews* – see page 16).
For the latest versions, see:
https://www.aeva.asn.au/battery-electric-vehicle-models-bevs/

International EV Association sites:

Plug In America https://pluginamerica.org/
Electric Auto Assoc (US) https://www.electricauto.org/
EVA Scotland: https://www.eva.scot/
Norwegian EVA:
https://elbil.no/english/about-norwegian-ev-association/

MEET THE EC11

ARRIVING SOON

The first of its size to arrive in Australia, the EC11 100% Electric Van has the space, power and convenience to conquer all of your commercial requirements, today and into the future.

This rear-wheel drive light commerical van is powered by an 80.79kWh battery and will be able to recharge in as little as 2 hours* and offers a 220-300km driving range^.

It also offers customers the ability to transport either their passengers or commercial cargo with the safety and convenience provided by a variety of choices for optional factory interior designs and fit-outs. Configurable to hold from 3 to 12 passengers or providing 12.3m³ of cargo capacity with a 1,790 kg payload; the EC11 100% Electric Van is extremely versatile.

Keep reading to learn more about the features and options available and download the full brochure. The EV-A team looks forward to hearing from you!

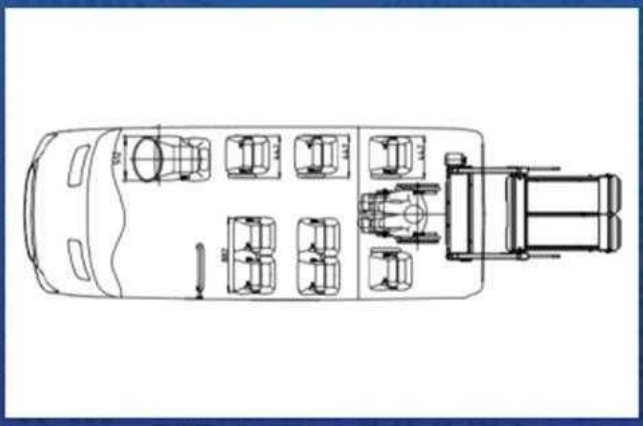
*** Specifications subject to change.**

Safety features include ABS anti-lock braking, Dual Airbags, reverse sensors and camera, live stream rear vision mirror, front and rear dash cams.

Other standard features include front power windows and mirrors, alloy wheels, side sliding door and airconditioning (front and rear in passenger models)

With a 1930mm high and 1750mm wide rear door opening and interior cargo length of 3.3m, the EC11 offers a 12.3m3 load volume and 1790kg load capacity.

It is also equipped with a built-in Cargo Barrier, Rear Twin Swing doors that can open to 270 degrees and a side sliding door with a 1500 mm opening.



The EC11 Electric Minibus is exceptionally versatile. Factory configurable to hold from 3-12 people with four optional factory interior designs and fit-outs including a factory -fitted Wheelchair loading system accommodating up to a maximum of 10 passengers.

ENQUIRE NOW

DOWNLOAD BROCHURE

*Using a CCS2 fast-charging plug type with a minimum 80kW charge rate. ^Depending on load.

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EV-A

Owners' experiences: Around Australia in a Tesla Model 3

By Peter Hayes, AEVA Victoria member.
Done only just in time before Covid hit!

West: Port Hedland at Dawn

I have been intending to "Go Electric" for years, but the range of vehicles available in Australia had never appealed to me, and finding time to "Do it Myself" was an insuperable obstacle. Then the Tesla Model 3 appeared: it looked brilliant and appeared to offer the range I was looking for (combination of battery size and efficiency) despite the price. With retirement approaching (and the prospect of enough cash to buy my first new car) I placed an order and settled in to hope and wait…

Finally in late September 2019 the car arrived (a 75kWh Model 3 with an ADR Range of 595 km – unachievable in normal driving of course). My plans were to head straight off on an around-Australia trip, and there was just enough time to get ready before it would get too hot for comfort.

South Nullarbor cliffs, SA

I departed Melbourne on 22 October 2019, with the aim of following Highway One all the way around Australia (with the sole exception of the unsealed bit along the Gulf of Capricorn coast). I headed up the East Coast, as that promised to get me into (and out of) the tropics as early as possible – essential in such a late trip in a glass-roofed car! I had done my homework on charging stops (isn't Plugshare brilliant :-) and knew the first leg would be a challenge: in 2019 the options for charging a Tesla between Melbourne and Narooma, NSW were slim. But an early start and some strategic hours at Lakes Entrance and Gypsy Point (it's surprising how helpful people are if you ask nicely, and for future travellers I tried to help further by presenting a bottle of wine) that barrier was passed and Narooma was reached with 5% charge to spare.

The East Coast is easy: Superchargers and the Queensland Electric Highway saw me in Cairns in under a week. Then the true challenge started, moving from charging oasis to oasis thanks to

occasional forward-thinking Motel owners, the AEVA's three-phase 32A outlets and suitable adaptors. I was pushed for time so late in the season, so I always left with a 100% battery and stopped along the way for a slow charge top-up to extend the day's range. I quickly realised that for optimum speed of travel, a speed in the mid-80s was best: much faster and you had to spend much longer at your midday charge location.

Northern WA: get some charge and stay out of the sun…

I completed the Highway One circuit on 16 November 2019. The Tesla behaved brilliantly, though I was less than impressed when some Broome locals smashed the driver's side rear window one night. The Tesla's alarm system woke the Cable Beach Resort staff (Broome is low on overnight charging alternatives) before the thieves could break into any more cars, which was a good outcome overall. Of course, Tesla parts are in short supply (especially up North!) but some tape and a carefully trimmed piece of 3mm Polycarbonate sheet from Bunnings (plus some heavy-duty tape) saw me back to Melbourne without even a whistle at Highway speeds. Just so long as I didn't use that door!

I had one nasty surprise. On calling ahead the day before, on one leg in the NT a critical charging stop suffered a dead generator, so my planned trip north from Tennant Creek was in tatters. I had not tried to push the Tesla much past 500 km before, but now had a minimum of 570 km to cover (Tennant Creek to Mataranka Resort). A midnight departure, 55 to 60 kph speed and a quiet road saw me at 50% battery with 360 km travelled (giving a theoretical range of 720 km at this speed). So Mataranka was reached with even enough charge to splurge on Air Conditioning after the sun came up!

I thoroughly recommend the trip, and for the help of future travellers: full details of the car, the accessories and the legs are on my first-and-only Blog: see **teslamodel3highwayone.wordpress.com**

Peter Hayes

East: Bowen QLD

Market Update: Q3 2020

By Bryce Gaton, EVNews editor

So much EV news from here and around the world: and so little space in this edition to cover it!

Australia:
The Australian Renewable Energy Agency (ARENA) is funding a $2.4 million trial of vehicle-to-grid (V2G) charging systems with the aim of seeing how two-way charging can help energy needs and, at the same time, pay car owners for the electricity generated. Mind-you, the idea isn't new, but so far has not caught on much outside of Japan. Whilst Nissan has had V2G capability in Japan for many years as a way to deal with potential natural disasters, in Australia these systems can only be installed as part of approved trials as V2G equipment is not yet approved for sale here.

AUDI has revealed the Sportback version of its Q4 E-Tron all-electric SUV in pre-production guise, which will join the 'regular' Q4 E-Tron when both go into series production in around 12 months' time. Audi Australia says the Q4 twins are under consideration for Australia, with the company currently set to launch its first-ever EV, the standalone E-Tron and E-Tron Sportback soon, priced from $137,700 and $148,700 plus on-road costs respectively.

Meanwhile the Peugeot 2008 will arrive on Aussie soil in Q4 this year, with *"all drivetrains including the full-electric 2008"* under consideration. Dubbed the e-2008, the electric version of the 2008 is powered by the same 100kW/260Nm electric motor and 50kWh lithium ion battery pack as the closely related e-208 hatchback available overseas. The e-2008 has a claimed range of up to 310 km.

Mercedes Benz Australia/Pacific has announced its A250e plug-in hybrid (PHEV) has arrived in local showrooms, with the PHEV priced from $63,400 plus on-road costs (ORCs) for the hatch, with the PHEV sedan starting at $66,000 (plus the dreaded ORCs). The PHEV has a 15.6kWh lithium-ion battery providing up to 73km of pure-electric driving range.

Mitsubishi Motors Australia Limited has released its new model year 2021 Outlander PHEV line up. The Outlander will now include a new sports-oriented model featuring a Bilstein suspension set-up. Officially dubbed the GSR, the new variant features all of the same mechanicals as the other PHEV variants but is underpinned by a new Bilstein suspension.

In hydrogen news, an agreement has been made for the construction of a series of hydrogen production facilities along Australia's east coast, starting with a $300 million hydrogen hub in Bundaberg. The agreement was signed by Australian companies Elvin Group Renewables, Denzo Pty Ltd and local fuel-cell electric vehicle (FCEV) start-up manufacturer H2X.

World:
Californian electric vehicle start-up Fisker has received $US50 million ($Au71.5m) in financing to move to the next stage of developing its all-new Ocean SUV, keeping it on track for a 2022 launch. The funds, from a private investment company in the US, further confirm Fisker's plan for the EV SUV and push the Ocean closer to market. Fiskar claim that more than 22,000 people from 116 countries have paid a deposit or expressed interest in the model.

American EV brand Lucid has (finally) launched its Tesla rivalling Air super-sedan. Initially to be made available in the US priced from "below $US80,000" ($Au110,000), the Air is underpinned by Lucid's 'electric advanced platform' (LEAP) with the top-spec Dream Edition priced at ($US169,000/$Au232,000) with a 113kWh battery pack. First deliveries are expected to start around mid-2021.

Nissan has debuted to the world a concept vehicle based on its Leaf e+ (the e+ is the 62kWh battery version not brought to Australia). Dubbed the 'Re-Leaf' emergency services model, it is aimed at

providing aid in emergency situations. The Re-Leaf is designed to be driven to disaster zones and provide mobile AC power.

Nissan ReLeaf e+. Image: Nissan

That's it for the EV News update for this quarter – looking forward to the next one when I can finally drive out and about beyond 5km again to enjoy my own EV!

Current Australian BEV & PHEV availability (here, or coming very soon)

By Bryce Gaton

Current to October 1st, 2020

For latest version: see https://www.aeva.asn.au/battery-electric-vehicle-models-bevs/

EV model	*EV type*	*BEV range[1] quoted/real world[2] km*	*Battery size: kWh*	*Tow rating? Unbraked/braked*	*Cost[3]*	*Available now or ETA[4]*
Audi e-tron	BEV	400/328	95	X	$153,700	Q4, 2020?
BMWi3	BEV	335/246	42	X	$78,000	Y
BMWi3S	BEV	335/246	42	X	$80,456	Y
EV Auto: EC11 1.79T van	BEV	405/TBC	81	TBC	TBC$95k	Q4 2020?
Hyundai Kona electric	BEV	482/420	64	?	$63,700	Y
Hyundai Ioniq electric	BEV	373/290	38	X	$53,920	Y
Jaguar I-Pace	BEV	480/352	90	TBC (750kg)	$127,990	Y
Mercedes EQC	BEV	434/354	80	X	$148,333	Y
MG ZS EV	BEV	332/257	44.5	X	$47,000	Q4 2020?
Mini Cooper SE	BEV	232[5]/TBC	32.6	X	$59,900	Q3 2020
Nissan Leaf ZE1	BEV	285/240	40	X	$53,785	Y
Porsche Taycan	BEV	500/322	3	X	$218,224	Q4 2020?
Renault Zoe	BEV	400/300	41	X	$49,990	Y
Renault Kangoo ZE van	BEV	270/200	33	322kg max	$53,000	Y
Tesla Model X Long Range	BEV	575/470	100	750/2250kg	$174,817	Y
Tesla Model X Performance	BEV	550/450	100	750/2250kg	$196,063	Y
Tesla Model S Long Range	BEV	660/530	100	X	$152,147	Y
Tesla Model S Performance	BEV	650/520	100	X	$176,225	Y
Tesla Model 3 (base)	BEV	460/350	50	750/910kg	$83,151	Y
Tesla Model 3 Long Range	BEV	620/500	75	750/910kg	$100,248	Y
Volvo XC40	BEV	TBC/400	78	TBC	TBC: $75k	Q4 2020?
BMW 330e	PHEV	60/37	12	X	$91,500	Y
BMW X5 xDrive45e	PHEV	92/48	21.5	750/2700	$150,509	Y
BMW 530e	PHEV	50/32	10.8	X	$126,000	Y
Hyundai Ioniq plug-in	PHEV	63/48	8.9	X	$46,053	Y
Mini Countryman	PHEV	40/TBC	7.6	X	$64,471	Y
Mitsubishi Outlander	PHEV	54/35	12	750/1500	$51,400	Y
Mercedes A250e	PHEV	73/TBC	15.6	X	$71,500	Y
Porsche Panemera S E-Hybrid	PHEV	50/25	14.1	X	$510,000	Y
Porsche Panamera E-Hybrid	PHEV	51/25	14.1	X	$280,000	Y
Range Rover Si4 PHEV Vogue	PHEV	51/35	13.1	750/2500	$230,000	Y
Volvo XC90-T8	PHEV	43/22	9.2	750/2400	$130,000	Y

Notes:

1. Quoted ranges are from the Green Vehicle Guide: https://www.greenvehicleguide.gov.au wherever possible. Those not yet available in Australia use the NEDC ratings as they are closest to the current Australian ratings scheme.
2. Real world ranges are US EPA ranges except for Renault, where manufacturer quoted real-world range used.
3. Approximate base model price based on currently available vehicle sales listings, inc on-road costs (ORCs).
4. ETA: Q=quarter. Q1=Jan-Mar; Q2=Apr-Jun; Q3=July-Sept; Q4=Oct-Dec

WLTP range - will not be rated under NEDC until Australian arrival

Marrying motorsport with both environmental and equity consciousness?

By Bryce Gaton. First published by TheDriven.io, August 2020
Motorsport and environmentalism are not normally associated positively in the public mind. A new motorsport rally series is hoping to change that perception.

Image: extreme-e.com

Arguably, the annual Dakar rally is the biggest possible bastion of the Internal Combustion Engine (ICE) vehicle, yet the first all-electric competitor in it was in 2015 – and in 2017 that team actually finished the event. (Yes, it was in last place – but just finishing the event is a major milestone as between a quarter and a third of entries fail to finish).

A follow-on from this success was the demonstration at the start of the 2020 Dakar rally of a new all-electric rally SUV. Called the *Extreme-E Odyssey 21*, this vehicle is now to become the basis of the new *Extreme-E* all-electric rally event series.

Interestingly, the originators of the Extreme-E series see it as not only a way to showcase and develop electric rally cars to the point of taking on the Dakar challenge – they also want to modernise the perception of motorsport. To do so, they have developed the series with the following three aims in mind:

(a) showcase world-class, sustainable motorsport;
(b) highlight the impacts of human-induced climate change and
(c) demonstrate equality through a format that allows men and women to compete on an equal basis in the same event.

The vehicles themselves are a battery-electric, 400kw (550hp), 1650-kilogram, 2.3-metre wide E-SUV. Built on custom-made alloy space frame, they can do 0-100km/h in 4.5 seconds and climb gradients of up to 130 percent.

The event sites have been deliberately chosen to highlight regions negatively impacted by human induced climate change. By doing so, they want to inspire viewers to consider their own environmental impact through showcasing their own efforts to minimise the event footprint

wherever possible, and where this is not possible, to offset any unavoidable impacts via local legacy environmental projects.

The format rules are designed to showcase gender equality by design through specifying that teams must comprise one male and one female driver, with each spending an equal time on the track competing against both male and female drivers. The event website describes the gender equity rules as:
"Teams will field one male and one female driver, promoting gender equality and a level playing field amongst competitors. Each driver will complete one lap behind the wheel, with a changeover incorporated into the race format. The teams will determine which driver goes first to best suit their strategy and driver order selections are made confidentially, with competitors kept in the dark as to other teams' choices until the cars reach the start-line. Contests between males and females will therefore be ensured."

It will be interesting to see how successful the series is at meeting its aims, as well as how long it takes for vehicles field tested and developed through these events to start reaching podium positions in the Dakar rally itself…

Image: extreme-e.com

2021 Extreme-E events calendar and locations:
Coast: 23-24 January. Lac Rose, Senegal (approximately 30km from Dakar)
Legacy project: support 60 hectares of mangrove reforestation.
Desert: 6-7 March. Al-Ula, Saudi Arabia
Legacy project: work with local and international experts in the field on projects serving to preserve and restore ecosystems affected by the impact of desertification and climate change.
Mountain: 14-15 March. Kali Gandaki Valley, Nepal
Legacy project: in development
Glacier: 28-29 August. Kangerlussuaq, Greenland
Legacy project: support research into protecting Arctic ice.
Rainforest: 30-31 October. Para, Brazil
Legacy project: support research by The Nature Conservancy (TNC) who have more than 24 years of conservation experience across the Amazon.

For more information, see: https://www.extreme-e.com/

Solar power and EV charging come to Queensland eco-resort

By Graeme Manietta. AEVA Queensland Vice-chair

ECO Tourist resort , Cairns Gateway Resort at Woree Cairns.

In 2014 the Cairns Gateway Resort Body Corp was financially struggling with rising power costs, adding to a hefty annual insurance bill and units being rented out cheaper and cheaper as the effects of the GFC really started hitting home.

Something had to be done as the quality was fast descending and money for upkeep was hard to find, Quarterly fees were continually rising so some decisions were made to look at onsite cost reductions.

An energy expert was called in to do an assessment and propose a schedule for the Body Corp committee to follow as funds were available. The plan was to focus on the best results for the lease expenditure ASAP.

We started with the report and chose to begin with swapping out lights for low consumption ones. As a bulb or light or even floodlights needed replacement, a low consumption one was installed. This process took a few years but now nearly every bulb onsite is LED or similar. We also looked at timers on ceiling fans in public areas. It was amusing to hear the staff were not sure where the switches were for the fans so some had likely run several years non-stop!

We encouraged unit owners to swap out the rattling old box air conditioners with highly efficient split air conditioners as they need to be replaced, again over the years these are swapping out and the power and noise levels are dropping. In a few years, all will be swapped over. Owners benefit from longer warranty on these over the cheap box units.

Next we looked at the heat pumps, a 200 unit complex like Cairns Gateway Resort uses a lot of hot water! The existing systems were Heat Pumps but over 20 years old and no longer efficient or reliable. When 1 fails the others worked harder to keep up. The pipework also saw an upgrade with an insulating wrap to reduce heat losses. This was a huge project for over 2 years but seriously reduced the power required. After that project, we had every tap washer sorted for leaks, 200 wasteful shower heads replaced with the efficient low flow to reduce hot water and water consumption generally.

We then had an opportunity when Main Roads resumed several metres off one boundary and the funds received were put to good use adding a 100kW solar system in 2016. We chose Tom from Hush Energy as he had the very best system with micro inverters. This system works exceptionally well and serves us reliably.

Looking for further savings we noted the resort had 200 TV screens all on standby power when turned off. Some research led us to buy 200 standby power savers that switch off the power at the wall when TVs are turned off.

By Dec 2019 our power bill had reduced from $28,000 per month (2015) to $18,000 per month! Considering power prices had risen during that period, it would seem the funds spent were coming back rather quickly in savings; the unit owners also enjoyed a reduction in fees. As money was now available more maintenance and beautification occurred and as owners had more income from rents they spent on restoring and maintaining these units which in turn attracted a better rental rate. Rents have increased 50% over this time. (Average).

So the "greening" of the complex has led to lower expense, better maintenance, much better-looking property and higher returns for owners.

In late 2019 we chose to re-invest from a low earning IBD into further expansion in solar as we had lots of roof space available still, Hush Energy and Super Quick Electric were the two companies quoting and the super quick system was chosen (130kW. Other upgrades to the power systems on the property allowed some feed-in and an energy monitoring equipment to claim Renewable Energy Certificates over the next 10 years making the return on investment much sooner. We expect this to reduce our energy bill greatly and return far more than the couple of per cent interest we had been receiving.

EV Charging spots now added to the resort.

The current committee and owners are very supportive and highly motivated to continue energy savings and generally improve the lifestyle enjoyed onsite. To attract more tourism to the resort it was decided to add 2 vehicle car parks with Electric Car Chargers. These chargers are supplied during the day from the 2 massive solar systems meaning the cars charging are doing so on solar power. After hours at this stage its grid supply. DC Electrical in Brisbane did an awesome job supplying the charging equipment and even had the bollard it's mounted on made from recycled plastics. The charging is supplied free of cost to attract Electric Car owners to stay with us rather than other resorts. The charging option was shared on an app called Plugshare and within a few hours, a booking was made specifically stating that they appreciated the car charging offered.

Future projects include the possible use of energy storage in all those HWS to offset the huge demand charges we get and when the storage batteries are more affordable these too will be part of the future energy mix. Our hope is to have zero net import of power and the most ‘eco-resort’ in Australia. It’s important to note the good work, support and enthusiasm of the onsite management team led by Maryanne and Ian Wedgewood.

Renault ends sale of Zoe in Australia

By Bryce Gaton. First published by TheDriven.io, August 2020

ZE40 Zoe. Image: Groupe Renault

The recent announcement by Renault Australia that they will no longer sell the electric Renault Zoe here on the basis (to paraphrase Renault Australia) *'that they can't seem to sell them'* is more than a little baffling.

In Europe, the Zoe has been the best-selling full-battery EV, if not EV, for several years – and in June this year drew well clear of the opposition selling over 10,000 units (see figure 1). This was comfortably ahead of the Tesla Model 3, the Nissan Leaf and the Hyundai Kona (all three of which are for sale here).

Top 10 Best-Selling Cars Europe-27 June 2020

* Europe-21

	Overall Ranking		Hybrid/Mild Hybrid*		Plug-in Hybrid*		Electric*	
1	Renault Clio	37,119	Toyota C-HR	7,791	Ford Kuga	3,757	Renault Zoe	10,225
2	Volkswagen Golf	24,474	Toyota Corolla	7,735	Mitsubishi Outlander	2,578	Tesla Model 3	7,066
3	Renault Captur	22,287	Toyota Yaris	7,708	Volvo XC40	2,452	Volkswagen Golf	3,022
4	Dacia Sandero	20,699	Toyota RAV4	7,448	Volvo XC60	2,017	Peugeot 208	2,878
5	Toyota Yaris	19,532	Ford Puma	7,403	Volvo V60	1,833	Hyundai Kona	2,662
6	Peugeot 208	19,194	Suzuki Swift	4,651	Audi A3	1,491	Kia Niro	2,315
7	Ford Focus	18,113	Fiat 500	4,248	Mercedes A-Class	1,462	Nissan Leaf	1,914
8	Dacia Duster	17,400	Suzuki Ignis	3,325	Volkswagen Passat	1,455	Volkswagen Up	1,775
9	Peugeot 2008	17,092	Kia Niro	2,818	Audi Q5	1,340	Audi E-Tron	1,704
10	Opel/Vauxhall Corsa	17,073	Volvo XC60	2,765	BMW 3-Series	1,302	BMW i3	1,584

JATO

Fig. 1: European ICE, HEV, PHEV and BEV passenger car sales figures for June. Image: JATO

So why couldn't Renault sell the Zoe here, when it appears that Tesla, Hyundai and even Renault alliance member Nissan are all happy to continue selling their EV products in Australia when they sell way fewer of them than the Zoe in Europe?

Part of the reason is included in Renault Australia's statements to the press – where they cited a lack of government support for EVs and/or tighter emissions standards as part of the reasoning for discontinuing the model here.

The other sad fact is that Renault have done a poor marketing job trying to sell the Zoe in Australia, despite its runaway success overseas. Or perhaps one could say it was ***because*** of its success in Europe that they didn't push it here (or even bring the current 50kWh model, available in Europe since September last year).

I say this as, like all EV manufacturers, Renault have manufacturing and supply bottlenecks to overcome – so the bottom line is that it's simply not worth it to them to bring a small volume electric vehicle to Australia that struggles against ICE (Internal Combustion Engine) vehicle prices in a market that does not factor in the costs of the CO_2 and pollution damage ICE cars cause when they can easily sell them in other markets. As a result, manufacturers naturally focus their production capacity on markets that support and encourage the uptake of low emissions transport.

These markets by the way do so by what can be best summarised as a 'carrots and sticks' approach - the carrots being in subsidies and tax breaks to buyers, and the sticks being penalties on manufacturers that produce higher polluting vehicles and increased manufacturing costs to produce cars that meet ever more stringent fuel quality and emission standards.

Given there are no carrots or sticks being applied by the federal government here – of course the manufacturers with small Australian vehicle market share will prioritise their more profitable models.

As Renault is a small player in the Australian market, this would explain why at the same time as dropping the Zoe EV, they also discontinued both the Clio and Megane passenger car offerings in Australia – instead focussing on the more profitable (and fuel guzzling) SUV and performance models in their range. Meanwhile Hyundai and Nissan, with their much larger sales presences in the Australian market can afford to continue selling lower profit EVs in the effort to build their EV reputation for the future … and meanwhile Tesla simply continues to sell EVs here by the thousands.

Putting the two together (small Renault market share in Australia/Groupe Renault the biggest light vehicle manufacturer in the world) also explains why Renault has such a wildly different approach to selling EVs here versus in Europe.

So hopefully if our federal government can eventually see its way clear to bring in more stringent fuel quality and consumption standards (which have been sitting on Government desks gathering dust for three or more years now), as well as develop EV support policies to smooth the now inevitable EV transition – we may well see the return of the best-selling EV in Europe.

Post-script to original article:

Renault have not entirely given up on selling EVs in Australia – they have since confirmed that the Kangoo ZE light commercial van continues to be offered in Australia, with a new batch arriving around October this year.

Playing with the Big Boys at the Red Centre Nationals

By Hunter Murray. NT member of AEVA SA branch

Red Centre Nationals (RCN) has just completed its 6th year in Alice Springs and the Canberra NATs franchise saw crowd numbers relatively low with C19 restriction in place. However the NT government still wanted a show and C19 didn't deter the 750 entrants coming from all around Australia (even with some having their 2 weeks isolation)...

The collection of rolling art, in some cases, and extreme muscle was party to the first full BEV vehicle racing this year, my Stealth model 3P- "StormFly" (of how to Train my Dragon fame).
Whilst I had been involved with a few RCNs as a spectator/volunteer I was certainly green as a competitor....entering myself in every event with exception to the 'Burnout Comps'.... (I just don't get that stuff!) and with the only point of this venture was to wave the EV flag and to have some fun...
I had actually been expecting our Car in July 2019 - which was about a month late for the 2019 event - so had already booked it in for the 2020 RCN before taking ownership!

So the first challenge chosen was, of course, Drag Racing, and diving into to my YouTube handbook, figured out that I needed to be booked in the 11-12 sec ¼ mile bracket – meaning I narrowly avoided needing a roll cage to be installed for the next faster bracket! It did however find me going up against large block V8s with NASCAR engines and cocktails of hydrocarbons and nitrous oxide!, Unfortunately I didn't gain a place in the finals, even though I won 2 of my 3 races at 11.55 seconds.

As aside, I did volunteer my time to help with some timing issues on their computer system finding out the complexity of this Motorsport isn't just about a straight line sprint... there's some driver skill involved, which I was obviously lacking!

The next event was the grassed gymkhana where you need to weave in and out of poles and collect flags with a passenger, with the outcome being timed. Again the car certainly did better than the driver - however we still received a massive impression from the spectators with the ability to launch out of the gate amid the silent rumble of flying dirt and grass.... again no prize but we did open some weary eyes in the outback....

The third and final event was a motorkhana held at Lassiter's Convention Centre carpark. This event involves a timed weaving course between flags.

This is the one I was really looking forward to... even talked my wife into coming down early on Sunday morning to film me throwing two tonnes of car around a track that was made for a 10km/h speed limit. With the silent torque of the Tesla I wanted to impress, especially with the announcer and the crowd making comments (because I could hear every word inside the car!)

Then while finishing my third round, passing the finish line near on 80km/h - the driver failed the car again! Whilst steering into a corner and braking, I found myself in a long and gentle slide … aiming for a light pole and a tree! In slow motion I found myself thinking, *"oooh this is going to hurt!"* ... then as the traffic island, tree and steel were arriving, a very small gap appeared and the term *threading the needle* came to mind as I flew through it.

Finishing in such style, I jumped out to inspect the damage - finding only a few plastic scratches and no bent rims! There was no doubt then in my mind that if we had forked the extra for the Model 3 Performance plus, I would've been visiting the panel beaters and tyre shop the next day.

Got to also say the RCN crowds that came were very receptive of the technology. Whilst there were a few innuendoes thrown in by commentators, mostly the questions were about how to get into the technology, plus blowing away the usual myths ...

Really hope that you find yourself at a track to test your skills and limits, whether a charity day or social event ... certainly a great way to turn some heads and meet some potential EV fans!

Am now booked for both the EVs in next year's event!
As the saying goes... *"the technology is here, it just hasn't been evenly distributed yet"!*

Under the covers: Why are new EV range estimates often so different?

By Bryce Gaton. First published by TheDriven.io, April 2020

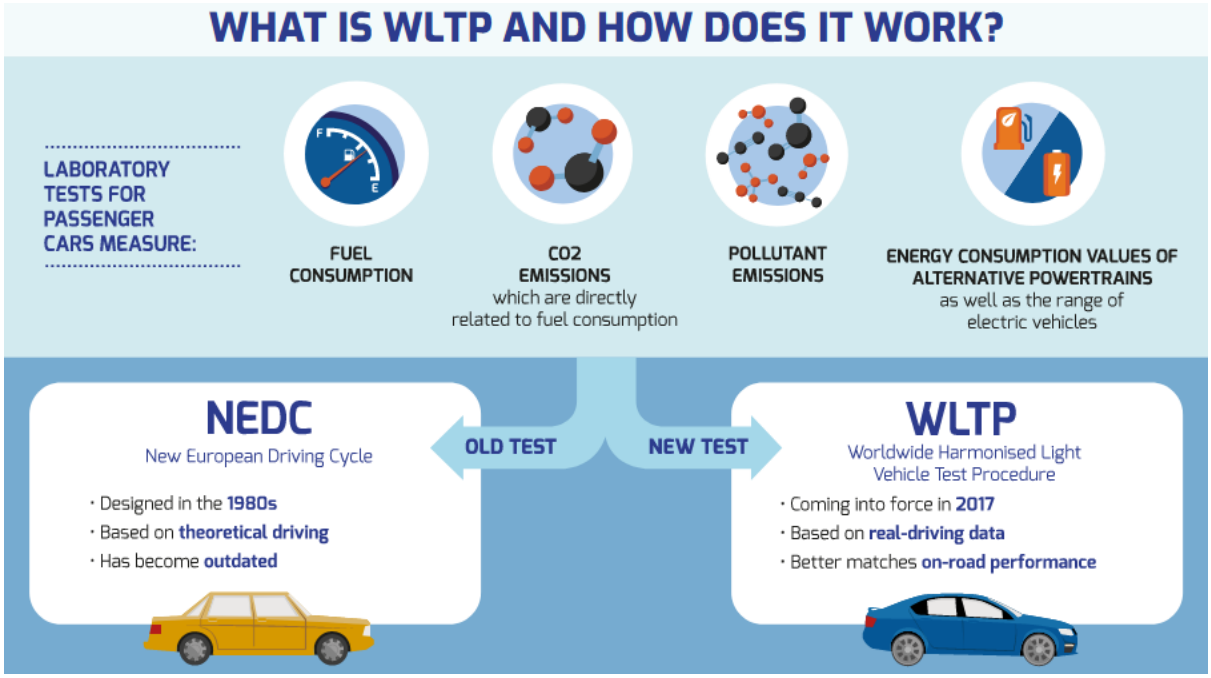
Range estimates for electric vehicles (EVs) - and for that matter, vehicles in general - are often the source of contention.

However, despite appearances, these estimates are not plucked from thin air. The generally quoted figures are normally derived through one of three international testing standards. These are:

- NEDC (New European Driving Cycle),
- WLTP (Worldwide Harmonised Light Vehicle Test Procedure) and
- US EPA (Unites States Environmental Protection Agency).

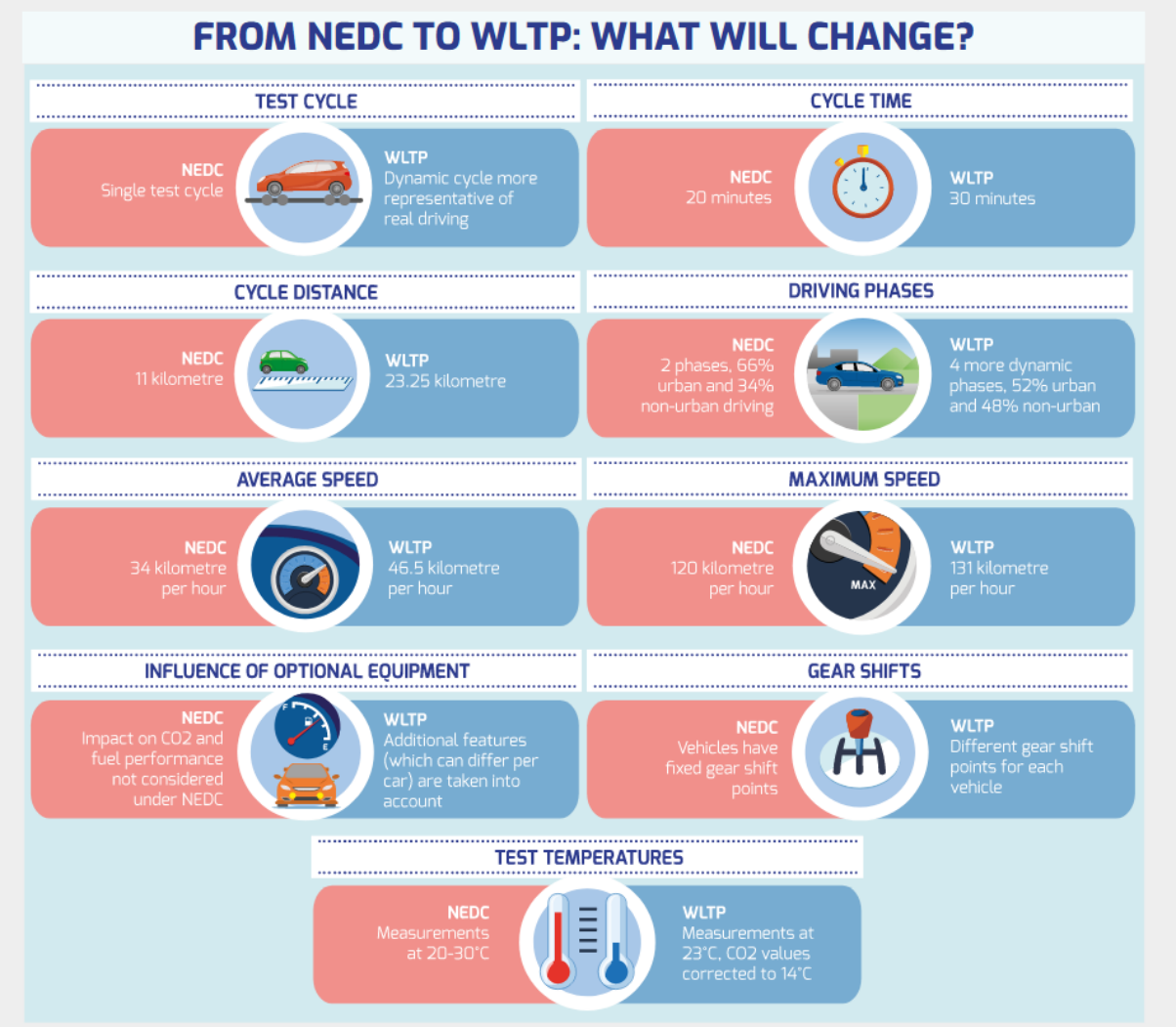
These three test cycles vary as to what proportions of city/country driving is included, as well as the defined climatic conditions. Naturally the European test cycle tends to favour inner city and suburban driving, whilst the US one tends to include more outer suburban and highway driving trips.

By the way, the reason two European standards are bandied about is that WLTP is progressively replacing NEDC for new vehicles as they come onto the European market from September 2017, and all new vehicles in Europe must display WLTP figures from September 2019.



Source: https://wltpfacts.eu/

As background: NEDC is notorious for producing figures around 30% above 'achievable' distances - particularly so towards the end of its reign. This was partly to do with the NEDC test cycle becoming 'too' settled, as well as rather theoretical. Together, these two factors led to auto manufacturers becomming quite adept at gaming the system to produce cars optimised to the tests. (And don't forget VW's outright cheating of the test cycles – termed 'Dieselgate').
As a result of the perceived failings of NEDC, the WLTP test cycle was introduced for European use late in late 2017 to provide more 'real-world' estimates for European driving conditions and usage.



https://wltpfacts.eu/

Here in Australia, we effectively use NEDC figures – and hence the rather optimistic EV ranges found on the Australian Green Vehicle Guide website (https://www.greenvehicleguide.gov.au/). This is quite annoying, but a result of the Fuel Consumption labelling requirements under *Australian Design Rule 81/02 — Fuel Consumption Labelling for Light Vehicles) 2008* being written before the introduction of WLTP. Consequently, our standards are closely related to NEDC. This means NEDC is effectively the current Australian test cycle applying to showroom labels and the Green Vehicle Guide website. (Note: many auto manufacturers here in Australia are quoting WLTP figures in their advertising material for their EVs).

As mentioned above – NEDC is notoriously around 30% greater than what the 'average' driver achieves. So how can one find out what a realistic EV driving range is? This is where the Environmental Protection Agency in the USA comes in. On the other side of the Atlantic from Europe, the US EPA has long set its own and very different set of vehicle consumption testing standards. Widely regarded as more stringent and realistic – US EV drivers regularly report that they can easily achieve (and even sometimes exceed) the US EPA range figures. As US driving patterns are more akin to Australian ones – they are also more likely to be achievable here in Australia.

Therefore – when researching the range of a new EV to buy – I would suggest trying the following strategies for ensuring your chosen vehicle is likely to meet your driving needs:

1. Check which test cycle the range estimate was made under. (If NEDC, subtract 30% for starters!);
2. For the WLTP range estimate, check the manufacturer's advertising material – often they quote WLTP instead of NEDC, or go to a European website for the vehicle. (Remember when checking overseas websites to check the options, wheel sizes etc as these can differ to Australian delivered cars). By the way: whilst WLTP is closer to 'real-world' consumption, WLTP ratings are still up to around 10% too high for Australian conditions;
3. If the vehicle is offered for sale in the US (which covers almost all EVs except Renault who do not sell vehicles in the US) – check the US EPA rating for an even closer range estimate.

It is worth remembering that any of these test standards are still good for comparison ***between*** vehicles. What you must do is to check you are comparing 'apples with apples', i.e. when making comparisons, always ensure you are using the ***same*** test cycle (NEDC, WLTP or US EPA).

Ultimately though, fuel/energy consumption is a very individual thing. Getting a rating that reflects your individual usage is a bonus – but checking the rating system that your chosen EV is tested under certainly helps avoid disappointment.

Member profile: Grahame Manietta

Grahame Manietta, Queensland AEVA member and former Qld branch chair, talks about his EV journey, EV conversions and his EV conversion business, Oz-DIY Electric Vehicles.

What is your current EV drive?

I currently drive my first EV conversion, a 1990 Suzuki Swift, electric since 2008. Just recently decided to upgrade the battery pack as the Nissan leaf cells we used were getting a little tired; the old cells are off to a remote property to live again as a home battery. I am building myself a 2005 Holden Cruze AWD using a Hyper 9 120V system and A123 cells with Orion BMS. Our family car is a 2010 iMiEV about to get a battery upgrade to twice the original capacity (180k range maybe) AND building a drag car using a 1986 Suzuki Swift roller with a small Tesla motor in the front.

When did you get into EVs?

One of my customers had built a Suzuki Mighty Boy EV early 90s using whatever he could find, aircraft starter, golf cart controller and SLA batteries, this fascinated me because I was already very keen to get into all things solar and Eco. So around 2006 I found suppliers through my importing network and brought in components for three cars. ALL three are still registered and driving almost daily.

What brought to you them?
I had always felt the ideal way to live was solar power and electric driving, thereby providing all your own fuels. My wife is a chronic asthmatic and it's clear emissions have a lot to answer for there, so my motivation was to become a clear example of what can be done.

When was your first EV driving experience like?
The first time I had a ride in a home converted car was a light bulb moment for me! It went well, was quiet, efficient, charged off a home with solar power and solar hot water. I was converted from that moment on.

What was your first EV conversion?
I am STILL driving my first conversion, as our usual business is as a Suzuki specialist parts and workshop. We also did auto parts recycling and threw many a good Suzuki car away. So when we decided to convert a car, there were many here to choose from for free. Our "business" model was upcycling cars that would become scrap into much better cars. So we stripped down three Suzuki Swift cars and proceeded to convert them as well as refurbish the brakes, steering, suspension etc. - my own being one of those three.

Why did you decide to get into EV conversions as a business?
The Business side of conversions came about as interest grew in what we had done. EV West had just started being a driving force in the USA and whilst the potential market in Australia was tiny, we did not need a huge following to survive, meaning our Suzuki business was quite ok to support us. As a Business choice getting into EV conversions is far from profitable as the components are expensive and margins are very tight so as a business its ok. On the upside it's always growing.

What do you see as the future for conversions?
The future is in classic, semi classic car conversion and small commuter cars. We have been supplying, converting and assisting in conversions for many types of cars including Model T, RX8, kit cars, utes and light commercials, st90 Suzuki Ute, Suzuki Sierra, Daihatsu Feroza and many more. We are very focussed on older factory EV upgrades particularly upgraded battery packs for Nissan Leaf and iMiEV. The future for conversion businesses is to add book servicing and repairs for factory EVs as well. The people BEST suited to look after factory EVs, apart from the dealers, are experienced EV technicians like those in a conversion business. Also supplying the charging accessories for existing cars, optional extras etc.

Do you think you'll ever buy a mass-market EV?
I already have an iMiEV and hope to get a Nissan Leaf, both of these would be platforms for us to develop new and higher SOC batteries for. We see a huge demand developing bigger better batteries and performance upgrades as these cars age.

Two Wheels Good

By Chris Jones. AEVA national secretary
Brief review of the all electric Harley Livewire.

Building a decent electric motorcycle at an acceptable price point is really hard. USA's Mission Motorcycles built a great bike for the racetrack but never managed to get to production. However here's an interesting link: Mission may have folded in 2015, but they had an arrangement with Harley Davidson to help them develop an electric machine. By 2017 the Harley Livewire pre-production bike was being widely circulated for appraisal. The three-year appraisal process worked out well for Harley, as all who rode it loved it, alleviating fears they may alienate fans. Now in 2020, the Harley Livewire is on sale around the world and finally, here in Oz.

The Harley Davidson Livewire ~ $50,000 ride away.

First impressions throwing a leg over the bike – it's solid. The centre of gravity is low and the seat height is pretty good for a shorty like me. The handlebars are broad and point outwards, which is OK for a little while but they'd be less tiring if they pointed inwards more. If the display looks like a smartphone mounted on the handlebars, that's probably because it is. Or at least, it looks very similar. The functionality is all there and it seems quite intuitive, however the multitude of buttons at your thumb tips are a bit daunting. I found I had to let go of the bar to press some fairly important buttons (like turn signals). Something you'd get used to I suspect.

Acceleration is just like it should be – smooth and swift like a slingshot. Unlike most bikes, the 78 kW 158 Nm Mission-designed motor sits longitudinally underneath the battery and it uses a bevel gear to drive a secondary transmission (finally some Harley DNA!) with a belt drive to the rear wheel. The bevel gear would no doubt rob it of some power, but you sure don't notice it. It gives a very nice little whine as you rap on the throttle – who says e-motos don't make noise?

The first Australian Livewire was delivered to Chris Dodd, one of our WA members who kindly rode up to my house to show me. The onboard charger is a mere 1.4 kW, which means a long stop at a Type 2 charger, so the CCS-2 DC fast charge port is essential for longer rides. With 15.5 kWh of battery on board, the bike will manage over 200 km of city riding, but you can expect it to plummet to around 130 km at highway speeds; motorcycle aerodynamics are pretty ordinary.

Chris Dodd charges his new Electric Harley Davidson.

Having built a fast electric motorcycle before, I know Harley won't be making a lot of margin on this bike. But given the median price of a V-twin Harley is about $40,000 it's really not that crazy. And make no mistake; they will sell every single one they bring in. Someone had to do it, and I'm as shocked as you are it was HD. But they have done a great job with this machine.

Please note:
This program is updated weekly as speakers return their bio and talk details. To get the current listing, use the "DOWNLOAD FULL PROGRAM" button on the main event website.

2020 EV VISION e-Conference

The future is clear ...
EVs are here!

Australia's largest ever EV only conference

27th November 2020

Event Information and program (as of 18/10/20)

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Why electric?

Electric Vehicles (EVs) in all their forms are now too hard to ignore.

The sheer diversity of electric drive moving onto our roads, bicycle paths, mines, ferry terminals… and even airports, is breathtaking. EVs are not only fun to drive, they save money, reduce waste, reduce pollution and environmental damage, and are easier and cheaper to maintain than their Internal Combustion Engine (ICE) counterparts. They also outperform ICE vehicles in so many areas.

The world is already making the transition to EVs and reaping the benefits. Now is the time we made the transition too, after all - the future is clear: EVs are here!

Why attend?

There are now more electric drive options available to you than ever before.

To reap the full benefits of this global EV transition, you need up-to-date knowledge of WHAT technologies and options available, WHY the transition is important, and most importantly HOW to join in.

The AEVA 2020 EV Vision e-Conference is designed to give you that knowledge, with access to leading EV figures, businesses and transition support organisations from both Australia and around the world. It will enable the Public, Government and Business to make informed decisions when considering the purchase of an EV or associated product.

So don't miss out! Details on how to join in below:

Date	Friday 27th November, 2020
Time	9:15am - 4:45pm (Friday)
Location	Online: https://aeva.delegateconnect.co/
Registration	https://www.aeva.asn.au/events/register/96/pre/

Who are AEVA?

The AEVA EV Vision e-Conference is organised by The Australian Electric Vehicle Association Inc. AEVA was formed in 1973 and is one of the the oldest continuously active electric vehicle owners associations in the world. AEVA is a not-for-profit organisation dedicated to promoting and accelerating the migration of Australia's transport networks to electric drive. We all share a common interest in Electric Vehicles (EVs) and electric transportation.

Following on from a very successful conference and expo in Brisbane (2018) with over 7000 through the gate and Sydney (2019) where over 1000 individual test drives took place, the AEVA 2020 EV Vision e-Conference will be the biggest solely EV focussed conference ever to have been held in Australia.

We are an accomplished group, hosting successful and well-run events every year, in every state. With major vehicle manufacturers, distributors and associated EV businesses as sponsors this event aims to present and promote Electric Vehicles and raise the profile of all participants as a whole.

For More Information, or if you wish to enquire about sponsorship or advertising at the AEVA 2020 EV Vision Conference please contact:

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Program summary and 'room' layout:

Time	Room 1	Room 2	Room 3
9:15	Introduction		
	EARLY MORNING BREAK		
10:15	Industry - block A	Leaders and followers – block A	EV Charging – block A
	AM BREAK		
11:30	Industry - block B	Leaders and followers – block B	EV Charging – block B
	LUNCH BREAK		
1:30	EV Vision - block A	EV Hacker – block A	On 2 Wheels – block A
	PM BREAK		
2:45	EV Vision - block B	EV Hacker – block B	On 2 Wheels – block B
	LATE AFTERNOON BREAK		
4:00	Plenary		

General Sessions:

Opening Session

Session - 1. Introduction - 45.0 mins - Room 1

Sit down with your favourite cuppa and make yourself at home to begin today's adventure!

Wake up the brain with a thought-provoking keynote speech from world-renowned environmentalist Tim Flannery. Hear the latest EV policy announcements from the Victorian Government by the Minister for Energy, Environment and Climate Change, Lily D'Ambrosio.

This session will also explain the workings of today's event and what to do, should you get lost.

09.15 — **MC John Harris**

09:20 — **Welcome from AEVA**
Acknowledgement of Country and welcome to the 2020 EV Vision conference by AEVA president, Chris Nash.

09:25 — **Minister opening the on-line conference**
Victoria has one the most ambitious climate and energy policy frameworks in the world. The state's legislated 2050 net-zero emissions target is supported by renewable energy targets of 25% by 2020, 40% by 2025 and 50% by 2030.

The transport sector is responsible for about 20 percent of Victoria's emissions, with road transport accounting for the bulk of that figure. It is also one of the few sectors that has seen an increase in emissions as population and economic growth result in more vehicles on the road. The uptake of electric vehicles will therefore play a vital role in achieving Victoria's 2050 net-zero target.

The Minister will outline the actions that the Victorian Government is taking to prepare the ground for the electric vehicle revolution, and explain the role that the transport sector will play in Victoria's energy transition.

09:35 — **Keynote address**
Tim Flannery

09:50 — **Conference info and housekeeping**
MC: John Harris

10:00 – 10:15 Early morning break

Plenary Session

Session – 8. Plenary - 45.0 mins - Room 1

Wrap-up of the day and a look at the best way forward to smooth the EV transition in Australia.

16:00 — **Conference wrap-up round-table: where to from here?**

Beyhad Jafari, Chris Nash, Giles Parkinson, John Harris, Kathryn Trounson, Robert Llewellyn, Tim Flannery.

End of day, round-table discussion focusing on the topic of *'how do we progress Australia's EV future from here?'* based on what has been presented throughout the day and the collective experience of the final panel.

16:45 — **Conference Close**

Room 1 AM Theme 1: Industry

Industry - block A

Session - 2. Industry - 60.0 mins - Room 1

Hear how the grid is being set-up to handle the rEVolution. Presentations from energy providers and researchers.

10:15 **Opportunities, barriers, and bringing V2X together into products**

Laura Jones

EVs uniquely sit between energy and transport. Not only can your car get you to the shops, it can also power your home or the grid. My talk will paint picture of some of the new ways you might be using your car's battery in the future – focussing on international experience.

10:29 **The role of EVs in AGL's Virtual Power Plant**

Jane Butler, Manager New Business, Decentralised Energy Resources - AGL

AGL is striving to make EVs easy for Australians by removing the barriers to EV uptake, reducing costs, and enhancing the ownership experience. Without intelligent charging, the uptake of EVs may lead to higher energy costs for all consumers; learn how AGL is seeking to define the path forward for EV 'orchestration' in Australia by adding EVs to our Virtual Power Plant and harnessing the benefits of EVs for all consumers.

10:43 **EV SmartCharge Program**

Ian McGregor, Development Manager – Electric Vehicles – Energy Queensland

Energy Queensland launched the EV Smart Charge program in May 2020. Hear some early insights on driving and charging behaviours of participants involved in the program.

10:56 **Session Q&A**

11.15 – 11:30 Morning tea break

Industry - block B

Session - 2. Industry - 60.0 mins - Room 1

How does an EV transition affect Australia's CO2-e emissions? How can the EV transition be best structured to promote better living and the lowest emissions possible? And which EV transition are we likely to have? Tune-in to this session and find out …

11:30 **EVs and Australia's zero carbon future**

Michael Lord, Lead Researcher – Beyond Zero Emissions (BZE)

Beyond Zero Emissions' plans show how Australia can eliminate greenhouse gas emissions in all sectors. In this talk, Michael Lord will describe how electric vehicles fit with Australia's broader zero carbon future. He will also discuss:

- how renewable energy can power electric vehicles including, cars, trains, trucks and mining vehicles.
- the role of EVs in supporting the decarbonisation of the electricity sector
- the impact on transport costs and national energy security
- supporting government policies.

Room 1 AM Theme 1: Industry (Continued)

11:44	**Advice on Automated & Zero Emission Vehicles Infrastructure.** Jonathan Spear, Deputy Chief Executive and COO - Infrastructure Victoria Jonathan's presentation will highlight Infrastructure Victoria's world-leading advice and recommendations to the Victorian Government on the infrastructure required to enable highly automated and zero emissions vehicles in Victoria, completed in October 2018.
11:57	**GHG emissions from Australian road transport** Dr Robin Smit, A/A Prof - ANU The talk will discuss the current GHG emissions performance of the Australian on-road fleet, and the main factors that contribute to an unexpected increase rather than a decrease in these national emissions. It will then discuss the case for rapid electrification of the Australian fleet, the delays due to fleet turnover and the expected impacts on emissions in different scenarios (fossil-fuelled vs. more renewables in the electricity sector etc.).
12:10	**Session Q&A**

12:30 – 13:30 Lunch break

Room 1 PM Theme 2: 2020 EV Vision

2020 EV Vision - block A

Session - 6. EV Charging - 60.0 mins - Room 3

EVs are not just cars! From road freight transport, to the air and on the water - ALL forms of transport are moving to electric. In this session hear about what's happening in some surprising areas.

Notes:

For more info on 2 and 3 wheeled light EVs - watch the separate 'On 2-Wheels' stream.

By the way: if you can't be in two places at once, you can always stream the videos after the event. Remember, your ticket gives you continuing 12 months access to the talk videos and uploaded resources

13:30 — **SEA EV trucks and machinery (placeholder)**

Glen Walker

Synopsis to come

13:40 — **Electric aircraft (placeholder)**

Josh Portlock, Electro-Aero

Synopsis to come.

13:50 — **Presenting the fully electric E-ferry Ellen**

Halfdan Abrahamsen, Media and Information Manager, Ærø EnergyLab

The E-ferry Ellen is a fully electric regional ferry that sails a 40 km round trip between charges, up to seven times a day. This means that Ellen sails seven times longer than any other electric ferry currently in operation. Ellen signifies a revolution in maritime e-mobility, because it can replace traditional diesel ferries on thousands of local and regional routes around the globe.

Ellen sails in southern Denmark, where it has been in regular operation for more than a year. During the presentation, Halfdan Abrahamsen will explain how a small island community of 6000 people managed to design and build the ferry, and he will present the numbers and data from the recent evaluation report published after the first year of operation.

The evaluation has shown that Ellen can reduce greenhouse gas emissions significantly, but what about the economy? As we will see, the economic figures might come as a surprise to many, it turns out that sailing fully electric is a great choice for more than environmental reasons.

14:00 — **To Be Announced**

14:10 — **Session Q&A**

Afternoon tea break 14:30 – 14.45

2020 EV Vision - block B

Session - - 60.0 mins - Room 1

THE place to hear about the latest offerings from the EV passenger and light commercial vehicle manufacturers - and ask them questions!

15:00 — **Manufacturer Presentations (placeholder)**

To Be announced

15:40 — **Session Q&A**

15:45 – 16:00 Late afternoon break

Room 2 AM Theme 3: Leaders and Followers

Leaders and Followers - block A

Session - 4. Leaders and Followers - 60.0 mins - Room 2
Round-table discussion.

10:15 **International EVA discussion panel**
Alister Hamilton (EVA Scotland), Christina Bu (EVA Norway), John Stonier (Vancouver EVA), Kathryn Trounson (Better NZ Trust). Hosted by Clive Attwater (AEVA Vice President)
A round-table discussion looking at the question of how EV Associations can best support and promote the EV transition according to their local conditions.
Hear from EVA representatives from around the world on what they do and how they work.
Discussion lead by AEVA national Vice-Chair, Clive Attwater.

11:00 **Session Q&A**

11.15 – 11:30 Morning tea break

Leaders and Followers - block B

Session - 4. Leaders and Followers - 60.0 mins - Room 2
A selection of speakers on Australian grass-roots programs and initiatives to support the EV transition.

11:30 **IdleOff campaign (placeholder)**
Emma Sutcliffe
Synopsis to come

11:44 **Reimaging the Shopping Experience for EVs**
Dr Alina Dini, Founder & CEO - Whirl
For most shoppers, it is a big mental undertaking to research and evaluate options before buying any car. As electric cars are relatively new innovations, shopping for them can be more complex than a traditional vehicle. Finding quality information can be tough and finding someone you trust to talk to without pressure to buy is even tougher.

Introducing Whirl. Whirl makes early-stage EV shopping easy and accessible by matching willing EV owners with curious EV shoppers for a real-world, informative trial without any pressure to buy.

11:57 **Encouraging regional charger adoption (placeholder)**
Rob Law
Synopsis to come

12:10 **Session Q&A**

12:30 – 13:30 Lunch break

Room 2 PM Theme 4: EV hacker

EV Hacker - block A

Session - 5. EV Hacker - 60.0 mins - Room 2

Want to go EV, but not got the money to buy a new one? This session covers your second-hand EV buying and maintenance options. Be it buying a 'grey import' EV from overseas, assessing the EV battery in your potential second-hand purchase, or upgrading the battery in your old Leaf - this is the session for you!

13:30 **Importing second-hand EVs (placeholder)**

Anton Vikstrom

The GoodCar Japanese EV bulk-buy model.

13:44 **Upgrading the Nissan Leaf HV Battery**

Walter Larason, founder – EVs Enhanced (New Zealand)

In this short video, you will be introduced to EVs Enhanced and taken through the evolution of the Nissan Leaf High Voltage Battery Pack from 2010 up to the present day. We will show you some of the differences and improvements made with each generation and discuss some of our own product developments which allow us to harness these improvements for use in older model Nissan Leafs.

13:52 **More than the dashboard: Apps to access your battery data**

Bryce Gaton, AEVA; EV Writer/Commentator – TheDriven

When buying a second-hand EV, it can be difficult to accurately assess the health of the battery. The data is there - but hard to access. Some enterprising App developers however have come up with solutions!

In this presentation, Bryce Gaton will take you through some of the common apps available and explain how they work using the example of a 2011 Leaf.

14:06 **Session Q&A**

14:30 – 14.45 Afternoon tea break

EV Hacker - block B

Session - 5. EV Hacker - 60.0 mins - Room 2

Converting a fossil car or old bicycle to EV is fun to do and can be a rewarding experience if done well.
Hear from a variety of EV conversion businesses about the conversion process.

14:45 **EV conversions (placeholder)**

Russ Shepherd, EVolution

Synopsis TBA

14:59 **EV conversions or iMiEV battery retrofit (placeholder)**

Graeme Manietta, TBA

Synopsis TBA

15:13 **The lightest footprint: Electric Bikes**

Rebecca Lee

Electric Bicycles solve many of the problems caused by the current transport model... from traffic congestion to obesity, pollution & GHG emissions, parking, and rising fuel costs.

Since most people have a bicycle already, there is an EV-in-waiting already hanging in most Aussie garages. You'll definitely feel the wind in your hair, and the budget starts well below $2000!

A passionate advocate for quality E-Bike Conversions, RevBecca will outline the installation requirements for retrofitting motors to existing bikes, demonstrate the different motor & battery options available, and explain how to choose the ideal system to suit your needs.

15:27 **Session Q&A**

15:45 – 16:00 Late afternoon break

Room 3 AM Theme 5: EV Charging

EV Charging - block A: AC

Session - 6. EV Charging - 60.0 mins - Room 3

EV Charging is simple, but very different to refuelling at a pump where you stand in all weathers until your car has had its fill. In this section of the EV Charging theme, you will hear all about your AC charging options.

10.15 **How fast do I really need to charge?**

Bryce Gaton, AEVA; EV Writer/Commentator – TheDriven

EV charging frees you from the tyranny of fuel company price cycles, station location and standing waiting for the tank to fill. On the other hand it opens up a new paradigm involving choosing your charging method, speed and price.

In this talk, Bryce Gaton presents a layman's guide to how quickly EVs can be charged via the various charging options, and how to choose the best option for your driving pattern.

10:24 **Fixed (Mode 3) EV chargers: a beginner's guide. (Placeholder)**

Sam Korkees, EVSE.com.au

Synopsis to come.

10:33 **Charging on-the-run. Portable chargers and leads. (Placeholder)**

Russ Shepherd, position TBC, EVolution

Synopsis to come.

10:42 **V2X Opportunities and Issues**

Tim Washington

Everyone talks about EVs as "batteries on wheels", but what does it mean for consumers, businesses and our grid? Is it all positive, or are there negatives to V2X as well?
Tim Washington will explore the paths that lie ahead, and the opportunities and challenges Australia faces in the adoption of this all important technology.

10:51 **Session Q&A**

11:15 – 11:30 Morning tea break

EV Charging - block B: DC

Session - 6. EV Charging - 60.0 mins - Room 3

DC charging is the key to long-distance EV travel times equalling those of the Internal Combustion Engine vehicle. In this section of the EV Charging theme, you will hear all about your DC charging options - and some possible future trends…

11:30 **Chargefox - Growing Australia's largest EV charging network**

Marty Andrews, ChargeFox

After several years of operation, construction of a nationwide ultra-rapid network and expansion into charging services around fleet and apartment charging, Chargefox has learned a lot about how Australian's use EV chargers. With thousands of drivers, 140,000+ charging sessions and millions of kilometres travelled they're learning all the time about how to adapt for local usage.

Marty will explore some of the insights from that growth in usage on the network over several years, sharing interesting stats and stories from the lessons that have been learned.

11:39 **DC Charging Networks in Australia – the Next Phase**

Andrew Simpson, EViE Networks

This talk will share Evie's experiences to date in highway site acquisition, power design, field deployment and customer operations, and also help to illustrate the underlying costs of owning and operating a national ultra-fast charging network.
Evie will also share its views on the future roadmap for DC charging technology and the opportunities to deploy networks in other market segments, such as for metropolitan fast charging.

Room 3 AM Theme 5: EV Charging (Continued)

11:48	**A Case for Full DC Charging** Nicholas Yeoh, Rectifier Technologies AC charging is still used today simply because EVs are still supplied with on-board chargers. With the average single day commute around 64km (40 miles), it is uncommon for EVs to run the battery flat. As a result, bulky on-board chargers are becoming redundant as they no longer serve as the fail-safe device they once did. Rectifier Technologies specialises in developing and manufacturing high efficiency power conversion products, and is leveraging its expertise to offer chargers as the industry transitions to using low power DC.
11:57	**TBC (placeholder)** Carola Jonas, CEO/Founder – Everty Content to come …
12:06	**Session Q&A**

12:30 – 13:30 Lunch break

Ticket categories and pricing:

Special offer for non-AEVA members:

If you join the Australian Electric Vehicle Association BEFORE registering for this event, your first 12 months individual AEVA membership is EFFECTIVELY FREE!

1. ***General admission ticket for non AEVA members:*** **$90**
   Allows access to all presentations and events during the day - including the ability to ask questions in the Q&A sections. PLUS continuing access to all presentation videos, downloadable resources and contacts for the following 12 months.

2. ***Concession ticket (non-AEVA member)*: $50***
   Features as per general admission ticket.
   *Concession card holders only.

3. ***General admission ticket for AEVA members: $40***
   Features as per general admission ticket.
   Note: AEVA members will need their Member ID to register, which can be found in the "For Members" menu of the AEVA website, choose "My Profile".

4. ***Concession ticket for AEVA members*: $25***
   Features as per general admission ticket.
   *Concession card holders only.

5. ***Associate Electric Vehicle Association member: $45***
   General admission ticket for members of TOCA and international EVAs.
   Features as per general admission ticket.

6. ***Post-event access to site, presentation videos and resources: $25***
   For those who did not buy an event ticket, but want to access the presentation videos, website resources and contacts following the event. (Pricing enables access until November 27, 2021). Videos will be available approximately two weeks after the event.

Room 3 PM Theme 6: On 2 Wheels

On 2 Wheels - block A

Session - 7. On 2 Wheels - 60.0 mins - Room 3

A whole stream devoted to 2-wheeled electric transport options! This session covers electric motorbikes and larger EV scooters, along with the legislative hurdles in the way of Australia-wide adoption of light scooter EVs.

13:30 **Electric motorcycles: advantages and options (placeholder)**

Chris Jones

Synopsis TBA

13:44 **Fonzarelli scooters (placeholder)**

Michelle Nazzari,

Synopsis TBA

13:52 **Is Oz missing the last mile e-solution?**

Pete Gorton, AEVA (NSW and ACT)

Two and three wheeled electric scooters are well-established overseas to provide convenient, portable transport for the "last mile" of commuting, as well as for fun and recreation. As with most things EV, Australia is dragging the chain, and only several States/Territories have enacted legislation to permit legal use of these small vehicles on roadways, paths and cycleways. Pete will outline the current situation across the country, and propose an AEVA-led effort to rectify the situation nationally.

14:06 **Session Q&A**

14:30 – 14.45 Afternoon tea break

On 2 Wheels - block B

Session - 7. On 2 Wheels - 60.0 mins - Room 3

This session covers electric bicycles, light scooters and light delivery EVs.

14:45 **What's an electric bicycle? (placeholder)**

Sue Tom, AEVA (Tasmania)

Synopsis TBA

14:59 **Zoomo e-bikes and CEFC equity investment plans**

Mina Nada, Zoomo

Zoomo operate across the USA, UK and Australia providing Light Electric Vehicles as a service to the Australian and global market. Mina's talk will cover:

1. Zoomo's journey to date (2017- present);
2. Our market, use case and product/service;
3. Series A fundraise and CEFC equity investment (why we approached CEFC and how we are using the money); and
4. Our plans – in Australia and abroad

15:13 **Light Electric Vehicles (LEVs) as enablers of business model innovation in urban transport of people and goods**

Wolfgang Roffmann

Light Electric Vehicles (LEVs) can provide efficient solutions for the transport of goods and people in urban environments for existing businesses, but at the same time also can provide the basis for new and innovative business models in areas of hyperlocal delivery and shared mobility. This presentation will explore some of these uses and provide an overview of commercial use of Light Electric Vehicles.

15:27 **Session Q&A**

15:45 – 16:00 Late afternoon break

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The pleasure of sharing your EV knowledge, experiences and thoughts to help the wider EV community gain their very own 'EV Grin'.

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EV Charging hits the streets.

By Bryce Gaton, first published in Renew magazine, December 2019

In the third of his series on EV charging options, Bryce looks into what is happening overseas and Australia regarding on-street car charging.

Given the average Australian daily commute is around 30km, the charging speeds and times offered by AC charging are now well capable of providing overnight (or even over lunch) recharging well in excess of most average vehicle travel patterns (see table 1). As a result, the common finding of studies about how actual EV owners charge their cars is that 90% or more of charging is done using an AC charger (EVSE) at the home, workplace or destination (be that destination a country BnB or a shopping centre). It is also true that EV charging in homes is pretty much sorted (see *EVNews* issue XX) and charging for unit or strata title dwellers has a growing set of available options (see *EVNews* issue XX). Along with workplace and destination charging (which come with similar sets of solutions to the previous two cases) one *could* say that 90% of charging is now able to be dealt with and all that is left is to speed the roll-out of DC charging to facilitate that remaining 10%.

	EVSE	Input (AC) Amps	Output (DC) kW	km charged/hr	hours to full (0-100%)
AC		10	2.4	15	28
		15	3.6	25	18
		20	4.8	30	14
		32	7.2	50	9
DC		75A (Per phase)	50	350	1.25h (to 80%)
		150A (Per phase)	100	500*	54 min* (to 80%)

* Maximum Kona DC charging rate is 70kW

Table 1: typical charging rates at different EVSEs for a Kona electric. (Similar rates for most other EVs)

Or maybe not ….. in Europe, something like 50% of city dwellers do not have off-street parking for their cars. Due to Australia's typical urban sprawl, this group is a lot less in both percentage and actual numbers - but they are not insignificant. If no solution is offered to this group, it could create a significant barrier to EV adoption in the very areas that are crying out for ways to reduce airborne pollution.

Overseas, a number of innovative solutions to inner city on-street AC charging are being trialled, including pop-up EVSE pillars. Developed by UK business Urban Electric Networks, the system shown in fig. 1 recently won a UK industry innovation award. Controlled by a phone app, these EVSEs disappear under the surface of the street when not in use. Currently they offer charging at up to 5.8kW, which allows for most EVs to be fully charged overnight.

Figure 1. Urban Electric pop-up pillar. Image: Urban Electric

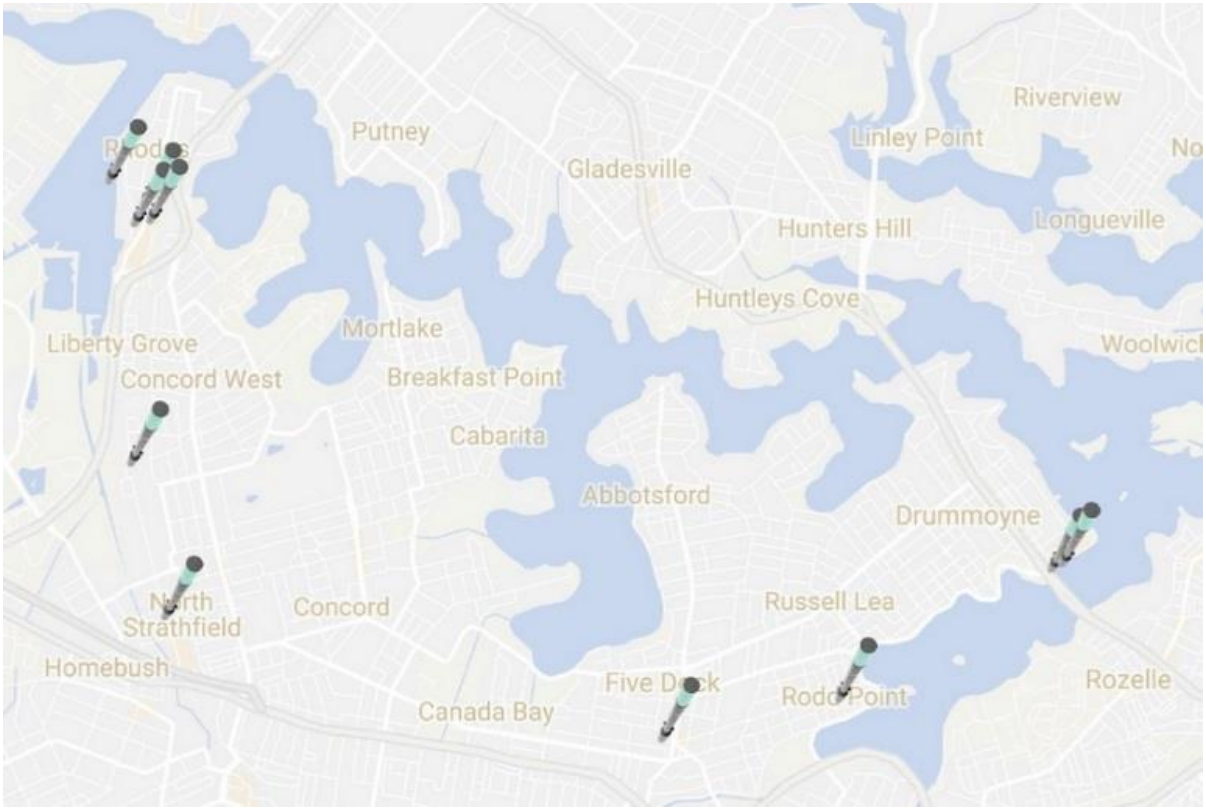
It is also worth noting that the Urban Electric model suggests a minimum of 20 charging stations to be installed per street to guarantee access for residents, with the intention to remove the need for dedicated parking bays. Around a dozen of these pop-up EVSEs are currently in trials by the city of Oxford in the UK.

An alternative solution (that does not necessarily involve the cost of digging up the street and providing new electricity supplies) is the light-pole mounted EVSE socket option provided by businesses such as Ubitricity (in the UK) and ENE-HUB (here in Australia).

At the heart of these systems is the change-over of street lighting to LED technology. By changing to LED, a significant amount of the former electricity supply to the pole is freed up for other uses – meaning the added draw of an EV on a low power setting is unlikely to require new cabling. The advantage of this system (according to Ubitricity) is they are about 10% of the cost of a stand-alone EVSE and power supply. Currently the Ubitricity light pole mounted EVSEs are being trialled by Leicester City Council in the UK.

Ubitricity light-pole EVSE in use. Image: Ubitricity

Here in Australia – well, as ever things are moving more slowly than elsewhere – however some early trials are beginning. In Sydney, ChargeFox and ENE-HUB have teamed up to trial EVSEs mounted on ENE-HUB 'smart light-poles'. (http://ene-hub.com/smartnode/) Twenty of these pole systems are now being commissioned in Blacktown and Canada Bay.



Sydney Canada Bay EVC network. Image: ENE-HUB

Smartpole with ChargeFox AC EVSE. Image: ChargeFox

Street charging in parallel or angle parking areas does come with issues though. Stand-alone bollards are often frowned upon by councils as they are considered to increase street 'clutter', plus create maintenance and safety hazards due to their being easily hit by passing traffic. They can also be hard to install in inner city areas where underground services already compete for room. Street EVSEs in combination with the rather random placing of charging sockets on EVs can also cause another set of issues: such as footpath lead safety and legally parking to access the EVSE. For instance, in parallel parking it is illegal to park facing the wrong way or across two parking spots, nor is it legal to reverse into angle parking.

As a consequence, some councils here favour a public parking area EV charging model – such as the Adelaide Electric Vehicle Charging Hub. In this model, a section of enclosed carpark is converted to

provide parking that can be driven or reversed into, and where tripping and collision issues are minimised.

Adelaide EV Charging Hub.
Photo: Bob Gell and Sally Knight, AEVA.

So why is Australia so far behind in developing street charging options and policies? Well, first up the issue is confined to a collection of scattered inner city councils in each state – meaning coordinated action and a shared set of standards is difficult to achieve in the absence of a federal EV policy and related action through COAG. (Such a push would need to cover such things as coordinating and sharing EVSE information, trial data and installation seed funding). A second issue is that electricity supply laws here generally prevent metered supply cables crossing a property boundary, thereby preventing homeowners from legally installing their own EVSEs (or even running extension leads) onto the street.

However a lack of street charging should not deter the intending inner-city EV owner: there are still a number of ways to keep an EV charged even if there is no access to off-street AC charging. After all, given that charging can occur when away from the car (and be monitored through phone apps) – 'refuelling' speed is not the same issue as it is when standing by a petrol bowser in the dead of winter or the height of summer.

So part one to the solution for EV owners without off-street (or on-street) AC EVSE access are:

(a) Use a DC fast-charger (plus for Teslas, the Tesla-only Supercharger network) for charging the EV once every week or two. With the newer, longer range EVs with 40 – 100kWh batteries and the average daily commute being in the order of 30km, charging to 80% at a DC charger generally takes less than 30 minutes. Time for a quick coffee or the weekly shopping. (And as a bonus, the major DC fast-charge networks are 100% renewable supplied). As a cautionary note: the current Renault EVs (the Zoe hatch and Kangoo ZE van) cannot use DC charging.
(b) Use the growing network of (generally free) AC chargers at shopping centres and the like to top-up between DC charging: for instance a 7kW EVSE gives around 50km charged/hr.
(c) Use workplace charging (even at 3.6kW on a 15A outlet, 8 hrs would give you up to 200km charged. At 7kW, a Kona electric would almost fully charge).

Part two of the solution for inner-city dwellers is to push for coordinated action on public AC EV charging. However, whilst it is well worth lobbying for a basic minimum of public AC charging (both individually, and through organisations such as AEVA and Renew) the required level of provision is still an open question. A recent European study and report into EV charging behaviour found that public AC charging was only used for about 5% of all charging events. A second finding in the report was that as the market matures, there would be a likely increase in preference for faster DC charging over public AC charging. Their conclusion was that "…*whilst the visibility of public AC charging would be important in encouraging the confidence of conventional car owners to switch to electric options, ultimately public AC chargers may rarely be used".* (https://www.transportenvironment.org)

Australian EVs rise to new heights

By Bryce Gaton. EVNews editor and vice-chair, Victorian branch.

Image: Jemena

Pardon the pun headline, but EVs in their march to take over ICE (internal combustion engine) territory have just taken another big step. Jemena (an Australian energy infrastructure company) have recently taken delivery of their first 100% electric powered EWP (elevated work platform) truck. Converted over a 12 month period by Victorian based EV truck conversion business SEA electrics, the new EWP truck is expected to reduce Jemena's carbon output by 30 tonnes per year. The electric EWP truck has been deployed to service the Jemena Electricity Network in Melbourne's North-West.

Joe Di Santo, SEA Electric Sales Director for Australia and New Zealand, said his team is excited to see the industry-first vehicle join Jemena's Victorian fleet.
"It's been a special and historical project for the management and engineering staff at SEA Electric to partner with Jemena in the development of this Australian-first 100 per cent electric Elevated Work Platform service truck," said Mr Di Santo.

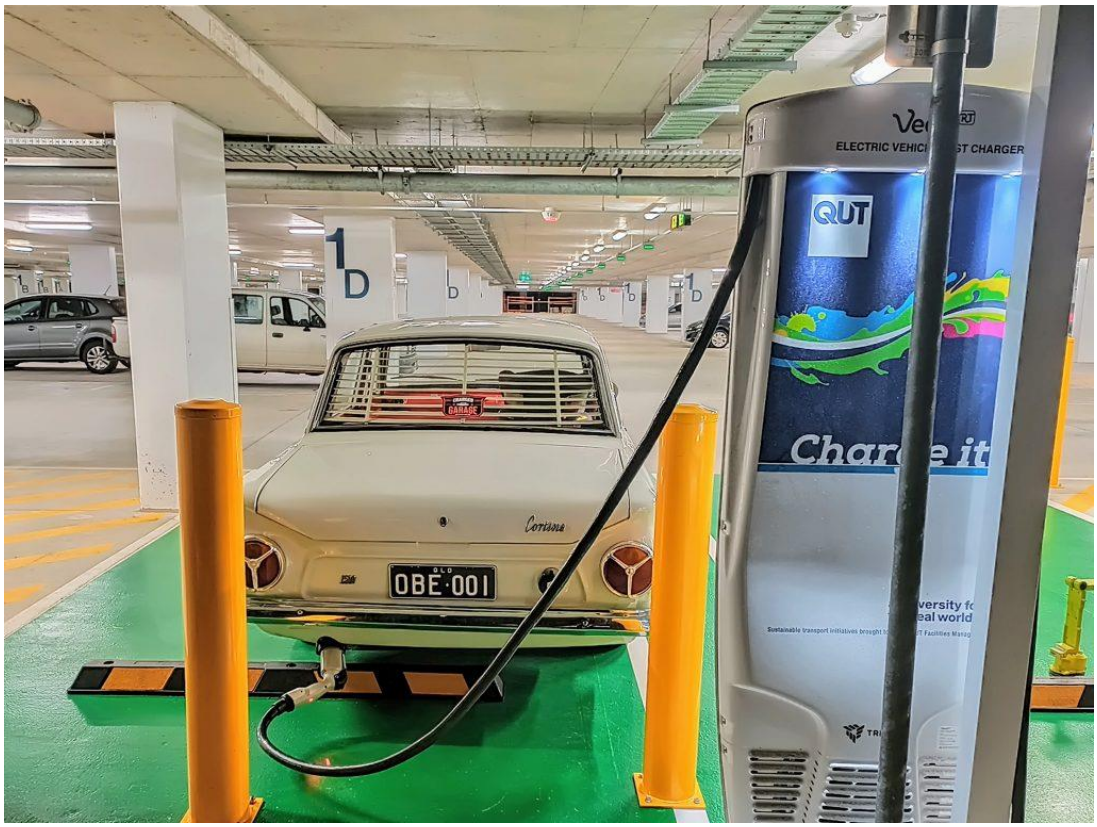
Originally a diesel truck, Nifty-Lift built a custom electric elevated work platform and SEA Electric converted the Hino truck into a 100 per cent electric vehicle. The vehicle battery is a 138kWh battery pack, providing around 200km of range. The elevated work platform is powered by the truck's battery which will be charged at the end of each day, with a full charge taking about 6 hrs.

According to Jemena's Executive General Manager for Electricity Distribution, Shaun Reardon, the vehicle is not only the first step in greening the Jemena truck fleet, *"… it will also benefit our customers with a quieter operation and zero exhaust emissions".*

Conversion corner: DC Fast Charging in a converted classic electric car

By Tim Harrison, AEVA Queensland member

The following article is based on a series of blog posts by Tim Harrison on *chargedgarage.com*



My Cortina conversion dc charging at a Tritium DC fast-charger

If your EV trip is longer than one charge of the battery can handle - you want to recharge it as fast as you can, right? And you want the ability to travel long and far, often further from home than your EVs maximum range. To do this you will need to rely on the ever-growing network of public chargers.

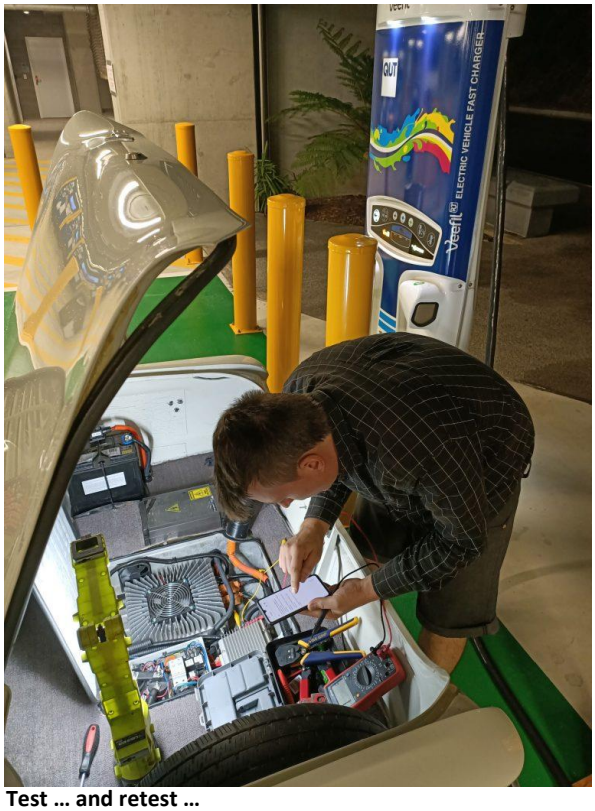
Even though you may not need it every day, on the occasion when you DO need to rely on a public charger to make it to your next destination, you don't want it to be a painfully slow charge (unless you're staying overnight).

Why not just put enough batteries in so that you never run out of juice? Well, it's a balancing act between cost, space, weight and performance. You definitely do not want to overload your classic car with so many heavy (and costly) batteries to account for that once-per-year road trip that is double/triple the range you otherwise need the rest of the year. That would be a crazy expensive conversion.

What you need is *DC (direct current) charging capability*. It effectively increases the flexibility of your classic electric car, without adding the cost or weight of more batteries. Of course it relies on there being sufficient public DC chargers, but there are a number of organisations rapidly building-out networks across Australia with coverage improving daily.

But strangely, almost all converted electric cars in the world *only* have slow AC charging. Even the latest and greatest conversions from top-end conversion workshops in the USA and Europe are choosing to overlook DC fast charging capability as standard. When researching this topic a couple of years ago I couldn't find any converted classic cars with DC charging. Nowadays there are still only a couple around the world.

I always had the intention of incorporating DC charging into any electric conversion I designed. That way, I could be confident with the range from a relatively small battery that matched the weight carrying capacity of the car (which removes the requirement to improve the suspension or brakes to satisfy regulations), yet still have the option to travel longer distances by utilising public DC chargers.



Test … and retest …

Fortunately I had a CHAdeMO fast-charging port from a wrecked Mitsubishi iMiEV (the hardware), and there was one BMS (Battery Management System) on the market that supported this protocol of DC Charging - the Orion BMS2 (the software). So despite there being hardly any documented converted cars to follow, we set about with the intention that this should work "out of the box", but it wasn't quite that simple.

Unfortunately it wasn't exactly a plug-n-play exercise to get DC fast charging to work on a non-OEM electric car. Here's some of the issues we had to work through:

- Software parameters: hundreds of them, in the BMS utility. Extremely complicated and sometimes convoluted (probably with good reason, as this tool is protecting the valuable batteries and keeping everything safe and under control).
- Firmware: We had to work with Orion with not one, but two firmware updates for the BMS utility as a result of finding errors or blockers to successfully (and repeatedly) charging on public chargers without error codes.
- Connections: Wiring the batteries, contactors, fuses, switches etcetera and checking them all at least three times over.
- Protocols: Public chargers follow certain protocols upon plugging in and if anything goes wrong it won't start charging and instead spits out error codes. Fortunately all of the 50kW DC fast chargers in Queensland are the Tritium brand (made right here in Brisbane!), so we only had to focus on how their *software handshake* worked when communicating with the car to initiate a charging session. Fortunately again I have a working relationship with some of the Tritium engineers who were helpful in determining the source of some of the error codes we were receiving early on.
- Voltage: We are running the Cortina at around 115V, compared to 300-400V for most OEM EVs. Many DC Chargers only operate at minimum 200V, but not the Tritium Veefil 50kW charger, which operates as low as 50V according to the specs. Phew!
- Countless trips to the nearest DC charger, and countless CANBUS logs and analyses to identify errors over the course of 4-5 months...

I can now proudly say that this electric 1965 Ford Cortina can successfully charge at the DC chargers in my region. I am quite sure that this is the first classic electric car in Australia (or anywhere outside of perhaps Europe or USA) that can DC charge. I look forward to driving on longer trips and taking advantage of the ever-growing DC charging networks such as the Queensland Electric Super Highway soon!

Some stats to answer some common questions I get about public fast charging:

How fast does it charge? Only around 14-15kW, as this is the result of the operating voltage (~120V) times the max current rating of a 50kW CHAdeMO charger which is 125A. Therefore 120 x 125 = 15kW.

How long does it take to charge? About an hour or so to get from say 20% to 80% which is the optimum recharge range for most EVs.

Where can you get a rapid DC charge? Check out plugshare.com and filter for CCS/CHAdeMO fast chargers. The network is growing rapidly all around Australia.

How much do public fast chargers cost? Depends on the operating network. Check out Evie Networks, NRMA, Yurika, and Chargefox networks for their respective pricing. In some cases it is free, others you are paying for the convenience of fast charging so expect to pay close to the equivalent of petrol. Considering this only constitutes a tiny proportion of most EV drivers' charging habits, paying for the ability to travel on long zero-emission journeys is hardly a concern. In fact, I'm happy to pay a premium price, and support the host site facility by purchasing lots of coffee and snacks if it means those networks can keep building more public fast charging stations!

Can you use Tesla chargers? Yes and No. Most Tesla destination AC chargers are free to use for most EVs, though some are software limited to only work with Tesla cars. The Tesla Superchargers (their DC fast charging network) is definitely only for Tesla cars. Check out this pic of the Cortina charging on a Tesla AC destination charger at the Sandstone Point Hotel. Thanks Elon!

Many Tesla 'destination' (AC) chargers will work with other EVs. (Thanks Elon!)

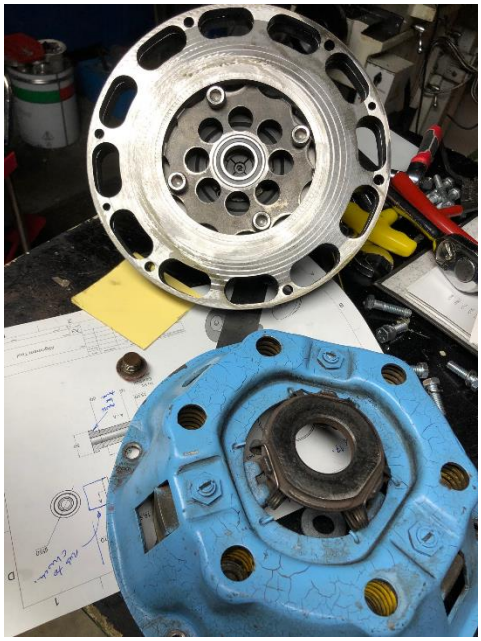
Coming soon – CCS2 charging for converted classic electric cars. There are a few solutions in development around the world, hopefully they succeed in cracking the CCS protocols and making it to market soon!

Project Update: 1949 Singer utility conversion continues

By Steve Carter: Chair, Ballarat and region Sub-branch of AEVA Victoria

We have come across a few hurdles during this alignment process and Duncan (my trusty friend helping me with the conversion – and who has done much of the heavy lifting work recently, takes up the story from here:-

The assumption made by the makers of all electric vehicle transmission adapter plates (whether amateur or professional) is that the gearbox input shaft is at right angles to the bellhousing surface. The electric motor is usually flange mounted on a plate that is spaced a few cms away from the bellhousing plate by means of a welded or machined spacer. The only alignment that is then required is left / right and up / down to centre the motor shaft on the gearbox or transmission shaft centre. This centre is usually found by assuming the arc of the bellhousing casting or bolt holes are concentric with the input shaft.



For this 1949 Singer, none of these assumptions turned out to be valid. Perhaps the CNC machine was not working the day the Singer gearbox casting was bored. The bellhousing bolt holes bore no relation to the location of the gearbox input shaft, and neither were the arcs of the bellhousing casting concentric with the shaft. The centre could not be found by using any of the geometry of the gearbox. To solve this problem, the motor plate was mounted on four turned aluminium stand-off posts, which spaced it off the bellhousing plate, and the holes were made oversize to allow for the lateral and vertical alignment, which turned out to be about 2mm away from the expected centre.

The invalid assumption that the gearbox shaft was perpendicular to the bellhousing mating surface was discovered by making an alignment tool by boring a flanged solid aluminium sleeve to snugly fit over the gearbox input shaft, then clamping it in the motor mounting plate, in place of the motor. With the gearbox in gear, the output shaft could be turned by hand, that is, until the motor mounting plate bolts were tightened, which then brought the two plates into parallel. This then locked the gearbox shaft, so it could no longer be turned. The solution was to replace three of the mounting posts with threaded rod, adjusting them until the tail-shaft yoke could be turned, then replacing the threaded rods with shortened mounting posts. The four mounting posts were then all different lengths, the difference between the longest and shortest being 1mm, which is about third of a degree. Since this conversion is retaining the clutch, and running no flexible coupling, an angular misalignment of the electric motor and gearbox input shafts would have led to overloading of the gearbox input shaft bearing, and accelerated wear on the clutch splines and dog teeth of the gearbox drive gear. Even with a flexible coupling, for longest life of the coupling and bearings, aligned shafts are needed.

Australian Electric Vehicle Association Inc.

ABN 27 629 533 129

PO Box 5285

AEVA National Council Meeting Minutes

Date: 3rd October 2020

Location: Online (Zoom)

Meeting commenced: 9:00 am AEST

Attendees – Chris Nash, Bryce Gaton, Clive Attwater, Penny Cocker, Charles Gregory, Edward Brow, Warwick Cathro, Michael Day, Chris Jones, Eric Rodda, Sally Knight, Dan Deleur, Richard Baird, Simone Pfhul, Mark Roberts,

AEVA governing structure update –

Chris Nash discussed the AEVA governance restructure advice received and how it was progressing. Company Limited by Guarantee is the most common structure recommended for not-for-profits like ours. The CLG allows us to legally operate nationally while maintaining a safe level of legal liability for the directors. The structure also offers easier management of memberships, including corporate memberships.

Elections and appointments –

Penny Cocker was appointed returning officer for the election of a national executive and other appointments. All positions were declared vacant. Nominations for President, Vice President, Secretary and Treasurer were received from Chris Nash, Clive Attwater, Chris Jones and Michael Day respectively. No other nominations were presented at the meeting or prior. The returning officer declared all executive positions filled. All other appointments including membership secretary, webmaster and assistant roles were all re-appointed in the absence of other nominations.

Treasury disbursements –

Michael Day confirmed that all branches with an account at less than $3000 would be topped up to $3000 for the upcoming year's operations. No additional funds have been sought from branches other than the Victorian branch in preparation for the e-Conference in late November.

2021 AGM and conference

The SA branch will be hosting the next AGM and conference in Adelaide at the Adelaide Showgrounds, currently scheduled for the last weekend in October 2021. This will be timed to coincide with the Darwin to Adelaide World Solar Car Challenge. A manufacturing stream will form a major part of the conference and a site tour of an EV part fabrication facility will be planned.

General Business –

Next full National Council Meeting will be planned for March 2021, but the state branch chair's meeting will continue to run monthly, with the first to be held in November.

Meeting ended 9:45 am.

Australian Electric Vehicle Association Inc.

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The 47th Annual General Meeting of the AEVA

Date: 3rd October 2020

Location: Online (Zoom)

Meeting commenced: 10:00 am AEST

Registrants – Darryl Whiteside, John August, Jamie Lovick, Glenn Elliott, Phillip Hinds, Sanjay Saini, Richard Baird, Thomas Pinn, Mark Roberts, Charles Gregory, Yemon Chambers, Wolfgang Roffmann, Michael Day, Rick Molloy, Frank Leibfried, Christopher Walkden, Scott Ashton, Clive Attwater, Wayne Lever, Raymond Johnston, Penny Cocker, Michael Day, Rinat Farukshin, Tom Singer, Graeme Manietta, Simone Pfuhl, Bryce Gaton, sally knight, Chris Nash, Edward EOM, Patrick Ulrich, Peter Leam, Ronald Huva, John Clark, Steve Carter, Paul Tran, Greg Walpole, Ashley Gaghan, David Potter, James Pickering, Dan Deleur, Michael Upston, Shayn Harkness, Verna Blewett, Doug Rolfe, Taher Omari, Ros Pitt, Jude Burger, Peter Wyatt, Bernd Jahn, Margaret Ewings, Paul G Coop, Michael Jacombs, Keith Noyes, Arthur Hunt, Paul Fallon, Jurgen Beuth, Jens Svensson, Daniel Mulder, Jason Jacobs, Charles Daglish, Annette AtkinsWil Deasy, Ben Elliston, Anthony Houstonronald taylor, Glen Hammermeister, Paul Leopardi, Peter McMullen, Leo Kerr, David Lloyd, Dick Friend, Mike Belfield, Bill Gresham, Harold Lawrence, Gary Saisbury, Graeme Fredrickson, Mark Huston, Eric Rodda, Kat Thomas, Jill Clarke, Richard Bentley, Paul Grady, Rod Dilkes, Adrian Hills, Nuno Soares Carneiro, Thomas Yarnall, John McLoughlin, Roy Butler, Di Elliffe, Peter Youll, Sten Ekholm, Adele Craven, Darrell Mulberry, Greg McGarvie, Warwick Cathro

Attendees – Still recovering from Zoom – 43 to 48 attendees online

Apologies – Verna Blewitt, John Day, Dan Deleur

Minutes to the previous AGM – Minutes were uploaded to the AEVA Members section of the website for perusal. Clive Attwater moved that these be accepted and tabled. Bryce Gaton seconded the motion.

President's address – Delivered by Chris Nash. A transcript is available for viewing on the AEVA website in the "For Members" section. Chris Jones moved the report be accepted and tabled. The motion was seconded by Tom Singer.

Secretary's Report – Delivered by Chris Jones. A transcript is available on the AEVA website under "For Members". Eric Rodda moved the report be accepted and tabled. The motion was seconded by Sally Knight.

Treasurer's report – Delivered by Michael Day and can be found on the website for perusal. Glenn Elliott moved the Treasurer's report be tabled. Bryce seconded the motion.

Newsletter Editor's report – Delivered by Bryce Gaton. A transcript is on the website in the members section. Tom Singer moved the report be tabled, Paul Fallon seconded the motion.

Membership Secretary's report – Delivered by interim membership secretary Chris Jones. Penny Cocker moved the report be tabled, Charles Gregory seconded the motion.

National Council Meeting report – Delivered by Clive Attwater. A copy of the meeting minutes will be available in the members section of the website. Sally Knight moved the minutes to this meeting be accepted and tabled, Glenn Elliot seconded the motion.

The following motions were raised and passed by ballot on Zoom:

1. Motion to accept the minutes to the 2019 AGM (unanimous) – passed.

2. Motion to accept the elections/appointments of the National Executive as made by the National Council (unanimous) – passed.

3. Motion to accept that the power of decision making be delegated to the National Executive (42 in favour, 1 dissent) – passed.

4. Motion to endorse 2030 as the AEVA target for no new sales of ICE vehicles in Australia, including heavy vehicles, buses, ferries or any other machinery where an EV is appropriate (41 in favour, 2 dissent) – passed.

General Business –

- Sally Knight put the call out for a 2021 conference slogan. Suggestions rolled in on the chat box.
- Daryl Whiteside suggested there was a role for an education officer to work closely with schools and colleges. AEVA branches currently do this in a informal way, but it would be good to make this a nationally consistent program. Daryl offered to support this role in future.
- Ed Brow explained the nature of the ACT grant which was recently won and how it will be spent on running several events in the Canberra region to promote EVs and educate the public on their benefits.
- Wolfgang Roffman suggested greater inclusion of e-bikes and other non-automobile EVs to be featured more extensively. He also suggested that an email banner be included on all official correspondence which promotes the upcoming e-conference. The secretary has already done this ☺
- A question from the group concerned ongoing use of Zoom, even post Covid. As a means of connecting members who are a long way from capital cities, the technology is wonderful and will continue to be used. A webinar series will be held once a month through AEVA channels as well.
- Eric Rodda has maintained the www.EVFestival.com.au domain and will start promoting events on it free of charge.

Meeting ended 11.30 am.

Addenda to National AGM.

Addendum 1: AEVA AGM – President's Report-3rd Oct 2020

The C19 Pandemic has dominated the world during 2020 and it has necessitated some innovations within the operation of the association; however, it has not stopped AEVA from continuing to broaden our transition to electric transport. Beyond the mateship, compassion and inventiveness, the pandemic has given us a clear vision of an Australia without ICE vehicles. Road transport pollution is the second highest source of Australia's Greenhouse Gas emissions and the major source within Australian cities. Whilst in lockdown we have seen our cities breathe fresh air again and radically improve their air quality simply by people not starting up their combustion engine vehicles. The lack of travel during lockdown has demonstrated to Australians one of the great benefits of electric vehicles; Clean Air!

On the international stage, AEVA has been contributing to the global EV movement alongside the United States, Norway, The Netherlands, Croatia, the United Kingdom, to name a few. This collaboration has the goal to create an international EV association to facilitate faster transition to electrified transport. Our participation in World EV Day and National Electric Drive Week (USA) has further bolstered AEVA's international profile.

Back on the home front, today would have been the first day of the Melbourne EV Vision Expo which has now pivoted into an e-conference on the 27th November. My congratulations are offered to Bryce Gaton and the e-conference sub-committee for the great work they have done so far in successfully keeping our major national event alive and thriving during this difficult time (largest EV only conference in Australia, ever!). I encourage everyone to check out the EV Vision e-conference via our website.

It has also meant this is the first time AEVA has run the AGM online nationally, as have many of our branches. These adjustments to our external circumstances are a testament to the enthusiasm and ingenuity of our members and their commitment to the cause. It has been wonderful to be part of the new monthly 'states' meeting discussing how each branch is adapting to the local circumstances and ideas for moving forward. So a big thank you to C. Attwater, C. Jones, M. Day, S. Knight, J. Day, H. Murray, E. Brow who have been regular contributors to this new meeting, and those who have also filled in for a meeting or two.

Website launch

Whilst the pandemic has put a halt to many activities, it has not stopped the association launching our new website, which has quickly become the 'centre of our universe!' A big thank you to the core working group; Rob Hills, Christopher Walkden, Wes Koop, John Clark and Chris Jones. This piece of technology has modernised the association and now gives us the platform to push our message further.

Newsletter

Our newsletter has continued to go from strength to strength and is now a bona fide publication that all members can rely on quarter after quarter. A big thank you to our Newsletter Editor Bryce Gaton for his tireless work on this project and several others including our EV fact sheets, which are found on the website. This type of comprehensive information sharing gives us all a chance to become greater ambassadors for the switch to electric transport.

'Idle Off' Project

Along these same lines, AEVA has been involved in creating and now promoting a fantastic new program for schools called 'Idle Off', which you can get details of at www.idleoff.com.au. The IdleOff Project is designed to teach high school students (and their parents) the dangers of vehicle emissions on human health and discover how much air pollution is around their school, and eventually 'Idle Off'. So if you are involved or have connections to a school that might be interested in this program make contact via the Idle Off website.

AEVA Legal Structure

Many members will be aware that the National Executive has been investigating a change of legal structure for the association in order to fulfil our ongoing goals. This work continues and will shortly see branches provided with some further details to consider.

Geelong Sub-branch

In August of 2020 the Victorian sub-branch of Geelong was created with an inaugural meeting of 9 people. The region of Geelong has long been a developing area for EVs, especially in the area of conversions. With a range of charging infrastructure already in place at various locations in the city and along the coast, Geelong is an obvious spot to develop a sub-branch. It also creates a 'western triangle' with Ballarat and Melbourne. The Geelong sub-branch Chair is Blake Ramsey, who will now take a committee position on the Victorian committee.

It is the vision of the National Executive to set up several more sub-branches over coming years so that there is more localised activity around the country.

Discussion/Consultation

AEVA continues to engage in production consultation with a number of organisations to support our strategic planning and development. These include:

- Electrical Trades Union
- Renew
- Greenfleet
- RACV
- BWP Trust (Bunnings site owner)
- Business Council Sustainable Development
- Infrastructure Partnerships Australia
- RAWS: Registered Automotive Workshop Scheme

Thanks

I would like to thank our hard working branch committees around the country for their effort and commitment to the cause over the past year. They have been instrumental in invigorating the EV movement and keeping things moving during a very unusual and difficult period.

On behalf of myself and all members I would also like to thank our National Executive: Clive Attwater (VP), Chris Jones (Secretary) and Michael Day (Treasurer). There is an enormous amount of work that goes on behind the scenes to keep the association heading towards its objectives and these 3 gentlemen do not shy away from it and represent us very well to the general public and government alike.

Finally, I would like to extend my thanks to our valuable members for your continued support of the Australian Electric Vehicle Association. Our membership growth over the past 18 months has been tremendous and with your support we expect it to keep going as Australia heralds in the new electric era of motoring and transport.

Addendum 2: AEVA National Secretary's report – October 3rd 2020

Normally I cringe at the sight of Christmas decorations in September. It's always 'too soon' and a sign of an overzealous campaign to get you to part with your hard-earned. But this year I will make an exception. The end of 2020 can be ushered in as early as you like, even if takes tinsel and fairy lights in spring to hasten things along.

It's been a critical year on many other fronts too. Global temperatures are breaking records which were set the year before, while CO_2 and CH_4 emissions continue to grow. Australian politics has become an absurd pantomime where black is white, right is wrong, and we're told emissions are being reduced while simultaneously opening up new coal mines and gas hubs. Transport emissions are Australia's worst performing sector – currently representing 20% of all greenhouse gas emissions and growing. Little wonder the ABC's Fight for Planet A television series was so popular.

Despite the challenges, the AEVA has continued on our mission to see the electrification of everything that moves. Whether it's submissions to government, meetings with MPs and senators, or something as simple as inviting a business leader to an EV display, we've been pushing for a fairer and quicker transition to electric mobility. We're raising funds for critical charging infrastructure in regional WA, hosting a series of drive days in the ACT thanks to a successful grant application, and we're collaborating with like minds in other organisations like ReNew, SEN, Cleanstate, Idle Off, the EV Council, Standards Australia, AEMO and countless other statutory bodies. One good thing to come out of the pandemic was the AEVA official Zoom account, which allows any branch to host a virtual meeting, allowing members who live far away from the cities to get involved.

The new website has been running smoothly for about six months now, with articles, events, stories and factsheets in abundance. We can even manage bookings through the events feature and business members of the AEVA have a space in the Directories section to promote their wares.

Our membership growth has stalled a little, which was to be expected in the transition from the old database to the new one. So now is the time to start pushing for more members as EVs hit the mainstream. Our association represents a wealth of knowledge, experience and humility, and we look forward to sharing it with the nation. As the organisation grows, so too will the demands on our branch committees. The AEVA is still run by volunteers and it can be quite a thankless task, so please be patient as we do our best to make things happen. Plans are underway to update the structure of the organisation such that we can one day pay staff to manage our affairs. This places a greater emphasis on growing the membership and improving our revenues so we don't burn out our greatest contributors.

Let's make 2021 the year of change. Let's aim to double our membership, and get out into the regions to demonstrate the opportunities EVs offer. Let's aim to include the full diversity of Australia into our organisation, and tailor our efforts to those less well off. The most resilient change happens from the ground up.

After all, you can't stop an idea whose time has come.

Chris Jones 3rd October 2020.

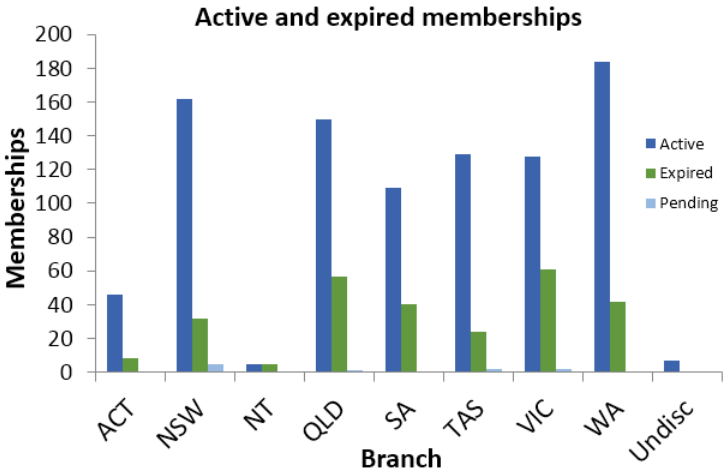
Addendum 3: National Membership Secretary's report, October 3rd 2020

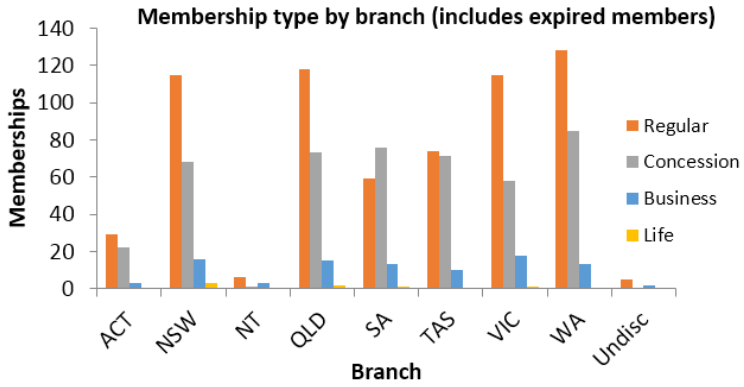
The switch to the new website and membership database meant some member renewals would be lost in the wash. COVID-19 meant in-person meetings took a back seat, so sign-ups suffered here also. However we have still seen growth in membership, but we do need to ensure renewals happen so we can retain these members.

Membership is our core source of revenue, and with the new membership fees having been in effect for a year now we are seeing this filter through to the budget. Concessional members make up 40% of our numbers. As a rule we don't police the eligibility of concessional claims, so we do ask those who can afford to pay full rates to consider doing so. Annual income based on these figures amounts to $32,450 from general members, $11,350 from concessional members and $11,625 from business members, or $55,425 by October 2021.

Table 1. Membership details for AEVA state branches. Membership type data includes expired members.

	ACT	NSW	NT	QLD	SA	TAS	VIC	WA	Undisc	Total
Active	46	162	5	150	109	129	128	184	7	920
Expired	8	32	5	57	40	24	61	42	0	269
Pending	0	5	0	1	0	2	2	0	0	10
Total	54	199	10	208	149	155	191	226	7	1199
Business	3	16	3	15	13	10	18	13	2	93
Regular	29	115	6	118	59	74	115	128	5	649
Concession	22	68	1	73	76	71	58	85	0	454
Life	0	3	0	2	1	0	1	0	0	7





Chris Jones, acting membership secretary.

Addendum 4: Treasurer's report for 2019/2020 Financial Year. Oct 1st 2020

AEVA National Accounts Commentary

- Dominated by the WA charger route and the NSW expo.
- WA Charge route income/expenses went via the National bank account.
- National loaned $15k to NSW for the Expo and recovered $7,500.
- Discrepancy of $47.64 remains, but should be easy to identify.

AEVA Organisation Consolidated Accounts

Income

- Membership numbers are up, and this is the first year since the membership price increase.
- Donations are up significantly due to the handwork in WA supporting the WA charge route.
- Event income is down; NSW was structured differently to QLD (FY19), some of the NSW event income landed in FY19, and NSW did not sell well.
- Overall, income is up (again) and at a level where we need to address the financial structure (AEVA Events registered for GST).

Expenses

- Admin is up generally, and specifically due to the paid financial advice.
- Insurance is up - mostly as we added new cover for events etc.
- Legal - new.
- Marketing up - events.
- Website trending up.
- Tools & Equip - First WA charger.
- Travel - newly broken-out but stable
- Event costs down - NSW was structured differently to QLD (Apples-for-apples NSW was more expensive than QLD).

Liabilities

- The second WA charge (which is now paid).

Net Surplus

- $8,845.69 (when liabilities considered).

Future

- Expecting membership to increase again.
- FY21 event costs and income will be down due to COVID.
- VIC conference expected to make a profit.
- Legal costs of $10k - $12k due to proposed structural changes.

	Statement Financial Year FY20					
Year Ending 30th June	**FY15**	**FY16**	**FY17**	**FY18**	**FY19**	**FY20**
Income						
Sales - Merchandise	88		2,996	10		6,015
Membership Fees	12,490	17,200	15,500	25,839	31,809	37,137
Fund Raising	748	1,173	2,672	3,787	3,247	735
Donations		509		4,806	2,990	79,684
Sponsorships					650	
Term Deposit & Bank Interest	712	615	567	541	515	384
Event Income	6,229	5,645	8,744	36,244	119,333	69,630
Total Income	20,267	25,142	30,480	71,226	158,543	193,585
Expenses						
Administration	1,054	1,810	1,485	1,495	2,722	4,143
Cost of Sales	589	565	2,979	1,353	240	348
Donations and Sponsorship					967	773
Hire of Premises/Equipment	1,581	1,200	1,933	2,036	2,858	2,188
Insurance	814	842	842	3,381	2,990	4,400
Legal						660
Marketing	363	3,078	5,265	2,729	6,353	7,510
National Website					1,065	1,938
Tools & Equipment	1,037	99	139	3,150	1,640	35,025
Travel					3,660	2,586
AGM Expenses	3,907	3,247	6,651	7,236	2,075	2,500
Event Costs	3,416	6,820	6,052	39,247	128,554	88,903
Total Expenses	12,760	17,660	25,345	60,626	153,123	150,974
Net Surplus(Deficit)	7,507	7,482	5,135	10,600	5,420	42,611
Assets						
Cash at hand or in the bank	23,044	28,672	32,800	43,643	47,830	88,778
Investments	31,059	32,913	33,923	33,680	34,229	33,743
Total Assets	54,103	61,585	66,723	77,323	82,059	122,521
Liabilities						
Secured loans						
Unsecured loans						
Other						33,765
Total Liabilities	0	0	0	0	0	33,765
Association Equity	54,103	61,585	66,723	77,323	82,059	88,755

Addendum 5: National EVNews editor's report: 2020

General notes:
It seems I may be in danger of announcing more farewell tours than Johnny Farnham – in that I am now offering to take on the role of newsletter editor for a 4th year in my originally intended two-year term! Whilst I do enjoy editing EVNews, it is not a sustainable project for just one person to continue doing the vast majority of the work. Unless the national executive comes up with an acceptable solution to this issue during the coming year, EVNews in its current form will end with my departure from it at the end of 2021.

Furthermore, by continuing in the editor's role it impacts (as noted below) on what I had hoped to become my next (and more sustainable in the longer term) project to expand the EV Fact Sheets beyond the model description sheets that I currently write and maintain.

2020 EVNews review:
For 2020, EVNews has settled into an average of 60 pages of information and news – a level of coverage I propose to maintain throughout the 2020-21 year. I am also appreciating the increasing number of articles coming in from members – so please, keep sending them in! If unsure of how to present an article idea or want some help – feel free to email or phone me. Each edition now I even manage to get a small excess of articles to help me begin the next – which really helps.
Many thanks also go to the proofing panel. That panel is now large enough that no one person need proof more than one or two issues a year and I still get 4 to 5 people checking each edition!

On the distribution front: with the advent of the new AEVA website it has become much easier to distribute EVNews using the most-up-to-date membership database. However the current website limit of 500 emails per mail-out still prevents myself (as the editor) being able to distribute it nationally via a single all-member email – so a reminder to branch committees that for at least a little longer, once I send the notification to each branch executive that a new EVNews has been uploaded to the website, they still need to distribute the notification through each branch's AEVA website member and interested non-member mailing lists.

Also, whilst EVNews is a member benefit and so can only be accessed from the AEVA website after logging in, feel free to send individual copies of current (or relevant back-copies covering their inquiries) to interested people as part of a first-contact reply. As the number of EVNews back issues increases, it should be viewed as a library of EV information to access and send: hopefully saving a few hours here or there for branches responding to charging, EV tripping etc enquiries by sending through advice shared by our on-the-ground-experience members through EVNews.

EV Fact Sheets:
As a side-note, in an associated (but not part of) the EVNews role I have continued in the 2019-20 year to maintain and develop the EV model Fact Sheets. Whilst I will continue to maintain these, due to continuing in the Editor role my intended further development of that area (as had been planned to begin in the 2019/20 year after a two-year stint as editor) will go on hold for a further 12 months.

That development by the way is to expand the Fact Sheets into a full-scale EV information centre that includes charging basics, EVSE installation advice, portable EVSE info, assist states to develop up-to-date EV network access advice, EV tour-guide sheets, etc, etc.

Cheers
Bryce Gaton
Editor: EVNews

Branch news:

West Australia:

The West has largely dodged the worst of the pandemic, with most shops and public spaces fully open. Branch meetings are still held in person, although the Zoom option means folks from all over the state can still join in.

The WA branch attended Sustainable House Day (September 5th) in collaboration with Renew (ATA) with a display of EVs at Subiaco Home Base, while a presentation was given on how EVs are a great match for solar rooftops on sustainable homes.

World EV day (September 9th) was celebrated at Perth Stadium with scores of EVs on display and a few ministerial photo-ops. Despite being a mid-week event, it was well attended. Some great footage of the event can be found here.

The WA branch fast charger fundraising efforts were finally put to good use with the first 50 kW DC fast charger being commissioned in Lake Grace, 325 km south-east of Perth. Key donor to the campaign, C D Dodd Scrap Metals was there with the company Ioniq to try it out. A second charger is ready to be installed at Ravensthorpe (half way between Esperance and Lake Grace) as soon as Western Power approvals are finalised.

We hope to have this charger installed before the end of the year, linking the stunning coastal town to the capital. Meanwhile, WAs first pair of universal ultra-fast DC chargers was commissioned in Treendale, 160 km south of Perth, while another pair is expected to be installed outside the RAC headquarters in West Perth. The Chargefox units are conveniently located and will serve the 'down south' convoys well.

Finally, local charging equipment installers and AEVA business members, Gemtek, hosted iDrive – an industry focussed test-drive day and EV conference designed to put fleet buyers, policymakers and car dealerships together. Despite officially opening the October 8th event, state innovation and resources minister Dave Kelly was quiet on a much anticipated state government EV policy, but assured us there would be something by the end of the year. It was great to see so many new EVs on display, particularly the BYD Electric Toro bus being used by Perth Airport, and the under-ground mining focussed Bortana EV 4x4 – who said the weekend is dead?

Bortana EV 4x4

Chris Jones. Vice chair, WA branch.

Victoria:

With the advent of renewed Covid lockdowns in Melbourne has come the formal intention to continue Victorian branch meetings via Zoom for the rest of 2020, with a possible resumption of physical meetings in February 2021.

Being virtual has not dimmed the enthusiasm of our branch members though, as we are still regularly getting 20 to 30 members attending each meeting. Our branch AGM (via Zoom) happened in September – resulting in a few changes to the Victorian committee. One change is – this will be my last Victorian branch report, as I am gradually handing over the secretary role to our new branch secretary – Rick Molloy!

Rick brings a wealth of experience to the role as a convenor of the (now folded) Renew Melbourne EV Interest Group, as well as many years of work with the Melbourne Renew branch committee.

The new/mostly old Vic AEVA branch committee that were elected at that branch meeting are:

Chair: Chris Nash
Vice Chair: Bryce Gaton
Secretary: Rick Molloy
Treasurer: Daryl Budgeon
General committee:

- David Potter (Drinks and Refreshment for Physical Meetings)
- Steve Carter (Representative of Ballarat Sub-branch)
- Blake Ramsay (Representative of Geelong Sub-branch)
- Rhys Freeman
- James Kirk
- Tom Singer

Meanwhile our branch has been working very hard to get the 2020 EV Vision e-Conference up and running – with finally finding a provider platform and putting the program of speakers across 8 international (and 5 Australian) time zones together!

In other news – our branch has been supporting many online EV webinars and events – including:

- Joint AEVA/Renew EV webinar: Oct 1st;
- Renew's Speed Date a Sustainability Expert: Oct 18th;
- Renew's EV and home emissions discussion forum with Craig Reucassel : Oct 21st;
- Nillumbik EV Webinar: Oct 29;
- Zero Emissions Byron EV Webinar series: Dec 1. Topic 5 – Going the Distance;
- Advance planning for several 2021 council EV public EV information forums;
- Planning for the delayed EVeco tour – hopefully to run in early March, 2021.

Bryce Gaton
Vice-chair: AEVA Vic branch
Editor: EV News

Tasmania:

COVID-19 waned long enough for the Tasmania branch to organise a 5 year anniversary get-together on the 15th of August. We chose a venue next to the new Evie Networks site at Campbell Town, and Evie kindly powered up the chargers for us a few days ahead of their launch! It was good to catch up with people in person instead of via email and Zoom.

We reminisced about the olden days in 2015, when we packed a cinema for our launch event to the astonishment of the local politicians. Our branch formation was a catalyst towards developing state-based AEVA branches (formerly city or region based). In 2017 we hosted an ambitious national conference which (we like to think) set the bar high for the years to follow.

Our members have been represented on or presented to committees, working groups and training days throughout the state. The current roll-out of DC fast chargers has been heavily influenced (hopefully advanced) by our input. Indeed, the company with the largest share of the Tasmanian DC fast charger installations (EHT) was started by a group of AEVA members.

Recently, our branch has developed three short videos featuring some of our members. These were developed to help advertise a webinar to be held in partnership with Renew after Sustainable House Day. The videos will also be available after that event: you will find them on the AEVA YouTube channel. (See also info on the AEVA YouTube channel on page 9).

Image: Evie network launch, Campbell Town. Photo - Ron Andersen

South Australia/Northern Territory:

We have been fortunate to continue to be able to meet in person with our approved Covid Safe plan. Signing in/hand sanitizer/spaced seating and no supper. Lovely to see each other though.
The August meeting was "show and tell' with Regan Whitehead from Mercedes with the EQC 400 on display. A great presentation, including an outline of their EV plans for the future with a new (and slightly cheaper) model coming next year.
Last month, it was an absolute delight to have Viv Rush speak about his initial design and subsequent build at Flinders University, of an electric car in 1970. That's right….50 years ago!
This car, named Investigator One, is currently owned by a local AEVA member and on display at the Flinders Uni campus.

Viv Rush speaking at our recent meeting

We also heard about the subsequent Flinders delivery van builds that used two battery swapping stations in Adelaide in the early 1980s. A whole 3 minutes for a battery swap 40 years ago – amazing.
With a grant in the recent Federal budget we expect to finally see EV manufacturing off to a fledgling start in Adelaide. The funds will be used to assemble up to 40 ACE Cargo vans to be used to trial bi-directional charging….. about time too.
While we are still awaiting the "imminent" release of the SA Government EV Action Plan, our committee has started planning next year's National Conference and Expo. Tentative dates Thursday 28th- Sunday 31st October, as long as we are all able to travel by then.
Our NT colleagues have been up to some really fun stuff – less Covid restrictions up north allowed the Red Centre Nats to go ahead last month and Hunter Murray from Alice Springs made the most of the opportunity to participate with his Tesla. (See separate article on page 23).

Eric Rodda (Secretary) and Sally Knight (Chair) SA/NT Branch

NT Update:
Hello From the NT, some local news is the second fast charger was installed into Darwin Electrical Wholesalers shop, Middys Woolner. Being only a 25kW, it is really a sample/demo unit but is available to the public and customers. (Now all we need is to fix the first one at CDU as it hasn't been working for some years now. Any members in Darwin that can help?). We are also looking for more Business/Govt sponsorship in this area if you know of any...

New charger at Middys, Darwin.

Secondly we have received the 6th Tesla in Central Australia to one of our biggest revheads in town that not only owns a Ferrari, Nissan GTR Godzilla and 3 airplanes including a Pitts Special. He was so impressed with the power of the model 3 and the size of the model S that he just had to have one (for the wife!). This makes up a total of more than 12 EVs now in Alice Springs. (A town of only 30,000 residents).
Hunter Murray (Alice Springs)

New South Wales:

In the third quarter of 2020, NSW has been slowly opening up again. All branch meetings are still online, but there have been some physical meetings too. Zoom meetings were on:

- **29 July:** NSW AGM, where new Board Members were elected – Michael Day (chairman), John August (Vic-Chairman), Jason Mead (Treasurer) and Mark Roberts (Secretary); Chris Nash (AEVA President) also gave a presentation on the upcoming plans to restructure AEVA.
- 28 August: branch meeting had a presentation by Alex Kelly from the Electric Vehicle Council www.evc.org.au. Alex talked about the work of the EVC on Policy development and Advocacy.
- **16 September:** branch meeting with presentations by Michelle Nazzari, Founder and CEO of Fonzarell Electric Motorcycles; and Florian Popp, Co-Founder of the Gemtek Racing Group.
- **15 October:** branch meeting. The meeting had barely started when it was gate-crashed by a number of unruly individuals. To circumvent this, the meeting was restarted with just the executive and presenters. Everyone else could only view proceedings on live streams on Facebook and you-tube. Chris Nash, our national President presented on AEVA policy and the restructure matters. Also presenting was Paul Davis, from Rectifier Technologies on their plans for hybrid bi-directional charging products.

Physical meetings (all done in a Covid safe manner) were:

- The Bundanoon drive on 5 September which went from Parramatta via the fast-chargers at Picton and Mittagong, to Bundanoon in the Southern Highlands. Starting at 9am, arriving at around 12:30 for lunch, then to the town centre for the official welcome, display of cars and chatting with locals. Formalities wound up around 3pm and from then we made our own way downhill back to Sydney.
- On 3rd October we had a physical meetup outdoors at Olympic Park. This involved small groups wandering around Olympic Park.

Other news:

- Ikea intends to “transform all their stores into renewable energy power plants”. These will include EV charging, but no details are available yet. As Sydney has a lot of Ikea stores, this is big news for us!
- Energy provider Ausgrid, working with Sydney start-up JOLT, intends to make all suitable street-side power-boxes (around 2000 of them) into EV-chargers. These will be 7KW Type-2, and free to use for the first 15 minutes.

Ausgrid/Jolt EV charging powerbox.

Australian Capital Territory:

After three months of Zoom-only meetings, the ACT Branch returned to onsite meetings from July, supplemented by Zoom webinar access.
At our August meeting, Dr Bjorn Sturmberg and Hugo Temby from the ANU College of Engineering and Computer Science spoke about the REVS (Realising Electric Vehicle-to-Grid Services) trial. This trial will involve 51 Nissan Leafs, mostly from the ACT Government fleet, which will be available to the national electricity system to inject power within a fraction of a second if required. The EVs will monitor the grid frequency when they are plugged in, and will quickly inject power whenever the grid frequency drops. This will contribute significantly to the prevention of a blackout in such circumstances.
The major development since the previous report was the news that the Branch was successful in its bid for funding under Round 4 of the ACT Community Zero Emission Grants. A "Zero Emissions EVenture", planned for March 2021 and featuring multiple forms of electrified transport, will be the most significant project funded by that grant.
The Branch participated in the celebration of the first ever World EV Day on 9 September. A range of electric vehicles was displayed in the centre of town. They included a modified Tesla Model S, a Hyundai Kona towing a camper trailer (pictured), a BMWi3, a Tesla Model 3, electric motorbikes, a Nissan electric van, a Porsche 986, e-bikes and scooters, and an ACT Government branded Nissan Leaf.

The Branch also began to hold "EV Experience Days" monthly from August. A variety of EVs, supplied by members, was used to provide rides for interested members of the public.
The Branch participated in planning a "Sustainable Transport" forum for the ACT election. This forum, organised by the Conservation Council ACT Region, was an opportunity for the public to hear from election candidates concerning their transport policies, including policies relating to EVs.

Warwick Cathro, Secretary, AEVA ACT Branch

Queensland:

When challenges like COVID-19 come along, it can be a learning process to adopt new ways to do conventional tasks. In July and August we had our first face-to-face meetings since February, but with a hiccup in the pandemic numbers, September was online only. For the Queensland branch we have been attempting to maintain attendance for our monthly meetings by allowing socially distant gatherings at the hall, Zoom live streaming and video recording for those that missed it. There are quite some technical challenges to maintain video and audio quality while projecting presentations from a laptop but as we hold each meeting and review what needs improvement, it bodes well for the quality of production moving forward.

The highlights of our last few meetings have been plentiful. Myself, Les and Simone were returned to our AEVA positions. Mark and Nathan from Mov3ment kindly offered to provide their market knowledge each meeting and this has been very insightful on a range of EV segments. Alina Dini presented her concept called “Give It A Whirl” that will help prospective EV buyers to get in touch with EV owners for more accurate information and experience than the dealerships offer. Graeme brought in a stripped down Tesla motor which was fascinating, Nathan spoke about the “Idle Off” project, Les discussed the Electrifying Conversations conference he attended in New Zealand but my personal favourite was the interview with Andrew Simpson from EVIE Networks. Andrew has been involved in the EV space for more than twenty years and will also be speaking again at this year’s EV Vision e-Conference.

Hopefully with the pandemic subsiding we can all meet up more freely and get back to hosting and attending EV events for the rest of the year.

Links to the QLD meetings playlist on YouTube can be found here:

https://www.youtube.com/playlist?list=PLLrlzEDZrnHhJMfFOAc95pB57w-dcIsQG

Thank you to all our presenters during this tricky time.

Jon Day, Chair, AEVA Queensland branch.

For sale/Wanted:

Advertising policy:

Member ads:

Run for TWO editions (unless notified earlier of a sale). Ads may be renewed after that for a further two editions provided a reasonable price reduction or other value-add is made for each of these two editions.

Non-members may place an ad for ONE edition for free provided they are not a business. Fees apply for second or subsequent ads.

Business ads:

All corporate members are entitled to a free 4-line ad per edition.

Fees apply to non-member business ads. (Contact editor for details).

For Sale:

AEVA charging signs: Contact your local State/ Territory branch secretary for details/supplies.

Member ads:

For Sale:

Hyundai Kona factory roof bars (iii)

PRICE REDUCED!

New in box. List price $375, sell $250.

Note: pick-up only.

Price: $250

Location: Melbourne

Contact: Bryce, 0428 537 053

48 volt, 24 Ah e-bike battery (i)

Made from Panasonic NCR18650GA cells in a 14s7p configuration, it is a high energy density battery. Fully potted with epoxy resin, this will break the ground before it breaks the battery. Effectively unused, it would be ideal for a long-range e-bike conversion. 30 amp Anderson connectors fitted, no BMS but a connector can be fitted.

Price: $400 ONO

Location: Perth, WA

Contact: Chris Jones. 0418 908 002

CirControl e-Basic EVSE (i)

'BYO lead' type. Adjustable to 6, 10, 13 and 16A.

Working, but currently won't charge above 16A (3.6kW) - used to do 20, 25 and 32A as well but needs repair.

Price: $350

Location: Perth, WA (Can ship - at buyer's cost)

Contact: Matt Lacey. 0401557291

Corporate member ad:

Betts Boat Electrics:

E-propulsion Spirit 1

1 Kw outboard motor, including battery

Price: $2690

Location: Queensland

Contact: 0419 674135

Branch contact info:

ACT:

Meeting day:
First Monday of each month from 7pm
(except January)
Venue:
Hellenic Club Canberra City, 13 Moore St
Some members meet in the Bistro at about 6:15 pm for a meal beforehand
Postal address:
N/A
Contact:
Warwick Cathro
E: warwickcathro@gmail.com

New South Wales:

Meeting day:
First Wednesday, every 2nd month (starting in February each year).
Venue:
Baulkham Hills Sports Club
11 Renown Rd, Baulkham Hills
Postal address:
PO Box 5285, Clayton Vic 3168
NSW Contact:
Mark Roberts
E: mark.roberts.aeva@gmail.com
Ph: 0412 588 803

Queensland:

Meeting day:
Third Wednesday of each month - 7:30pm
Venue:
The Albion Peace Centre
102 McDonald Rd, Albion
Postal address:
PO BOX 6031, ST LUCIA, QLD, 4067
Contact:
Leslie Smith
E: les@nano.com.au
Ph: 0401 250 624

West Australia:

Meeting day:
Second Tuesday of the month
Venue:
Varies - See AEVA website
Postal address:
26 Minerva Way, Carine, 6020
Contact:
Antony Day
E: secretary@wa.aeva.asn.au
Ph: 0416 345 575

South Australia and Northern Territory:

Meeting day:
Third Wednesday of each month - 7:30pm
No meeting in December
Venue:
Vogue Theatre, 25 Belair Rd, Kingswood SA 5062 (Northern Function Room).
Postal address:
AEVA (SA), PO box 434, Park Holme 5043, SA
Contact:
Eric Rodda
W: www.sa.aeva.asn.au
E: See SA AEVA website for contact link
NT (Alice Springs): Hunter Murray - (08) 8952 3411
NT (Darwin): Richard Smith – 0401 110 198

Tasmania:

Meeting day:
Every eight weeks, on the Wednesday.
Visit www.aeva.asn.au/tasmania for date.
Venue:
Varies - See AEVA website
Postal address:
226 Four Springs Road, Selbourne TAS 7292
Contact:
Penny Cocker
E: chair@tas.aeva.asn.au
Ph: 0466 269 636

Victoria:

Meeting day:
Second Wednesday of the month at 7pm.
Venue:
varies – see AEVA website
Postal address:
PO Box 5285, Clayton Vic 3168
Contact:
Bryce Gaton
E: EVNews@bigpond.com
Ph: 0428 537 053

Australian Electric Vehicle Association Incorporated
www.aeva.asn.au ABN: 27 629 533 129
PO Box 5285
Clayton
Vic 3168

MEMBERSHIP APPLICATION FORM

Membership is for one year from date of payment received.

New Membership? ☐

Renewal? ☐

Please tick a box

INDIVIDUAL MEMBERSHIP

TYPE (Please tick): ☐ ORDINARY $50.00 per year
☐ CONCESSION $25.00 per year

FIRST NAME:		LAST NAME:	

CORPORATE MEMBERSHIP *TAX INVOICE*

☐ SUBSCRIPTION: $125.00 per year

COMPANY NAME:	
CONTACT PERSON:	
POSITION:	

CONTACT DETAILS *...for either type of membership / renewal*

ADDRESS 1:			
ADDRESS 2:			
CITY/TOWN:			
STATE:		POSTCODE:	
PHONE:			
MOBILE:			
FAX:			
EMAIL:			
WEBSITE:			

AEVA BRANCH (meetings you attend):	

By Joining you agree that you support the aims of the association and will abide by the rules of its constitution.

SIGNATURE:.....DATE:...../...../.....

No GST is included as we are GST EXEMPT.
Please Make Cheques and Money Orders Payable to **AEVA Inc.**

Privacy Statement:
The Australian Electric Vehicle Association Inc. will not pass your membership details on to any third party without your permission.