Advocating the Energy Transition:

SEN Presents
Electrifying Road Transport

19th October 2026

Agenda

Welcome and Emergency Response

Acknowledgement of Country

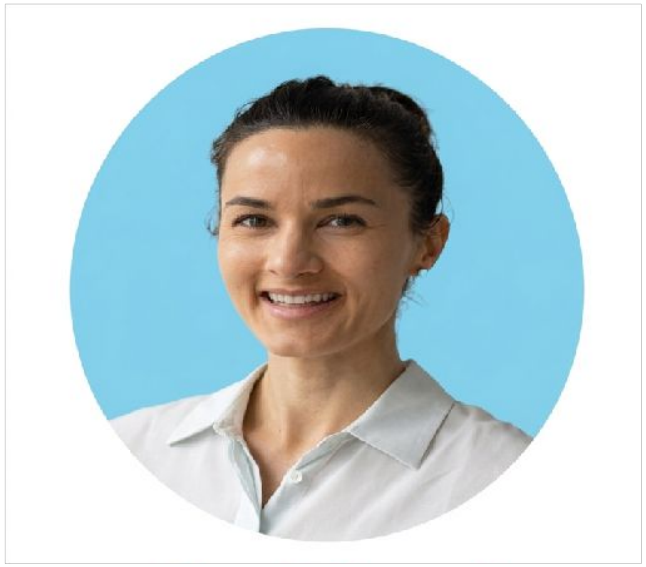
1. Speakers and Slido (for audience questions submission)
2. Speaker 1 – Alex Bolzonello – SEN
3. Speaker 2 – Sarah Aubrey – Electrify This
4. Panellists and Audience Questions
5. Wrap

1

Speakers and Slido

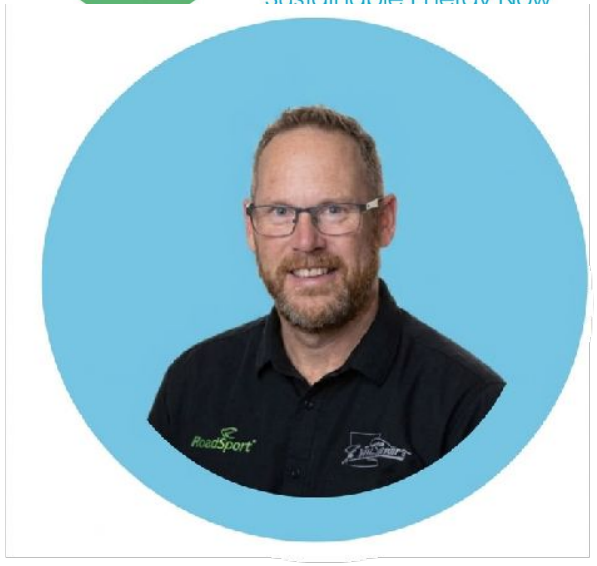
Tonight's Speakers and Panellists

Sarah Aubrey
Electrify This Founder



Alex Bolzonello
SEN

Kitty Hemsley
AEVA



Alex Foster
EV Charging Systems

slido

Meeting Number # 4163992

1.1

Alex Bolzonello SEN Modelling Team

A copy of this presentation will be available post event on the SEN Website

SEN
Sustainable Energy Now

Will electrifying transport crash the grid?

EV uptake, charging load and the WA energy transition

SEN Modelling Team | Perth | October 2026

EVs won't break the grid, ***if*** we manage when they charge

HOW MUCH

5–12% of SWIS operational energy by 2035

Buses and trucks use 27% of EV energy

WHEN

Managed: the peak stays below forecast

Unmanaged: adds up to 3.4% to the peak

WHERE

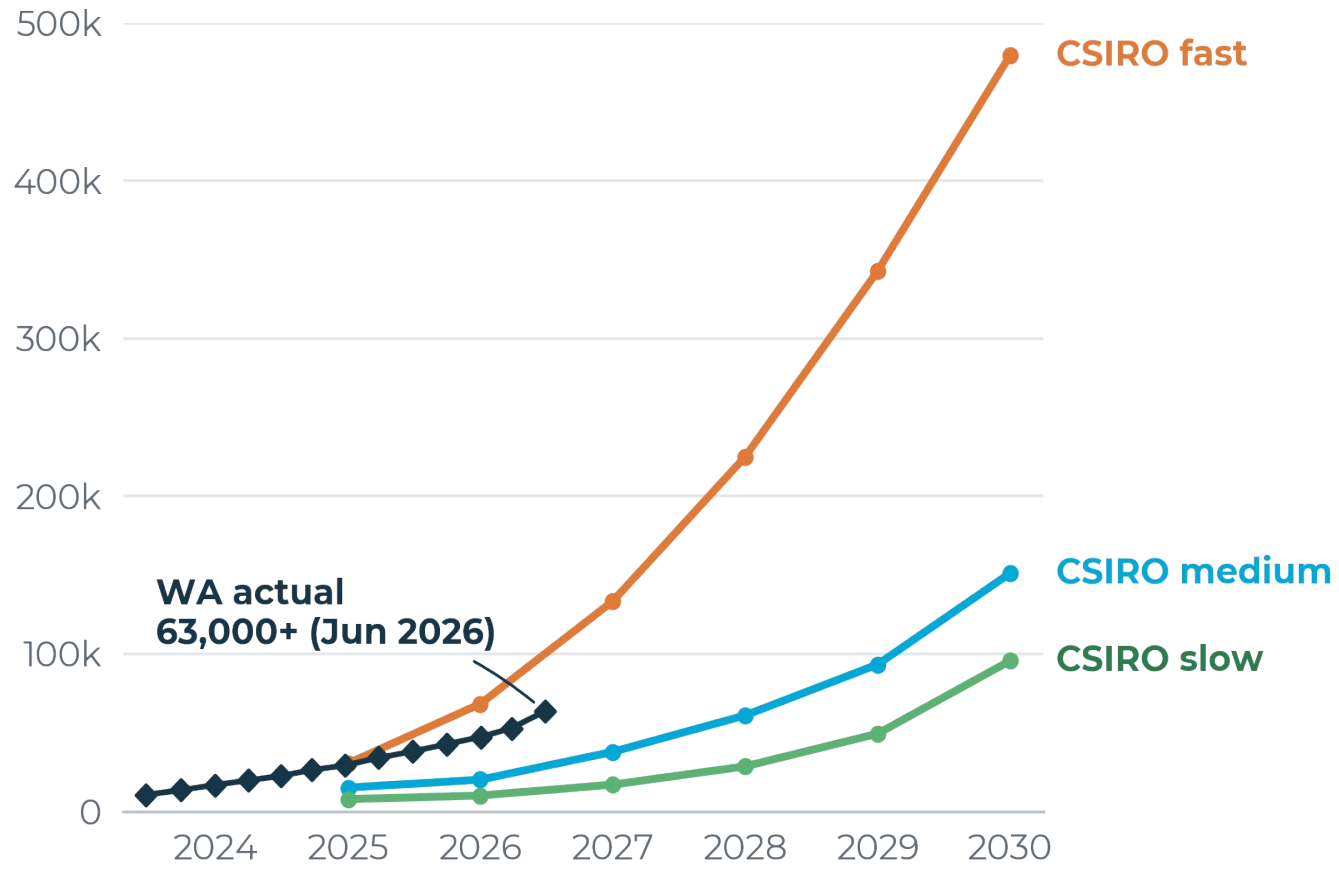
Pressure falls on local networks

EVs cluster in suburbs and business hubs

HOW MANY

EV uptake is ahead of CSIRO's medium forecast

Light EVs in WA (cars, vans and utes) vs CSIRO's 2022 forecasts



63,000+

light EVs in WA at June 2026, up from under 1,400 in 2020

2.4x

CSIRO's medium forecast, Dec 2025 (47,000 actual vs 20,000 forecast)

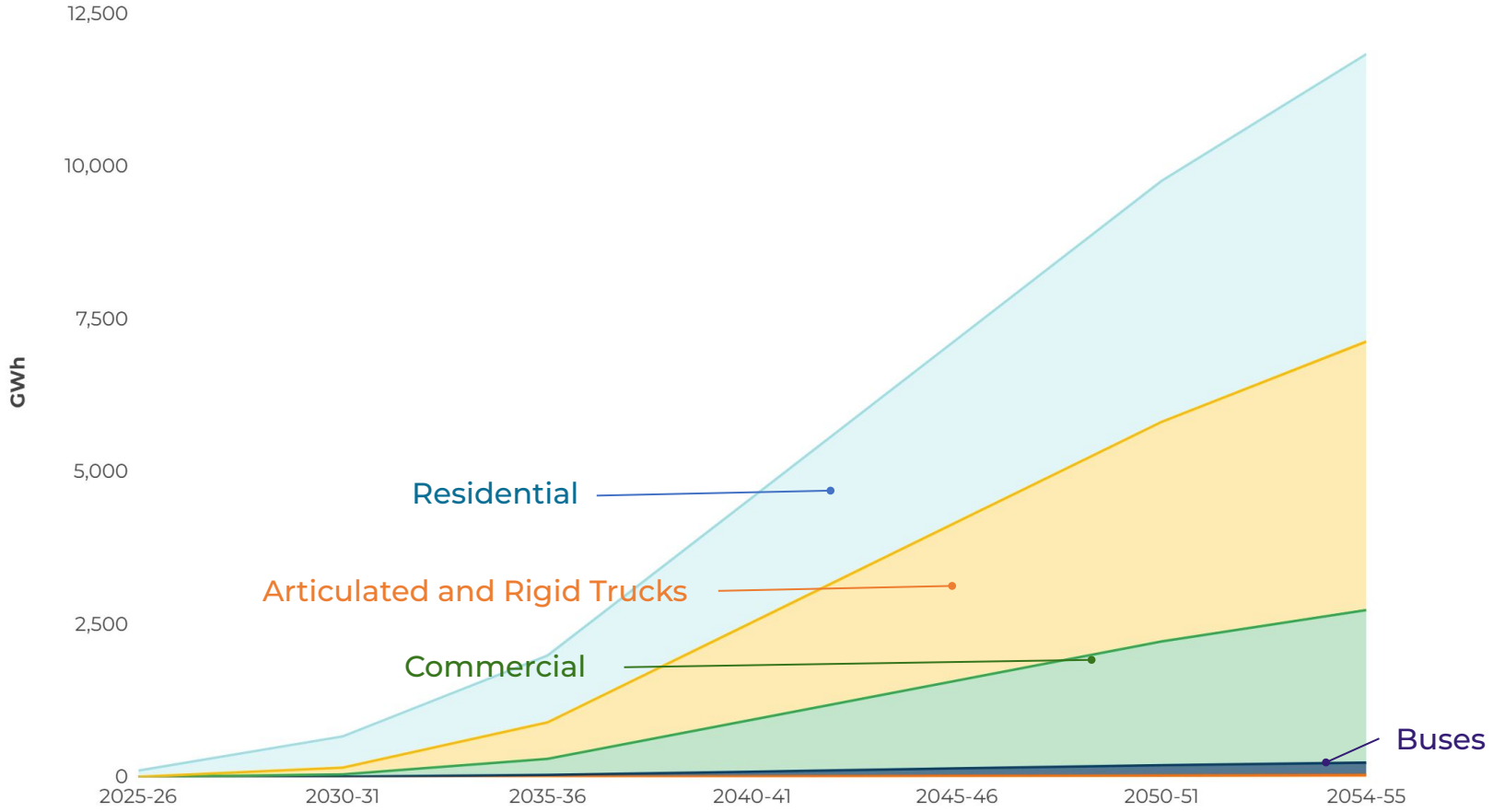
Passenger vehicles make up most EVs (AEMO medium scenario)
Falling from 87% in 2035 to 73% in 2055
Trucks and buses grow from 2% to 5% over the same period

Sources: WA Department of Transport and Major Infrastructure (DTMI), EV licensing data, Dec 2025 and Jun 2026; DWER, State EV Strategy for WA: Progress Report 2025; CSIRO, EV Uptake Projections, 2022; fleet mix: AEMO, 2025 IASR EV workbook, WEM region, Step Change (aemo.com.au). Tracker: SEN SIREN Web.

HOW MUCH

Annual EV consumption is modest

EV energy use by vehicle type, AEMO medium scenario (GWh)



26.0 TWh

SWIS operational consumption in 2035 (excl. rooftop solar), up from 17.5 TWh in 2025–26

5–12%

EV share in 2035 (1.3 to 3.2 TWh)

Heavy vehicles

Buses and trucks consume 27% of EV energy in 2035, despite being just 2% of EVs

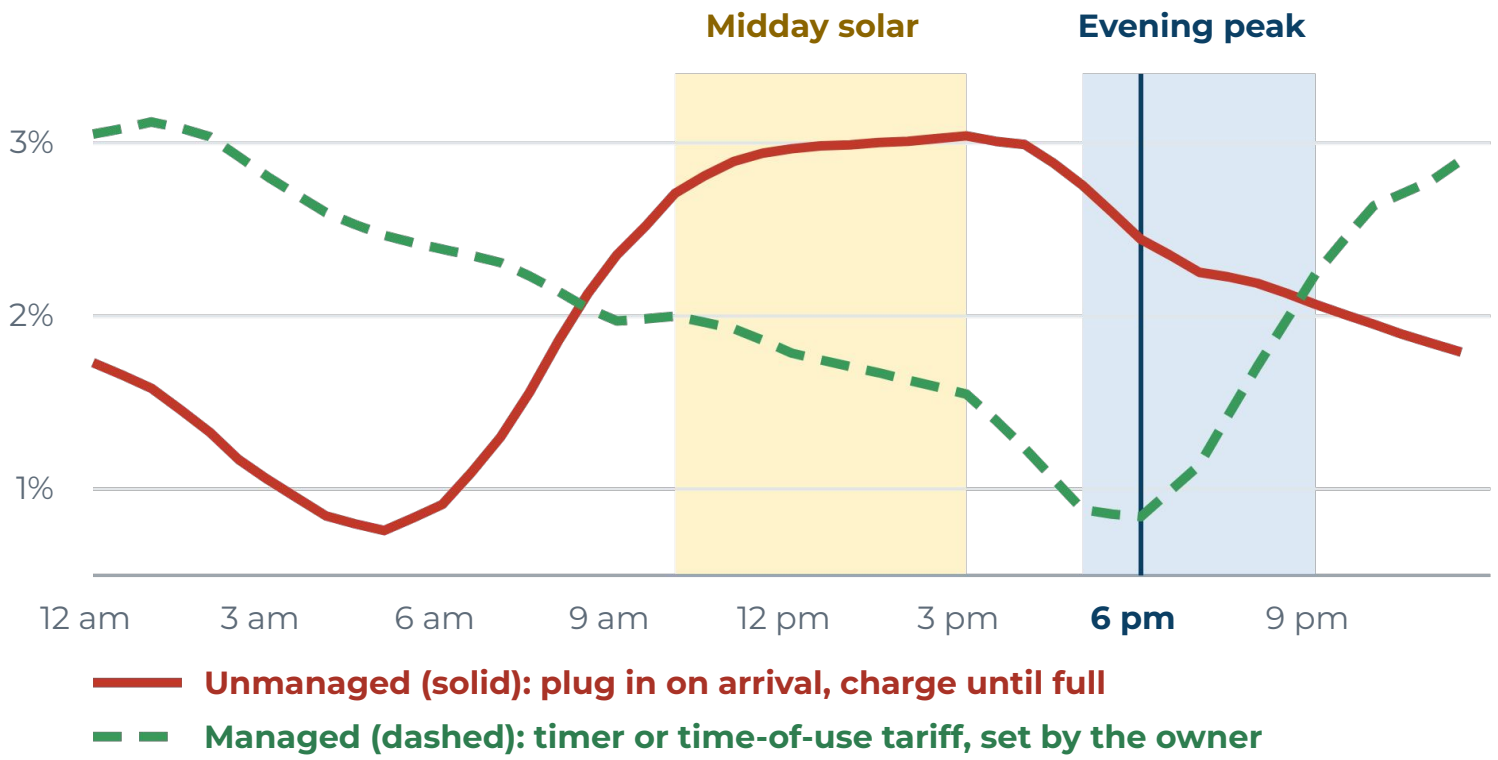
Rising to ~40% by 2055

Sources: AEMO, 2025 IASR EV workbook (CSIRO projections), WEM region, BEV and PHEV consumption; AEMO, 2026 WEM ESOO, Expected scenario, operational basis derived by SEN (aemo.com.au).

WHEN

Same energy, different grid impact

Share of a day's EV charging in each half-hour, typical weekday



Both profiles deliver the same daily energy, but timing sets grid costs and emissions

Unmanaged: charging stays high into the 6 pm peak, adding to gas use

Managed: timers or time-of-use tariffs cut 6 pm demand, with a full battery by morning

Midday solar: charging in daylight soaks up cheap, abundant rooftop solar

Sources: AEMO, 2025 IASR EV workbook, WEM region, weekday charging profiles, combined by SEN into managed and unmanaged composites; AEMO, 2026 WEM ESOO, Table 10 (aemo.com.au).

OUR MODEL

How we modelled it in SIREN Web

EV charging layers added to SEN's model of the SWIS

01
How many EVs?
CSIRO EV fleet

Cars, motorbikes, vans, utes, buses and trucks

02
How much electricity?
Annual charging energy

03
When do they charge?
AEMO half-hourly charging profiles

17,520 intervals

04
Where are they?
ABS postcode boundaries

Only postcodes inside the SWIS

05
What does it add?
Replaces the EV load in AEMO's forecast

TRACK

Is WA following the forecasts?
WA registrations against the forecasts, every quarter

EXPLORE

What changes the evening peak?
Slow, medium and fast uptake, managed and unmanaged

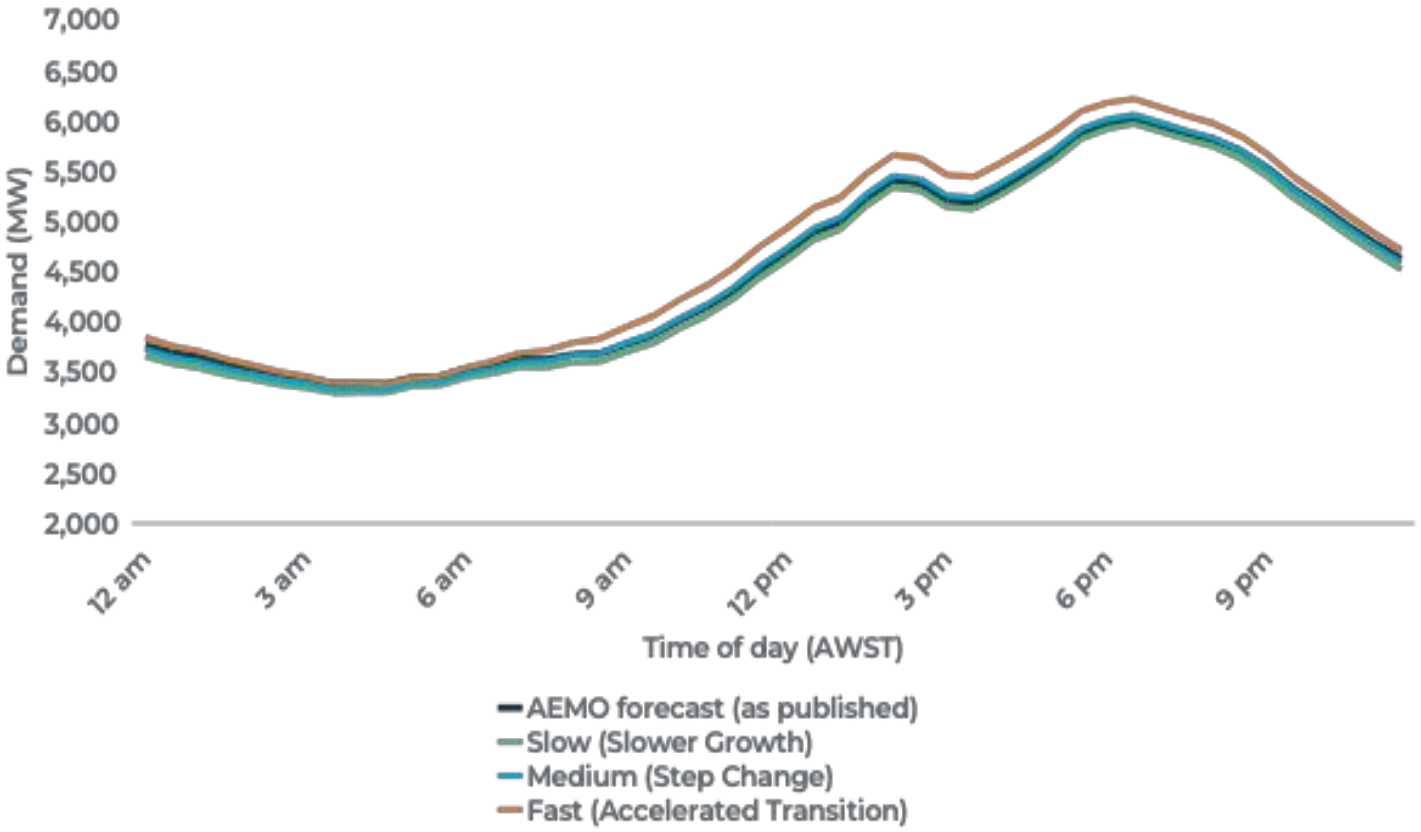
Sources: CSIRO, EV Uptake Projections by postcode, 2022 release (agdatashop.csiro.au); AEMO, 2025 IASR EV workbook, WEM region (aemo.com.au); WA DTMI EV licensing data; ABS Postal Areas (ASGS Edition 3). Slow = Slower Growth, medium = Step Change, fast = Accelerated Transition.

WHEN

Unmanaged charging lifts the peak by up to 3.4%

Unmanaged charging: demand on a 1-in-10 summer peak day, 2035 (MW)

AEMO's forecast includes ~210 MW of EV charging, net change is minimal −0.7%, +0.7% and +3.4%



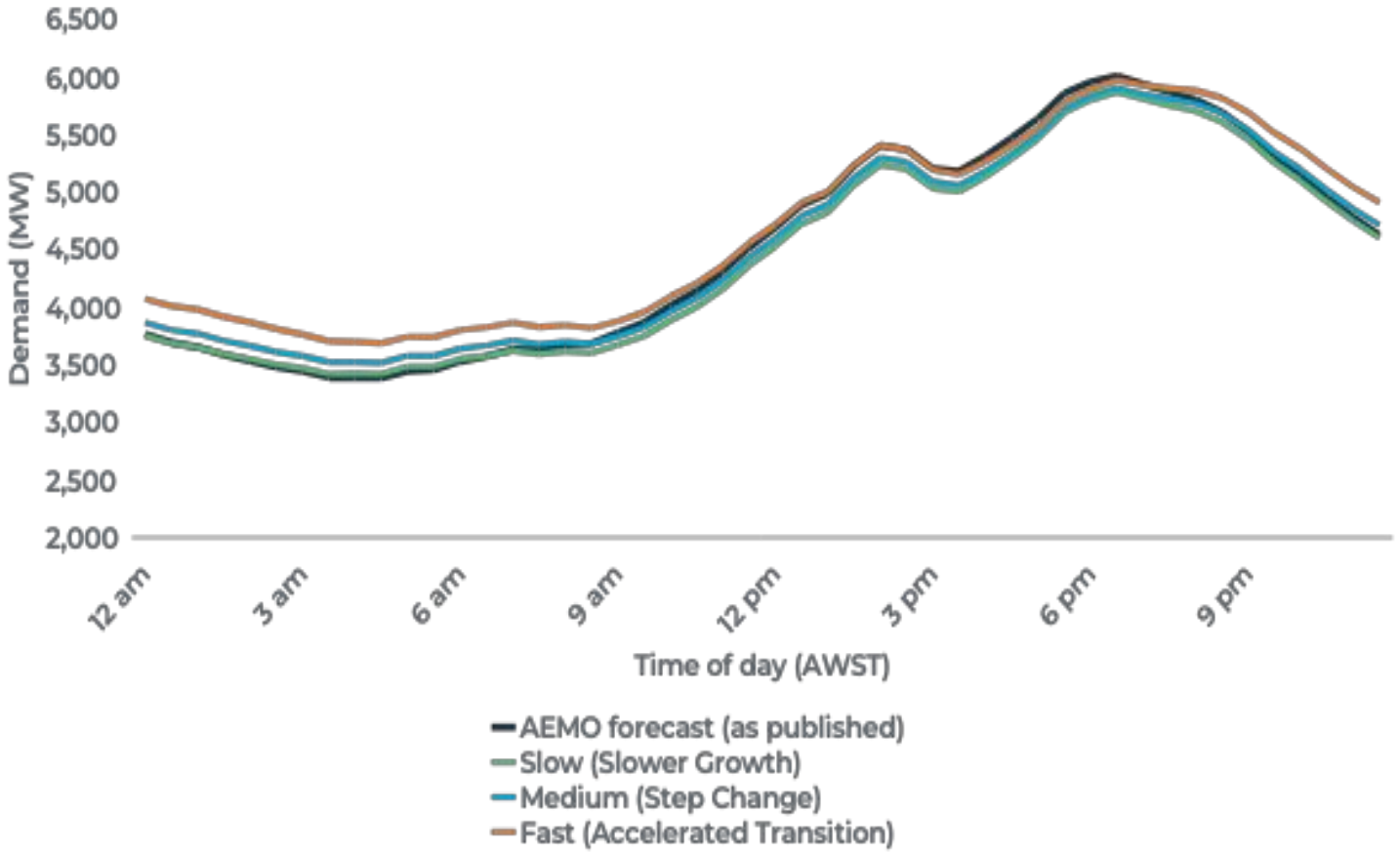
Scenario	EV load at peak (MW)	Peak change (MW)
Slow	170	−45 (−0.7%)
Medium	260	+45 (+0.7%)
Fast	420	**+204 (+3.4%)**

Source: SEN analysis of AEMO, 2026 WEM ESOO (Expected, 10% POE, operational basis) and AEMO, 2025 IASR EV workbook (CSIRO projections), WEM region (aemo.com.au). The EV load already in AEMO's forecast is removed before each scenario is added. The peak day is illustrative, not a forecast date.

WHEN

Managed charging keeps the peak below forecast

Managed charging: demand on a 1-in-10 summer peak day, 2035 (MW)



Scenario	EV load at peak (MW)	Peak change (MW)
Slow	70	−142 (−2.4%)
Medium	110	−105 (−1.7%)
Fast	170	**−38 (−0.6%)**

Same vehicles, same energy, different timing

- EV load at the peak falls by ~60%
- A 240 MW swing between fast uptake scenarios

Source: SEN analysis of AEMO, 2026 WEM ESOO (Expected, 10% POE, operational basis) and AEMO, 2025 IASR EV workbook (CSIRO projections), WEM region (aemo.com.au). The EV load already in AEMO's forecast is removed before each scenario is added. The peak day is illustrative, not a forecast date.

WHERE

The pressure is local, not system-wide

The bulk grid (transmission)

~2.2 GW

capacity shortfall by 2035–36, counting only committed projects

Our 240 MW swing is about 40% of the new capacity AEMO expects beyond those projects

Your street (distribution)

40–50 kW

added by just 6 or 7 home chargers at 7 kW, enough to overload a small street transformer

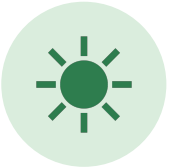
Timers that all start at midnight just move the peak

Current charging policy

PEAK PRICING

Avoid the peak

Time-of-use plans and timers move charging out of the costly 3–9 pm peak



MIDDAY PRICING

Use our solar surplus

Midday power is our cheapest and cleanest. The next wave needs daytime chargers and plans that make it the default

EARLY TRIALS

Give power back (V2G)

WA's fully electric vehicles already hold about half the storage of our big grid batteries

Sources: AEMO, 2026 WEM ESOO, Table 1 (aemo.com.au); SEN analysis (slide 8); Evenergi, Western Australia Electric Vehicle Owners: Behaviours, Attitudes, and Policy, Oct 2023 (wa.gov.au); WA DTMI EV licensing data, June 2026; Collie and Kwinana battery sizes via RenewEconomy, 27 Aug 2025 (reneweconomy.com.au). The street example is illustrative.

Managing the grid is a collective responsibility, and one we all benefit from

What we found

- **How much:** a modest 5–12% of SWIS operational consumption by 2035
- **When:** timing matters most. Managed charging keeps the evening peak below forecast
- **Where**: the real challenge, on local transformers and lines

What's next

- **Keep tracking** WA's EV numbers against the forecasts
- Focus on the impact of **electric buses and trucks**
- **Explore vehicle-to-grid (V2G)** so EVs can give power back

SEN Sustainable Energy Now

sen.asn.au | info@sen.asn.au

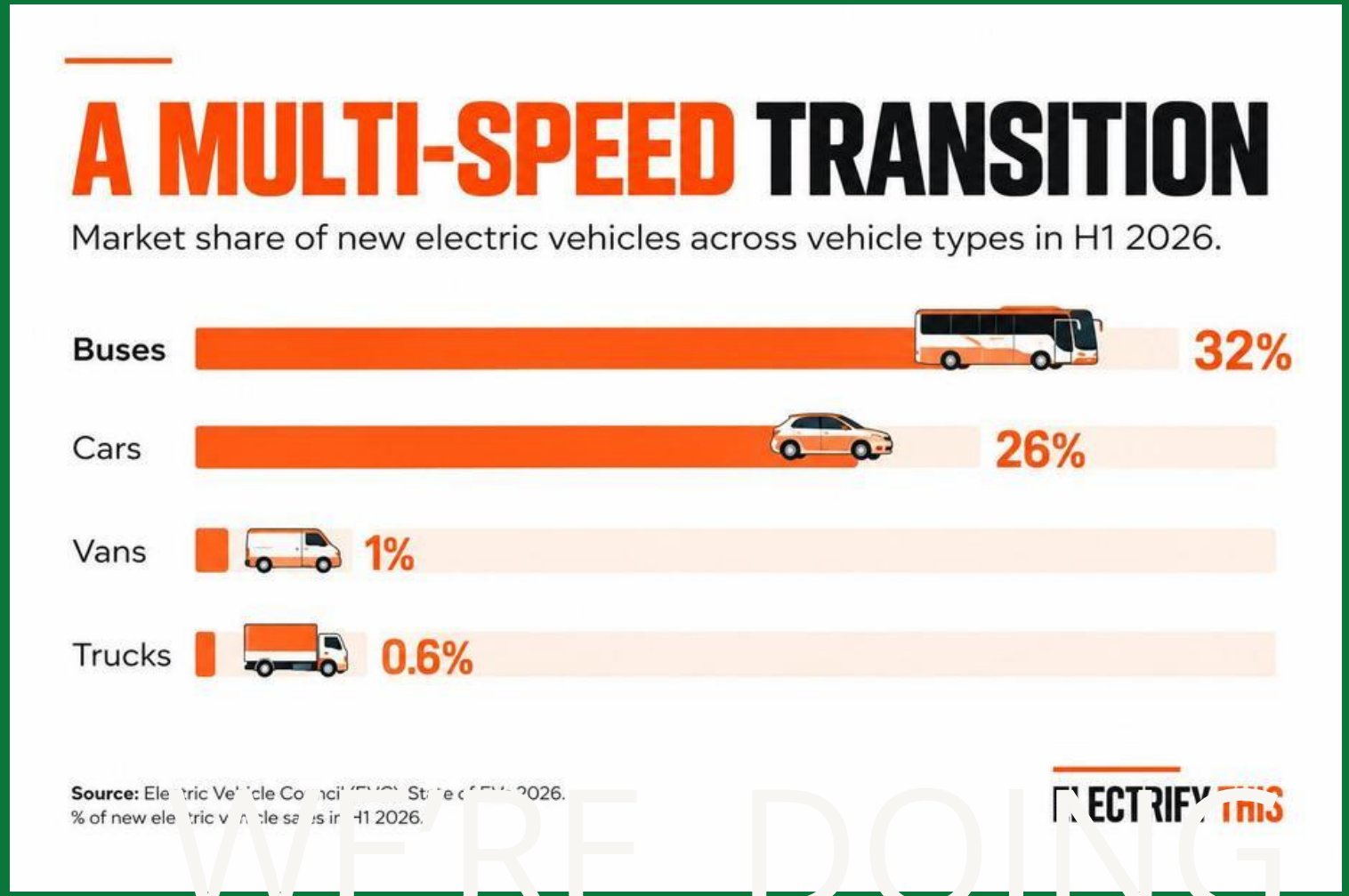
1.2

Sarah Aubrey Electrify This Foun

A copy of this presentation will be available post event on the SEN Website

INNOVATION & DISINFORMATION

ELECTRIFY THIS



WE'RE DOING WELL

TRUCKS

V2G

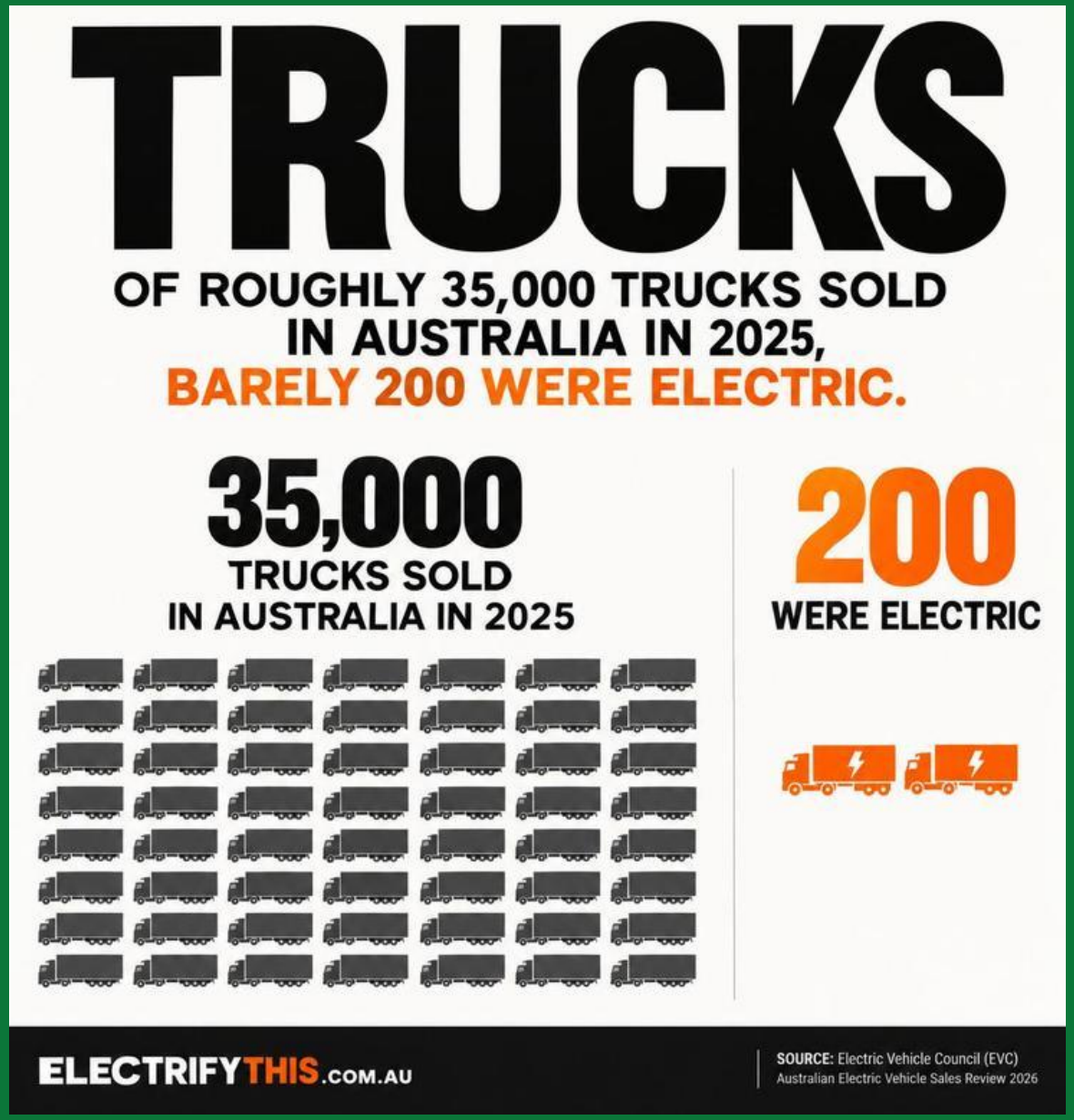
MICROMOBILIT

Y

TRUCK

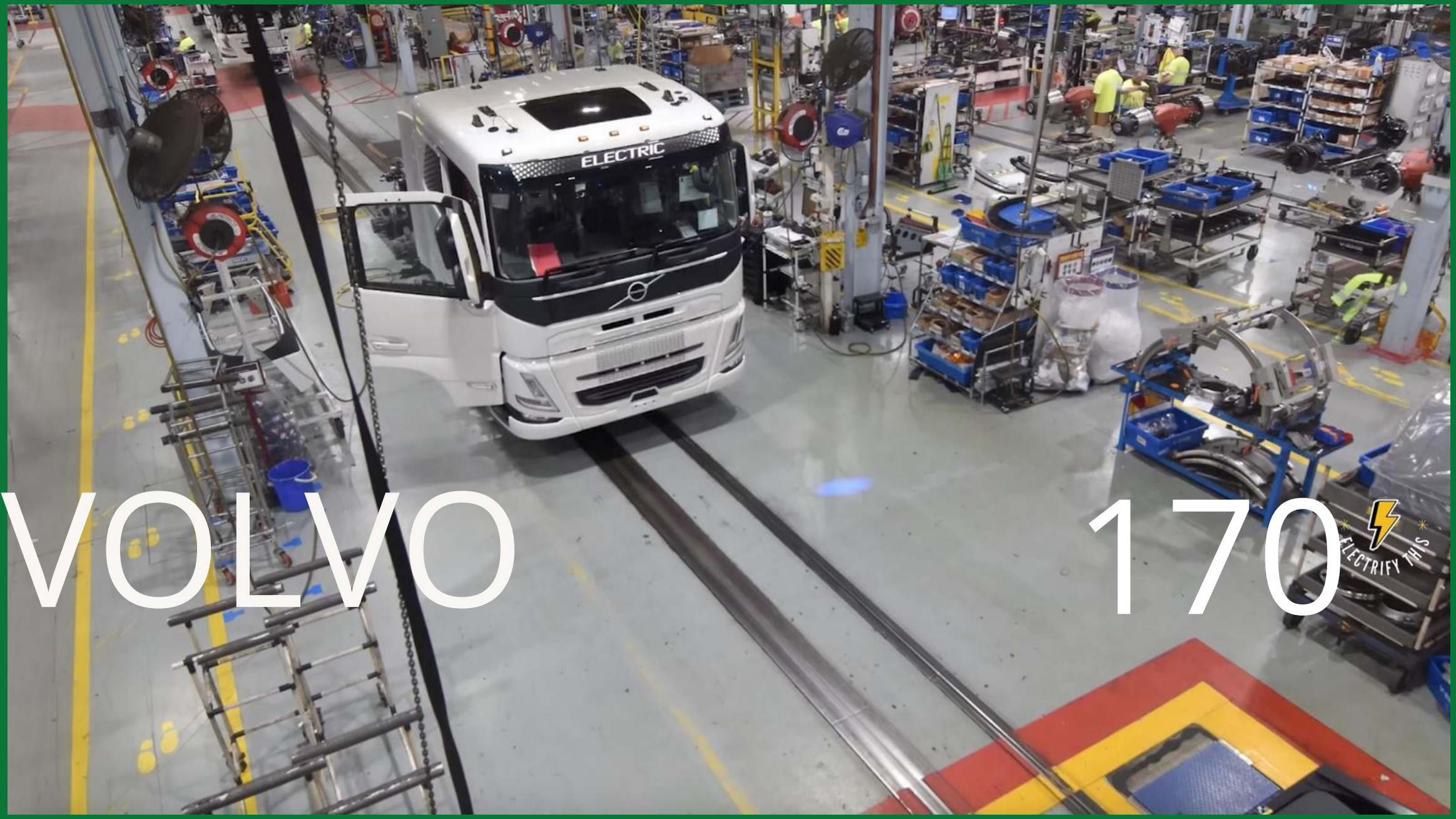
ELECTRIFY THIS

WE NEED MORE



ELECTRIFY THIS

80%
of freight in Australia travels less than
270km a day.
It's time to electrify.
ELECTRIFYTHIS
ELECTRIFY THIS


ELECTRIC
VOLVO
170
ELECTRIFY SHE

GEN 2

410KM

MADE IN AUSTRALIA

18

JANUS

UPGRADING TRUCKS

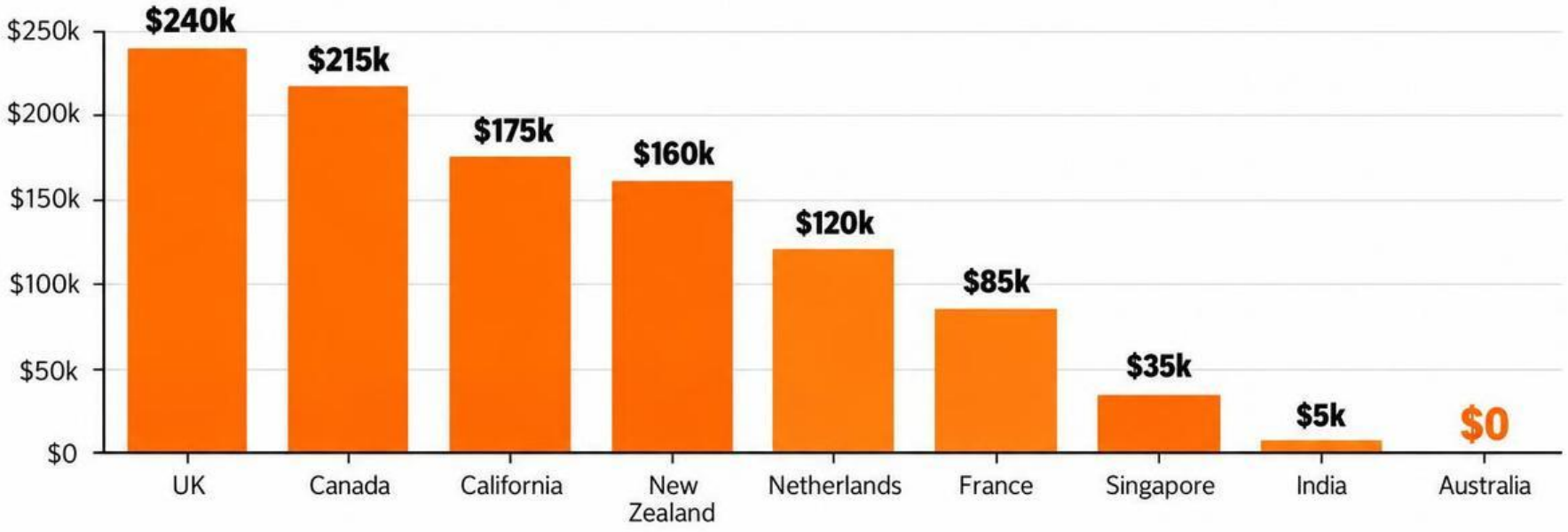
EXPANDING INTO THE US

126 ORDERS

50 KITS A MONTH BY

AUSTRALIAN TRUCKIES GET ZERO SUPPORT TO GO ELECTRIC

Incentive per electric truck (approx. AUD).



Source: Electric Vehicle Council (EVC), State of EVs 2025.
Approximate incentive per electric truck.

ELECTRIFY THIS

BRIGHT

ELECTRIFY THIS

SUNSWIFT 8

TRIBRED: SOLAR / BATTERY / HYDROGEN FUEL CELL

ADR COMPLIANT

LAUNCHES IN MARCH 2027

V2

ELECTRIFY THIS

MERGE ENERGY

ELECTRIFY THIS

V2G KEY

Australian Start-up Merge Energy working on a low-cost V2G charger

Synthetic Solar: The device emulates a solar panel and connects to your existing rooftop solar inverter.

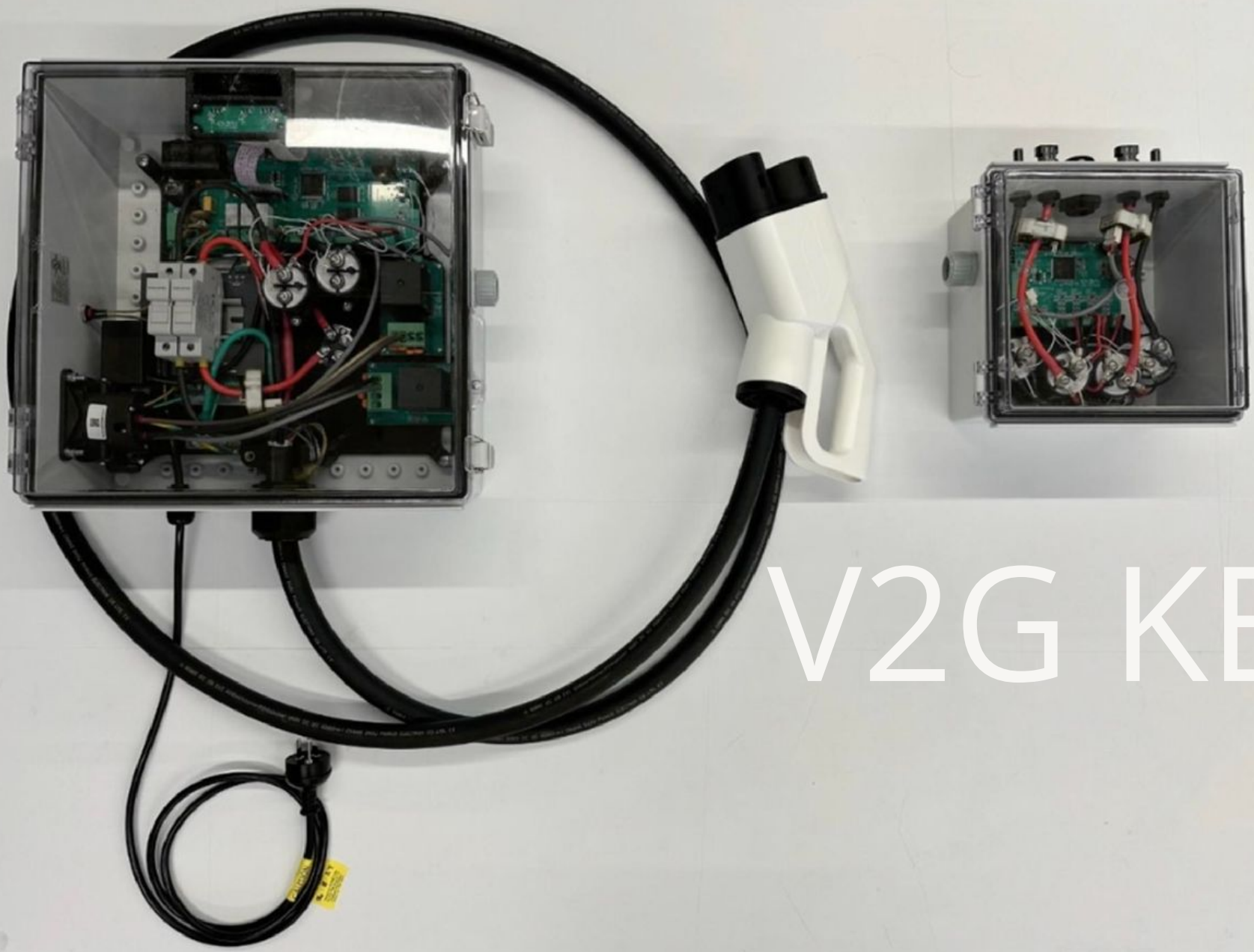
DC Power Transfer: It takes direct current power from your parked EV battery and feeds it straight into your current inverter ports.

Nighttime Usage: It uses your dormant solar inverter after dark to power your House or export electricity back to the grid.

Lower Cost: A simple retro fit that allows V2G at a lower cost.

Smart Integration Layer: It connects with energy platforms like Amber Electric to manage smart charging and grid demand responses without needing custom integrations for every EV brand.

ELECTRIFY THIS



V2G KEY

MICROMOBILIT

CHIN
ELECTRIFY THIS

FONZ

FTN MOTION STREET DOG XR

ELECTRIFY THIS

DECARBONISATION ISN'T JUST ABOUT CARS

ELECTRIFY THIS

MISINFORMATION & DISINFORMATION

HOW DO YOU FIGHT IT?

DON’T

POINT OUT IT'S A FAKE ACCOUNT OR BLOCK

MAKE YOUR OWN CONTENT & MAKE IT OFTEN

LET THE TROLLS CHASE YOU

MYTH BUST WITHOUT MENTIONING

STATIC POSTS
REELS
SUPPORT OTHERS

ELECTRIFY THIS

2

Audience Q&A

slido

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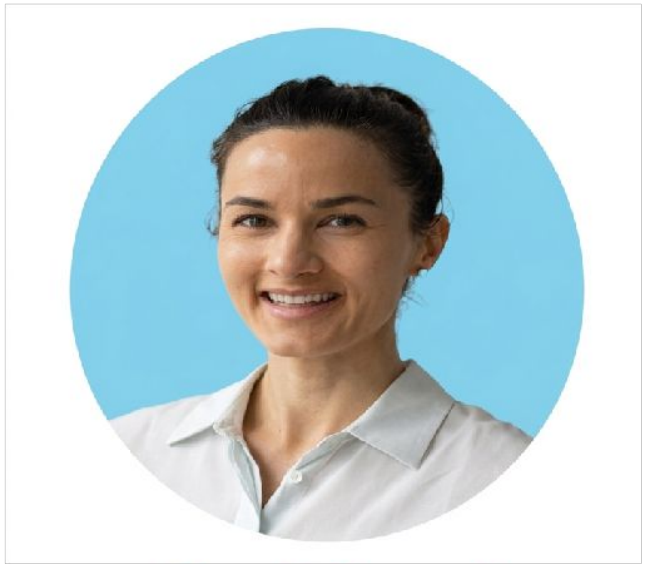
Tonight's Speakers and Panellists

Sarah Aubrey
Electrify This Founder



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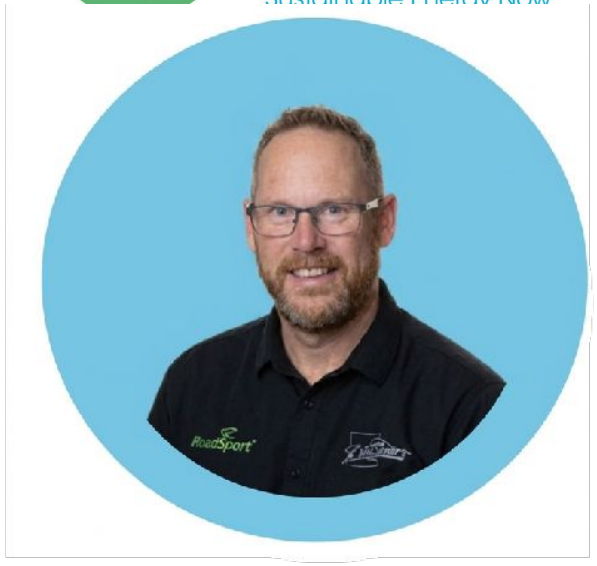

Alex Foster
EV Charging Systems

slido

Meeting Number # 4163992

3

Wrap-up

Call to action

What can you do?

- ✔ Get informed: follow SEN on social media, subscribe to Boiling Cold and support independent journalism, subscribe to https://cobleg.substack.com/ , Energy Insiders podcast
- ✔ Get organised: Join SEN, Australian EV Association or a local electrification groups
- ✔ Get involved: SEN's Sprint Challenges
- ✔ Contact your State and Federal MPs
- ✔ Buy a SEN T Shirt !