Government of **Western Australia**
**Energy Policy WA**

# Electric Vehicle Action Plan

## Preparing WA's Electricity System for EV Uptake

**31 August 2021**

Working together for a
**brighter** energy future.

# Welcome

**Jai Thomas**

**Assistant Coordinator of Energy**

**Energy Policy WA**

# Electric Vehicle Action Plan: Agenda

| Item / time | | Presented by |
|---|---|---|
| 2.00 pm | Welcome | Jai Thomas |
| 2.05 pm | Ministers address | Hon Bill Johnston MLA |
| 2.15 pm | EV Action Plan: presentation<br>Technology integration<br>DER participation<br>Tariffs and investment signals<br>Customers | Aden Barker |
| 2.40 pm | EV Charging network | David Fyfe (Synergy)<br>Nathan Price (Horizon Power) |
| 2.50 pm | Questions | Jai Thomas (moderator) |
| 3.00 pm | Close | |

# Hon Bill Johnston MLA

**Minister for Mines and Petroleum; Energy; Corrective Services**

Working together for a **brighter** energy future.

# The EV Action Plan

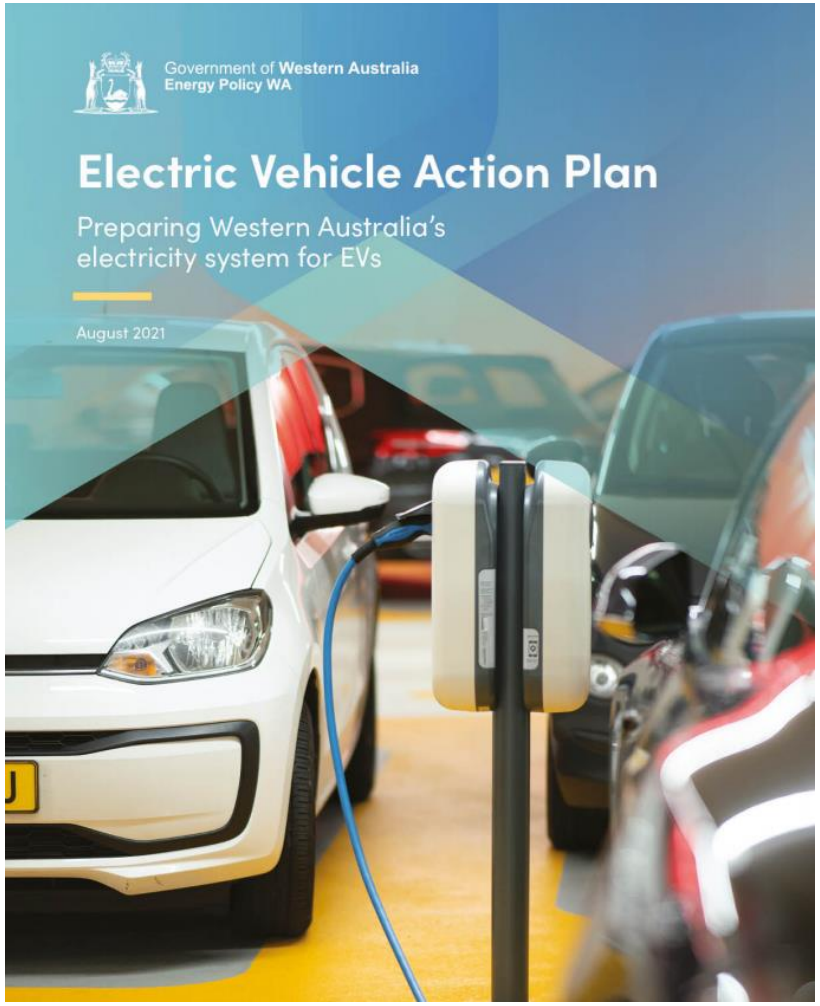
**Aden Barker**

**Director Electricity Networks & Customer Participation**

**Energy Policy WA**

# What is the EV Action Plan?

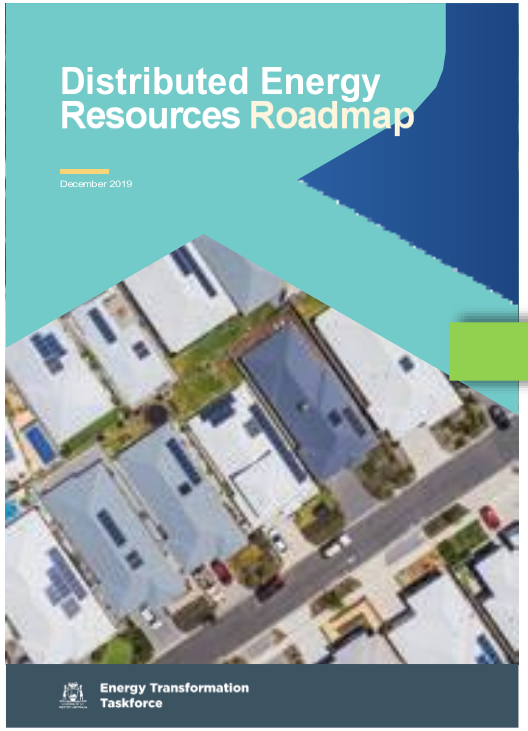
*"An integrated set of 26 actions designed to deliver a future where EVs contribute to a safe, reliable and efficient electricity system while accelerating our transition to a low-carbon future"*

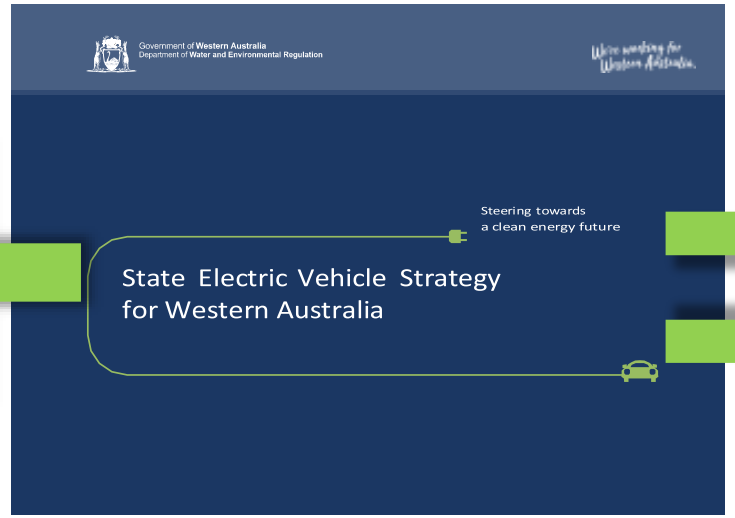


# EV Action Plan – part of a vision

## The DER Roadmap vision:

**A future where Distributed Energy Resources (DER) is integral to a safe, reliable and efficient electricity system, where the full capabilities of DER can provide benefits and value to all customers**

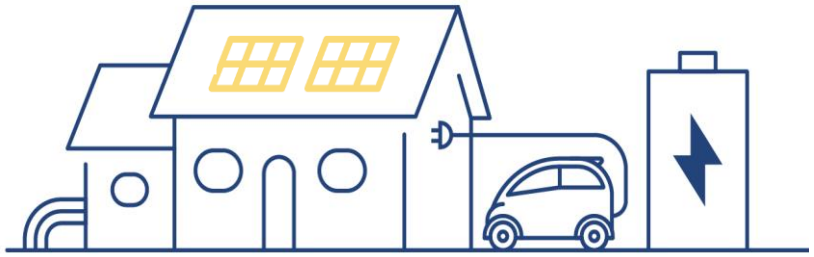



# The Energy Transformation

Energy is **distributed**

**Batteries store cheap renewable energy** for later use



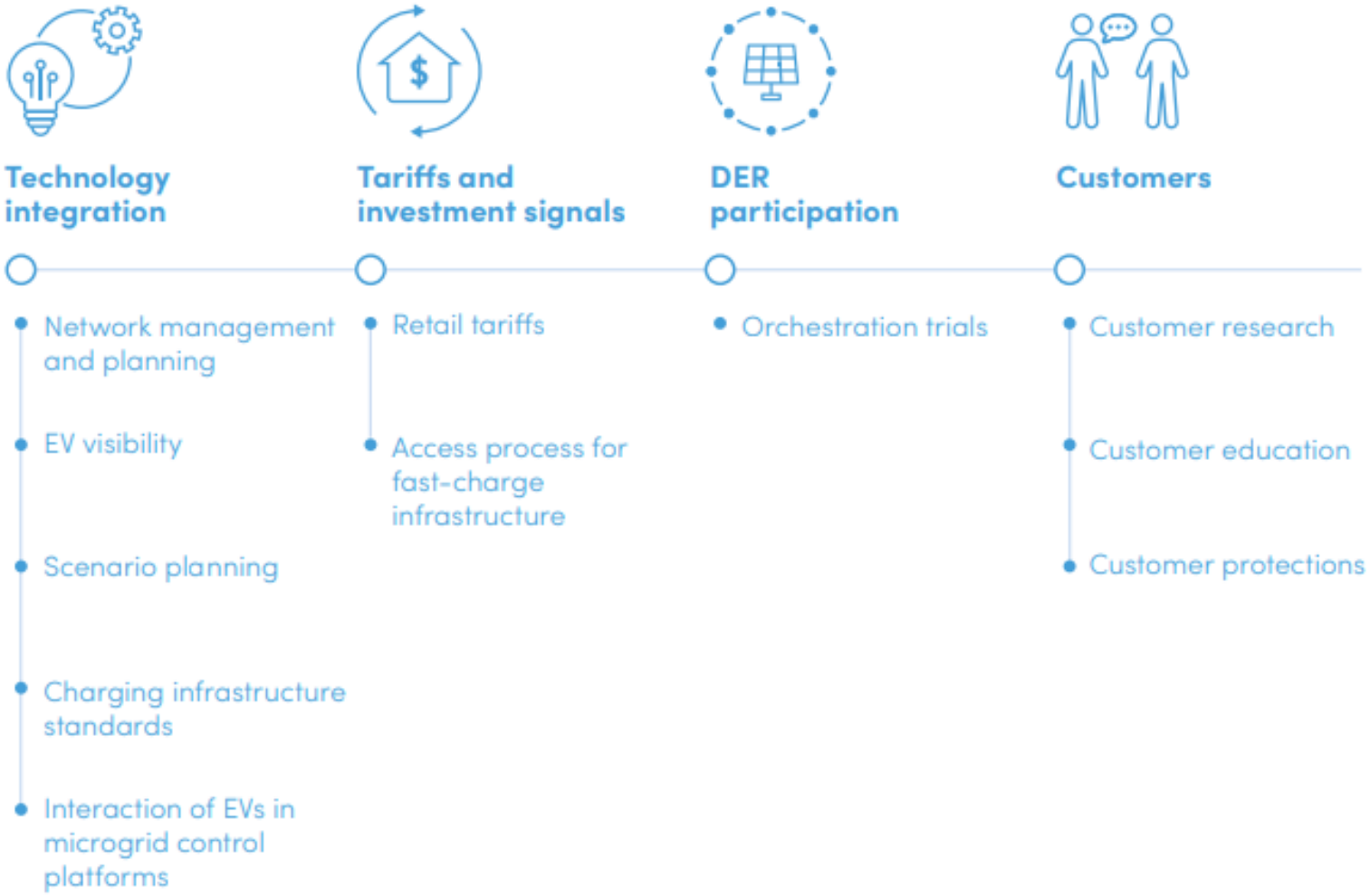
Customer devices provide value to all

Many devices are coordinated to act as a virtual power plant

Customer DER can participate in electricity markets and receive incentives

# The EV Action Plan

**Four** Themes, **Eleven** Elements



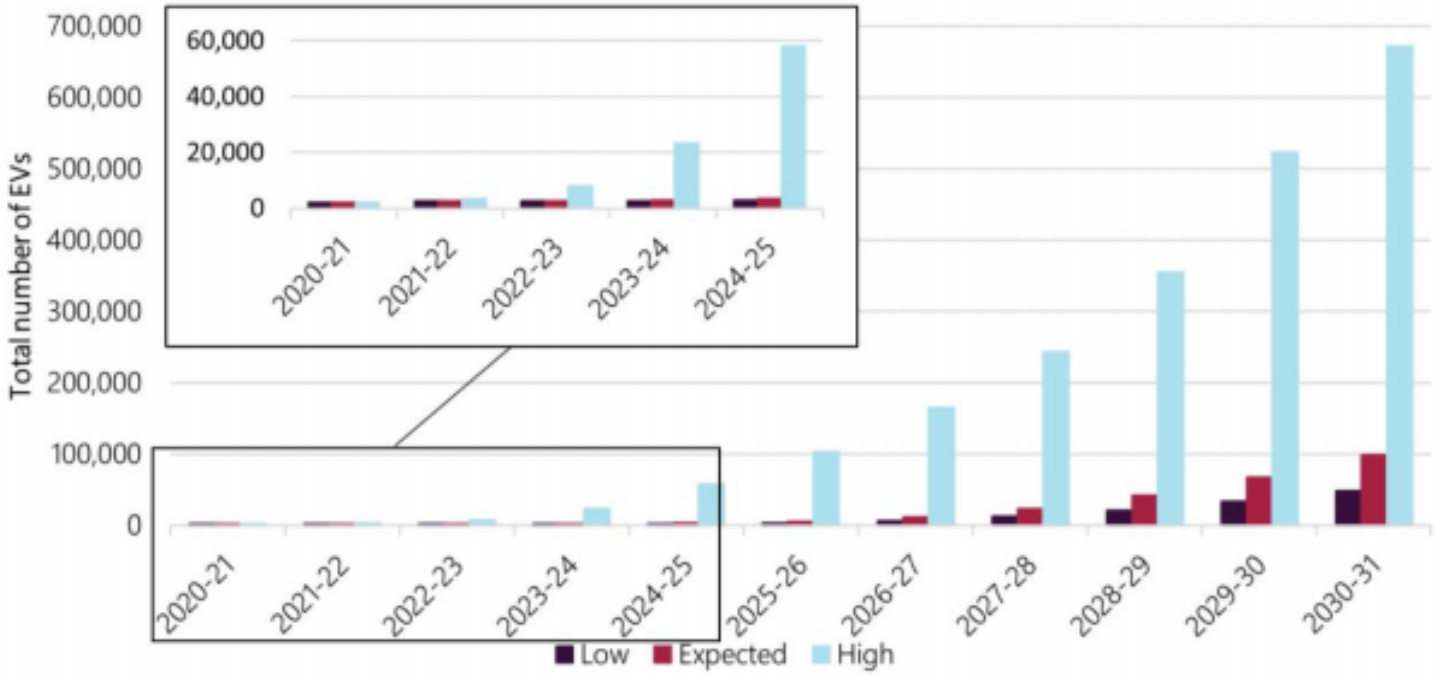
# Technology Integration

**Technology integration**

- Network management and planning
- EV visibility
- Scenario planning
- Charging infrastructure standards
- Interaction of EVs in microgrid control platforms

## EV Uptake rates are uncertain – planning for a single number won't work

**Figure 30 Forecast total number of EVs, 2020-21 to 2030-31[A]**




A. Includes BEVs and PHEVs. BEVs have electric motors (that are solely battery-powered), while PHEVs have both petrol engines and electric motors. Both BEVs and PHEVs can recharge their batteries at a power outlet.
Source: CSIRO.

**Source: AEMO 2021 Electricity Statement of Opportunities**

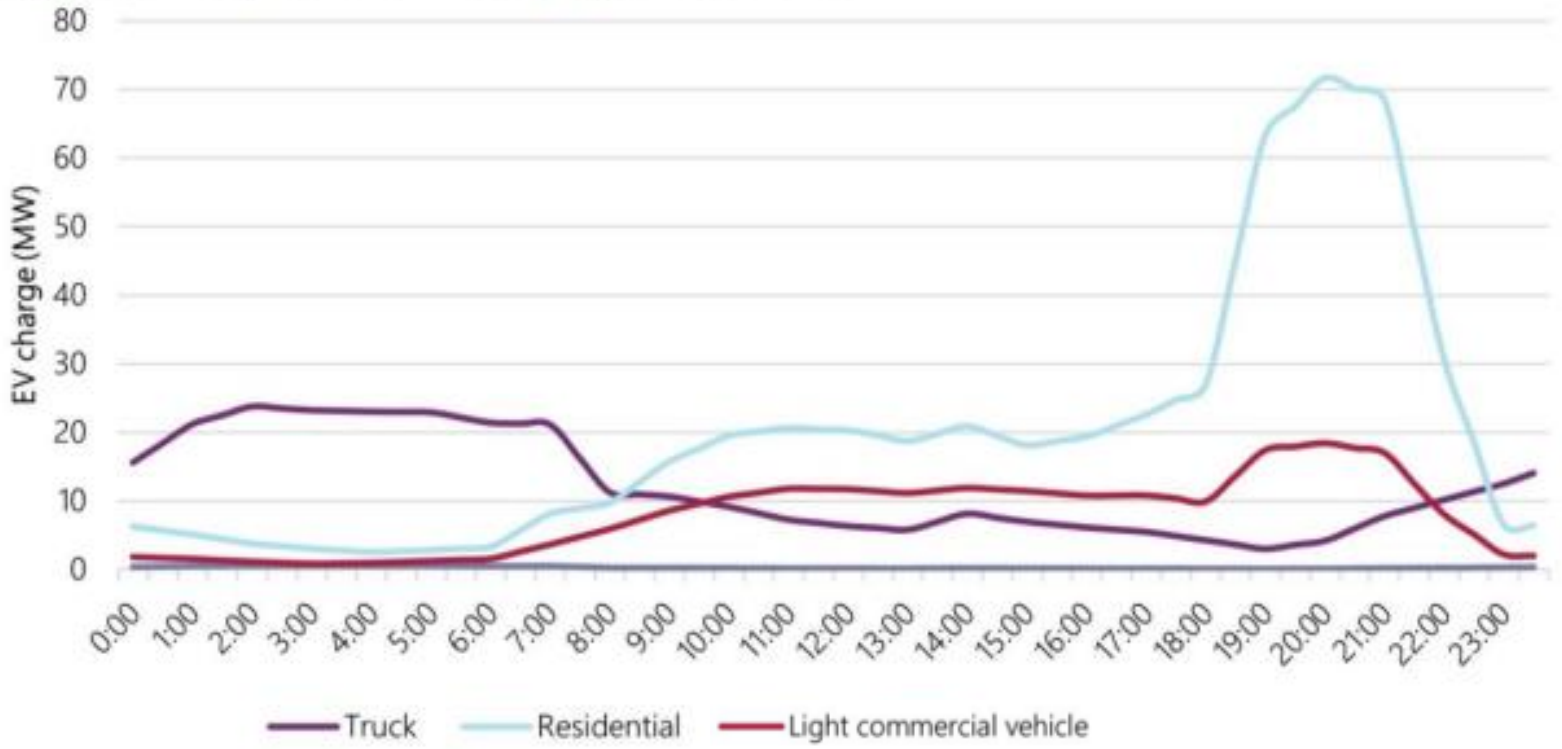
# Technology Integration

**Technology integration**

- Network management and planning
- EV visibility
- Scenario planning
- Charging infrastructure standards
- Interaction of EVs in microgrid control platforms

- **Where and when charging occurs matters – needs to be planned for**
- **More visibility improves management of network impacts and enables new business models**

**Figure 31 Daily weekday EV charging profiles, June 2031**




Source: AEMO 2021 Electricity Statement of Opportunities

# Technology Integration

**Technology integration**

- Network management and planning
- EV visibility
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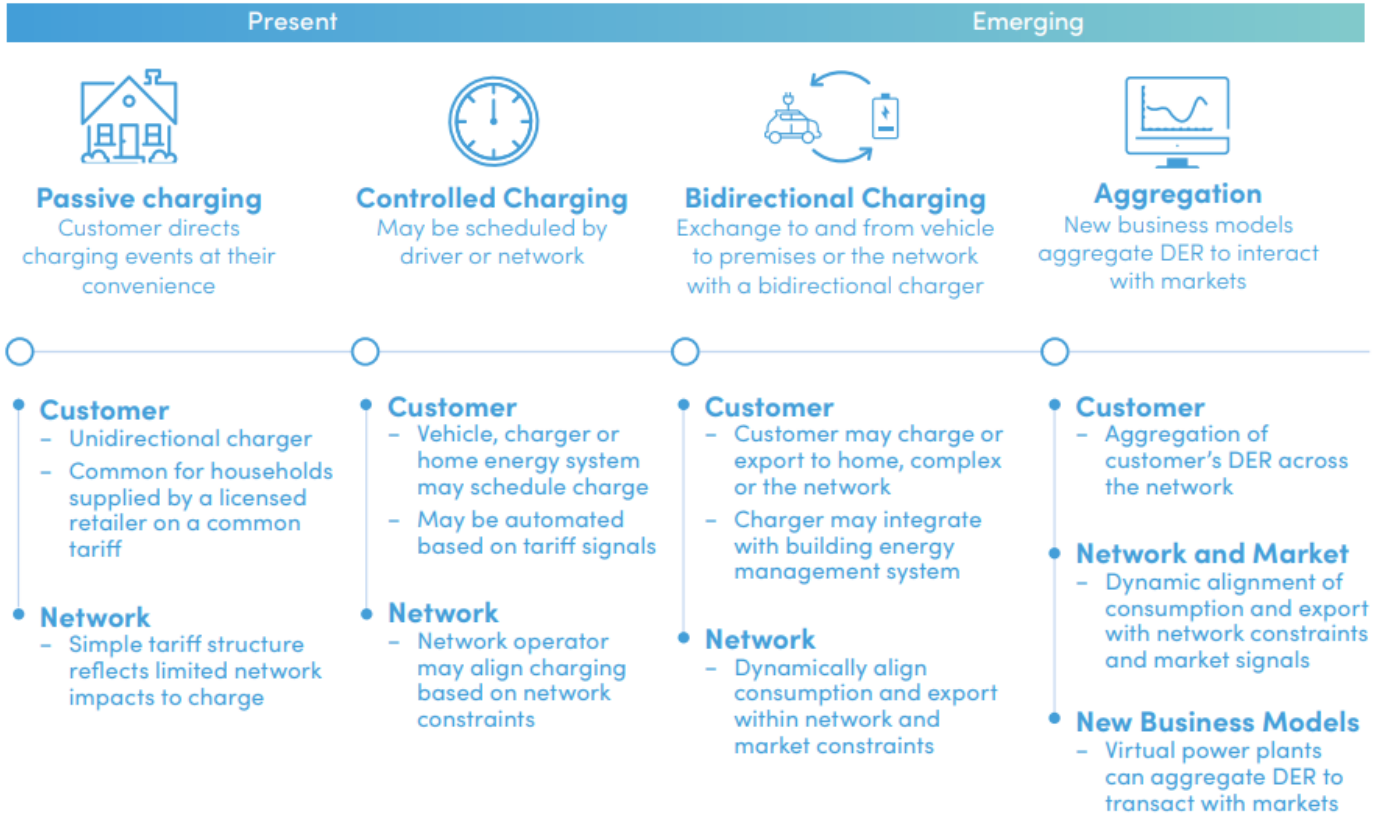
- **Standards are evolving as technology matures**
- **Standards need to reflect WA needs**



# Technology Integration & DER Participation

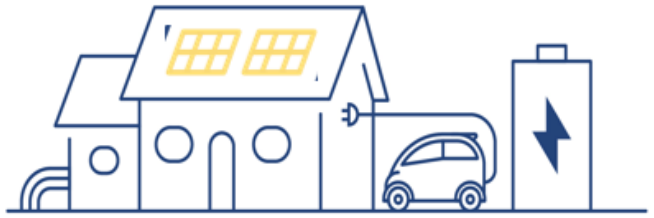
**Technology integration**

- Network management and planning
- EV visibility
- Scenario planning
- Charging infrastructure standards
- Interaction of EVs in microgrid control platforms

**DER participation**

- Orchestration trials

- **Understanding how EVs and other DER assets interact is vital to our future power system**
- **Trials will provide vital information**



Customer **solar, batteries and electric vehicles connect** and support the power system

Customer devices provide value to all

Many devices are coordinated to act as a virtual power plant

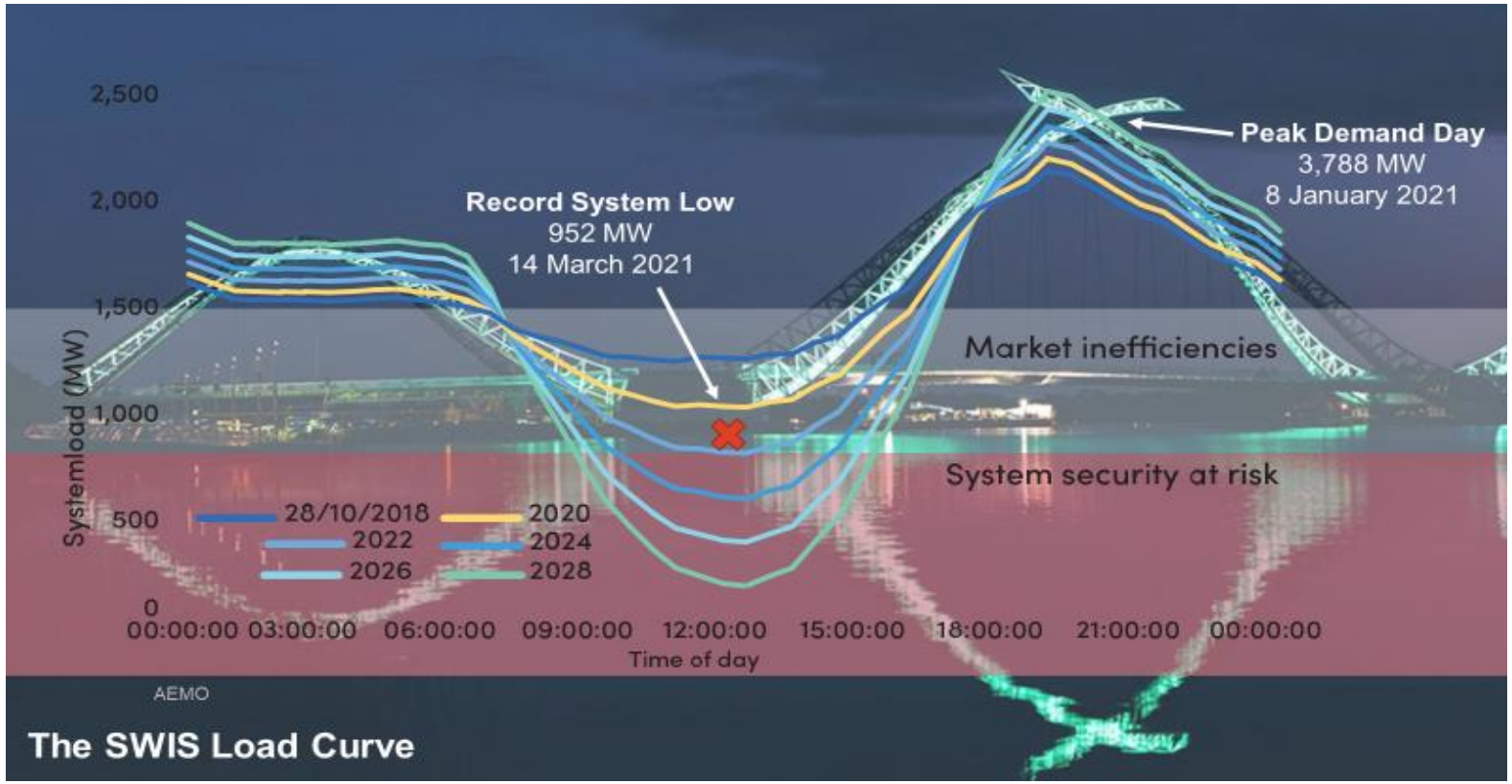
Customer DER can participate in electricity markets and receive incentives

# Tariffs and investment signals

Tariffs and investment signals

- Retail tariffs
- Access process for fast-charge infrastructure

- EVs can help the power system - with proper incentives
- The location of charging infrastructure is important
- Clarity needed to unlock third-party infrastructure investment



# Customers

Customers


## Focus on the Customer journey

- A smooth end-to-end process with info going where needed

## Consumer Protections

- New products, vehicles, charging options and pricing means reconsideration of consumer protections

## How will people will charge EVs?

- Research is needed into how customers will respond to different value propositions

# EV Charging Network

**David Fyfe (Synergy)**

**Nathan Price (Horizon Power)**

# Western Australia Electric Vehicle Fast Charging Network

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# Introduction

- The State Government's Electric Vehicle (EV) Strategy was developed by the Department of Water and Environmental Regulation (DWER). One of the actions was investment in EV fast-charging infrastructure.
- On 17 August 2021, the WA State Government announced Australia's longest EV Highway as part of the McGowan Government's $21 million Electric Vehicle Fund.
- The project aims to deliver a network of EV fast charging stations to facilitate travel north from Perth to Kununurra, along the south-west coast to Esperance and east to Kalgoorlie.
- Includes charging stations across 45 locations.
- The project will be progressively rolled out and plans to be fully operational by 2024.

# Project Objectives

- Deliver on the State Government's commitment to investment in charging infrastructure.
- Raise awareness and stimulate the uptake of EVs in Western Australia.
- Stimulate business activity.
- Deliver a seamless and enjoyable customer experience by ensuring:
  - Reliability of charging facilities
  - User-friendly billing platform
  - Availability of real-time information

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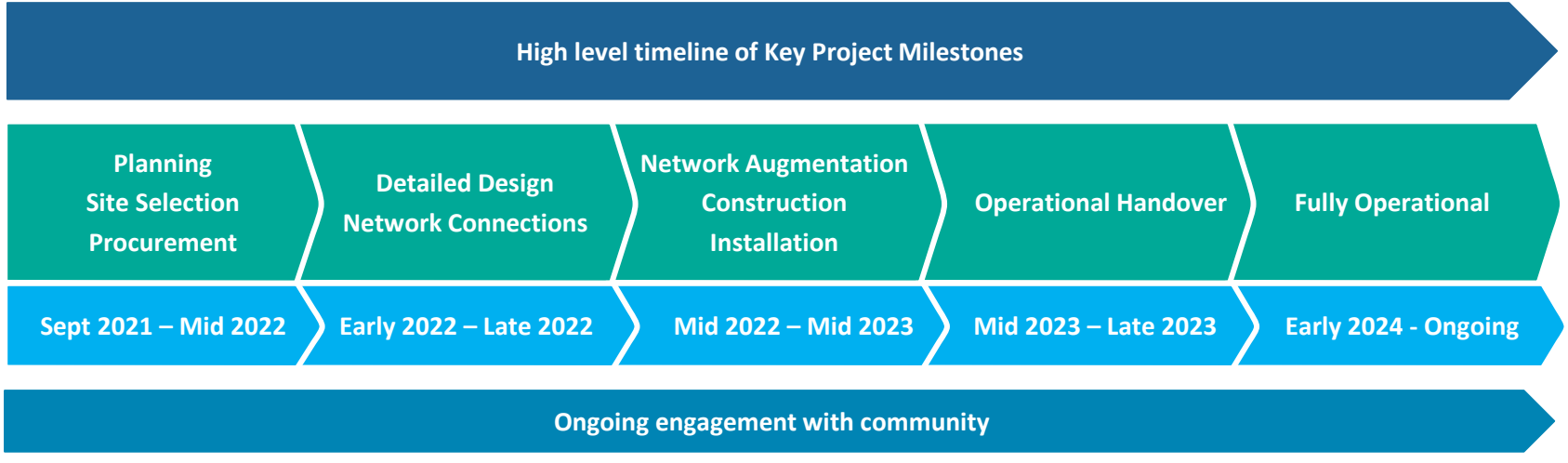
# High Level Timeline

Project plans, processes and timelines are currently under development. A high-level timeline for key project milestones is outlined below:

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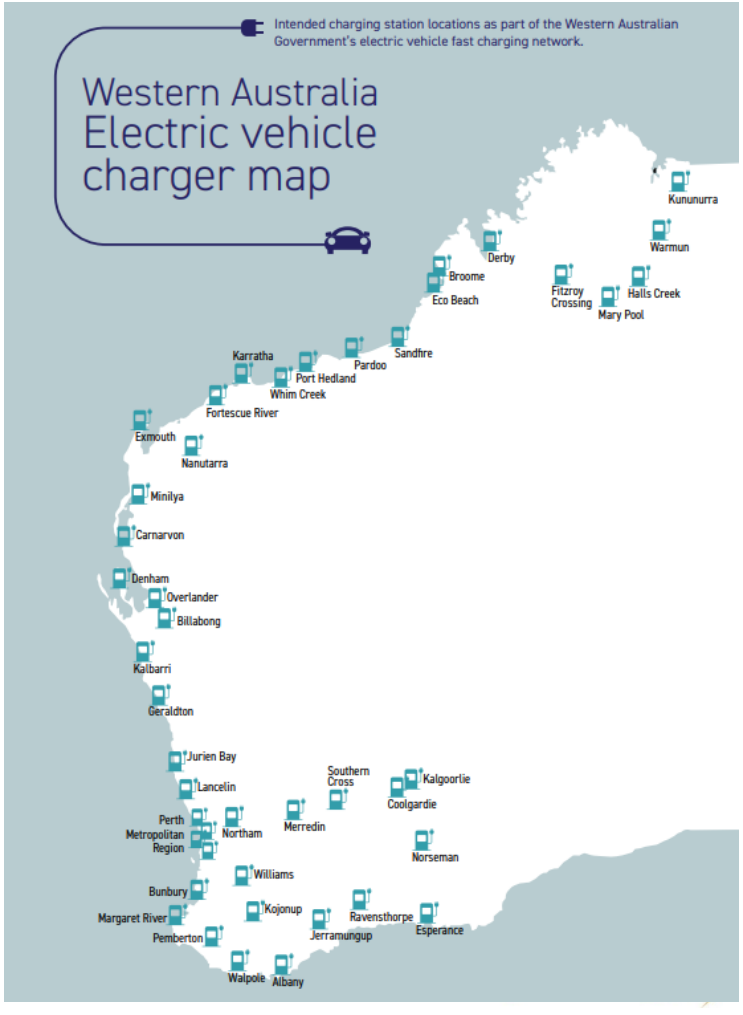
# Locations

- The locations that have been identified for the installation of fast chargers have been developed based on the findings of the Electric Vehicle Infrastructure Strategic Planning Report.
- The locations are approximately 200km or less apart to support regional travel.
- The Utilities will consider a range of sites as they undertake a thorough process of engagement and consultation.



# Charging Sites


Site selection will aim to ensure users have a comfortable and enjoyable experience while charging their EV.

It will consider:

- Situating chargers clear of traffic hazards
- Adequate security and lighting
- Suitable parking arrangement
- Proximity to amenities such as public restrooms, cafes/restaurants
- Proximity to retail businesses, information centres, areas of local or cultural significance and park/nature reserves

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# Charging Stations

Key information on charging stations:

- A minimum of two chargers will be available at each site to provide redundancy and support growing demand for EV charging;
- At least one unit will be a DC fast charger of 50kW or more;
- DC chargers will be equipped with two charging cables and the ability to charge two cars at once; and
- There is a minimum of two parking bays dedicated to EV charging with additional parking bays available for spill over.


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# Questions?

**Get the EV Action Plan:**

**www.brighterenergyfuture.wa.gov.au**

**Get In Touch:**

**energytransformation@energy.wa.gov.au**

**For copies of the EV Action Plan:** https://www.brighterenergyfuture.wa.gov.au/

**Get In Touch:** energytransformation@energy.wa.gov.au

We're working for Western Australia.