eStart

sgfleet Zero Emission Vehicle Journeys

October 2019

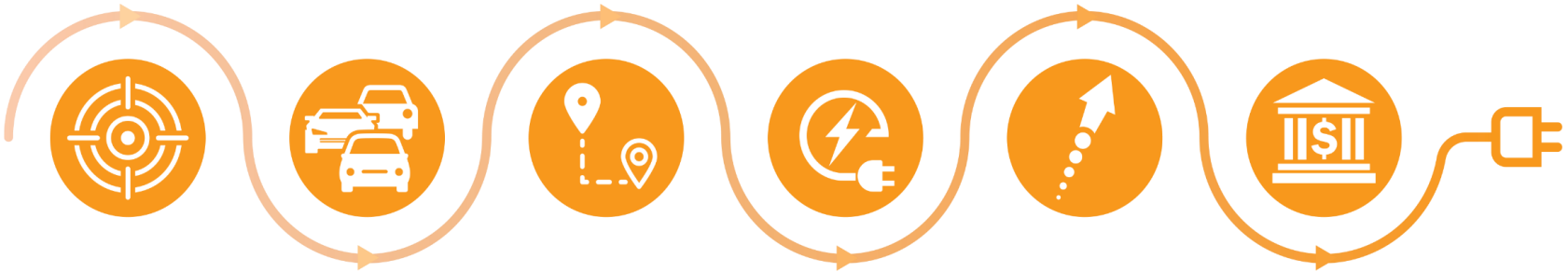
sgfleet

Outline of the *sgfleet* emission reduction strategy

- What do we want to achieve?
- Reduce our 'actual' CO_2 emissions from 216 to 150 gm/km by 2020
- Integrate electric, fuel cell and hybrid vehicles into our own 45 vehicle corporate 'tool of trade' fleet
- Support staff to use electric vehicles by installing charging infrastructure at ***sg****fleet* premises
- Support electric vehicle uptake by customers by demonstrating our emission reduction journey and helping them do the same

- Why are you doing this?
- To lead by example and pass his experience on
- To reduce our emissions and make an environmental difference
- Reduce fuel costs (estimated $207 k across the 36 suitable vehicles)
- Reduce servicing costs

eStart solution overview



Customer goals

- Preparation for ZEVs
- Reduction in CO_2 emissions
- Reduction in fuel costs
- Reduction in maintenance costs
- Reputational/ green credentials

Vehicle mix

- Current fleet (against goals)
- Vehicle usage patterns (locations, frequency, distance travelled)
- Vehicles unsuitable for ZEVs
- Future fleet make-up

Site selection

- Vehicle location
- Travel patterns
- Best charging point
- Ideal charging time

Site capability

- Existing electrical infrastructure
- Proposed charging locations
- Building situation: own, rent etc.

Transition plan

- Existing lease end dates
- Availability of ZEVs
- Site enablement plan
- Possible lease extensions

Funding support

- Paid for outright (via ***sg****fleet*)
- Funded via own mechanisms
- Leased/funded through ***sg****fleet*

sgfleet current ZEVs in the 'tool of trade' fleet October 2019

- Hyundai Ioniq
- 230km indicative driving range
- 2 x Anita McMullen, James Maher

- Hyundai Kona
- 400km indicative driving range
- 2 x Dean Acheson, Tracey Green

- Nissan LEAF
- 270km indicative driving range
- 1 x Stephen Finch

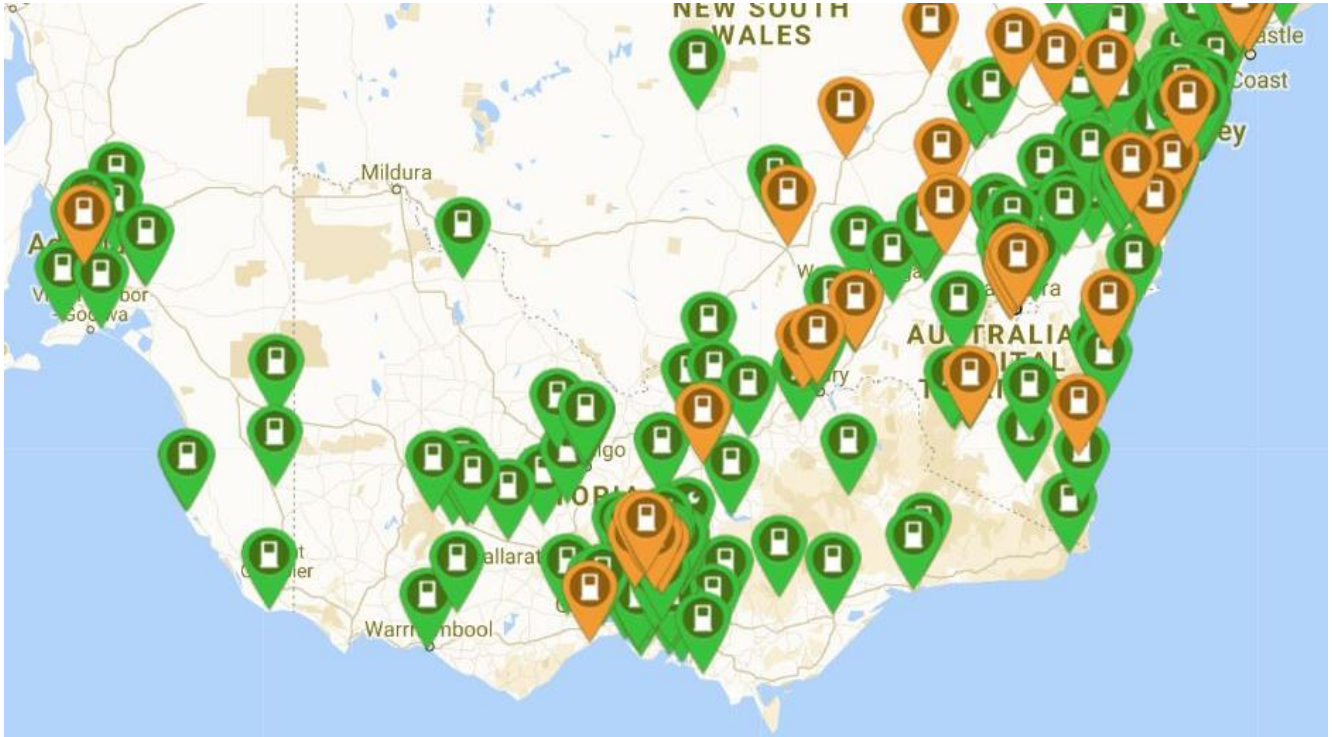
The Journey

To gain a full understanding of how EVs performed under Australian conditions, we decided to drive 2 of our Tool of Trade vehicles to this Conference

- Hyundai Kona (EV range 440 km) from Canberra
- Nissan Leaf (EV range 270 km) from Sydney
- Both vehicles were replacements for Hyundai i40s
- Both vehicles are here today

The Journey: Current Infrastructure

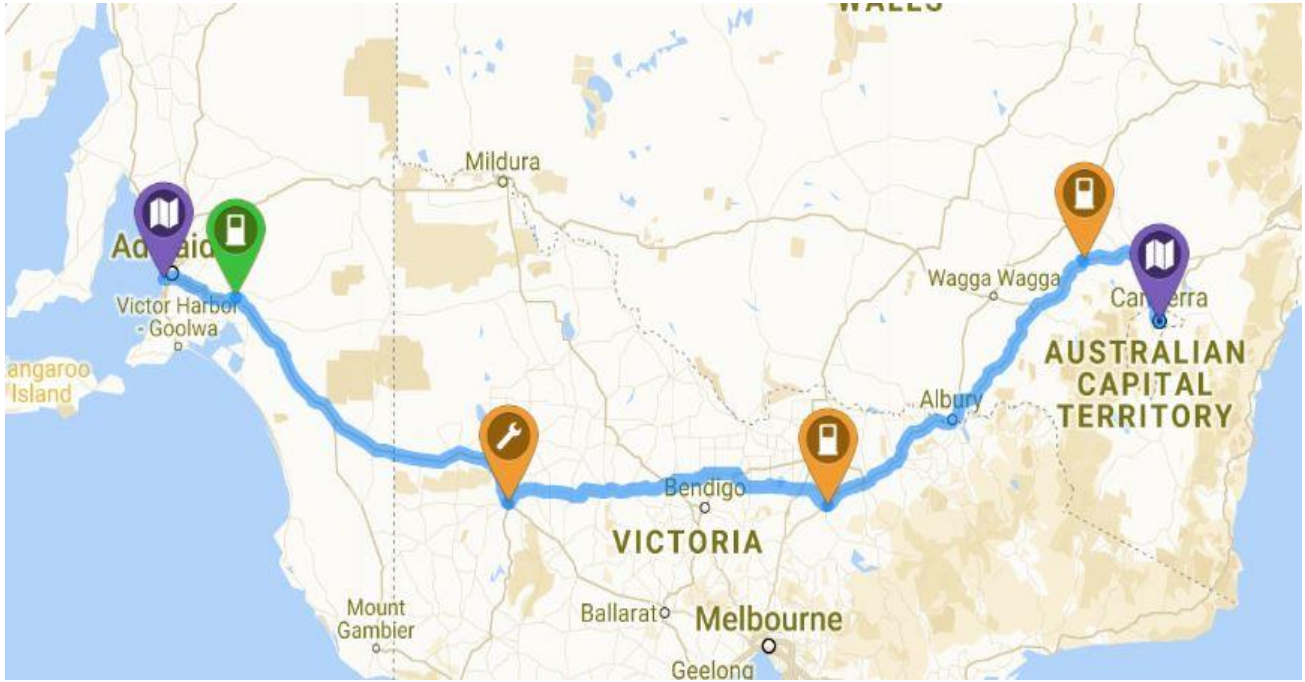
- Current EV charging infrastructure from PlugShare
- No fast chargers beyond Narrandera
- Large charging station free zone



The journeys would need significant planning

The Journey : Hyundai Kona

- Distance 1290 km
- Kona's range required 4 fast charges over 2 days
- 125 km needed to be added over the most direct route



The Journey : Hyundai Kona

Comparison with a Tool of Trade diesel sedan

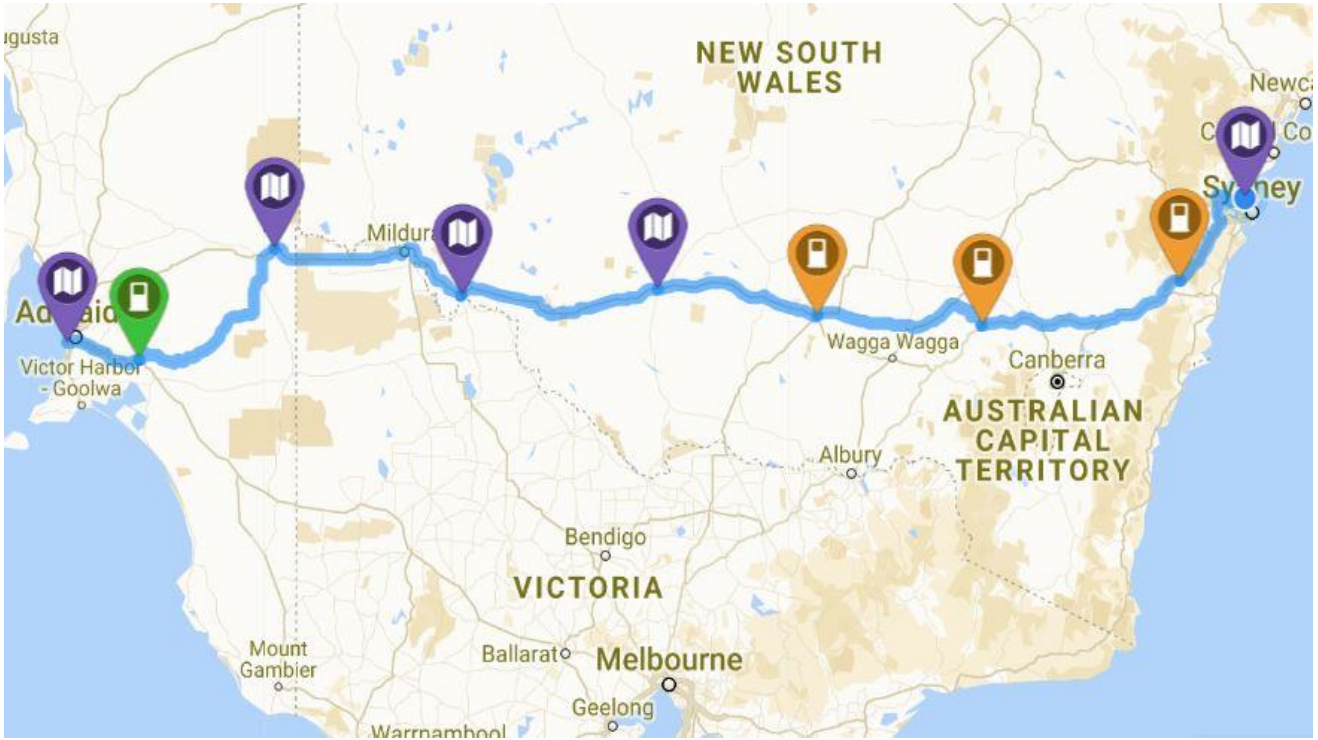
- Canberra to Adelaide
- 1290km
- EV range 440 km
- 4 charging stops
- 2 days travel time

	i40 (diesel)	Kona (EV)
Distance	1165 km	1290 km
Range to empty	1000 km	440 km
Driving spec	5.1 l/100 km	16.0 kwh/100km
Estimated fuel cost	$87 (7.3c/km)	$51 (4.0 c/km)
Estimated tailpipe emissions	156 kg *	Nil

* 134 g/km CO2

The Journey: Nissan Leaf

- Distance 1452 km
- Leaf range required for 4 fast charges and 3 overnight slow charges over 4 days
- There was significantly more planning required
- 52 km longer than the most direct route



The Journey : Nissan Leaf

Comparison with a Tool of Trade diesel sedan

- Sydney to Adelaide
- 1452 km
- EV Range 270 km
- 7 charging stops
- 4 days travel time

	i40 (diesel)	Nissan Leaf (EV)
Distance	1401 km	1452 km
Range to empty	1000 km	270 km
Driving spec	5.1 l/100 km	16.4 kwh/100km
Estimated fuel cost	$101 (7.3c/km)	$48 (3.3c/km)
Estimated tailpipe emissions	194 kg *	Nil

* 134 g/km CO2

What we learnt

- Fast chargers in Hay and Mildura due late October 2019 will reduced the Leaf journey by 2 days
- Reinforced the importance of vehicle selection based on purpose.
- Driving conditions have a noticeable effect on range over long distances i.e. wind, road surface, rain
- Significant savings over fuel costs
- Recharge anxiety is (currently) a real thing in the middle of the Hay plain
- EV infrastructure is coming very quickly
- The EV Journey is already happening


Electric vehicle
fast charger


sgfleet