Home grown success stories driving the sustainability agenda

Andrew Tulloch
Better Place Australia
Electric cars are not new!

Electric cab, New York
1897

First car to reach 100 km/h
1899
The thrill of speed returns in the electric car renaissance

Tesla Roadster, 2011
Significance of electric cars for sustainability

At your home what is the greatest source of emissions?

- Heating & Cooling?
- Appliances?
- Waste?
- Vehicles?
Sources of CO₂ Emissions for a Typical Household

- Vehicles 51%
- Appliances 26%
- Heating and Cooling 18%
- Waste 5%

Source: US Department of Energy
Options for reducing vehicles emissions

CO$_2$e emissions by car type

- **Petrol car (2.4L, 4 cylinder)**: 220 g CO$_2$e/km
- **Hybrid car (2.4L, 4 cylinder)**: 150 g CO$_2$e/km, 22% reduction
- **Electric car (Grid average electricity)**: 100 g CO$_2$e/km, 27% reduction
- **Electric car (100% renewable electricity)**: 0 g CO$_2$e/km, 100% reduction

Source: Green Vehicle Guide (accessed 8 December 2011) and Better Place technical note "How do emissions from a petrol car compare to electric?"
Economic fundamentals

Battery price

US Department of Energy forecast

Petrol price

Historical price

Forecast
Smart charging electric cars supports:

i) electricity load management and

ii) renewable generation

Charging management system optimises grid load

Battery charging can be matched to renewable generation

A single 2MW turbine

2,800 mid-size EVs
Which country will prove the electric car opportunity?
Australia makes sense!

1 million new car sales per annum

High petrol bills

Ubiquitous electricity grid

Two car households

Off street parking

Suburban driving patterns
The Better Place solution – a range of charging options

Home + Work / Public

Battery Switch + One bill
The Australian Approach - Partnerships

- Electricity industry
- Automotive industry
- Technology companies
- Equipment suppliers
- Property owners
- Financiers
- Fleets

Accelerate EV adoption
Grow market share