EVlink Overview

Electric Vehicle Charging Solutions

(for Australia)

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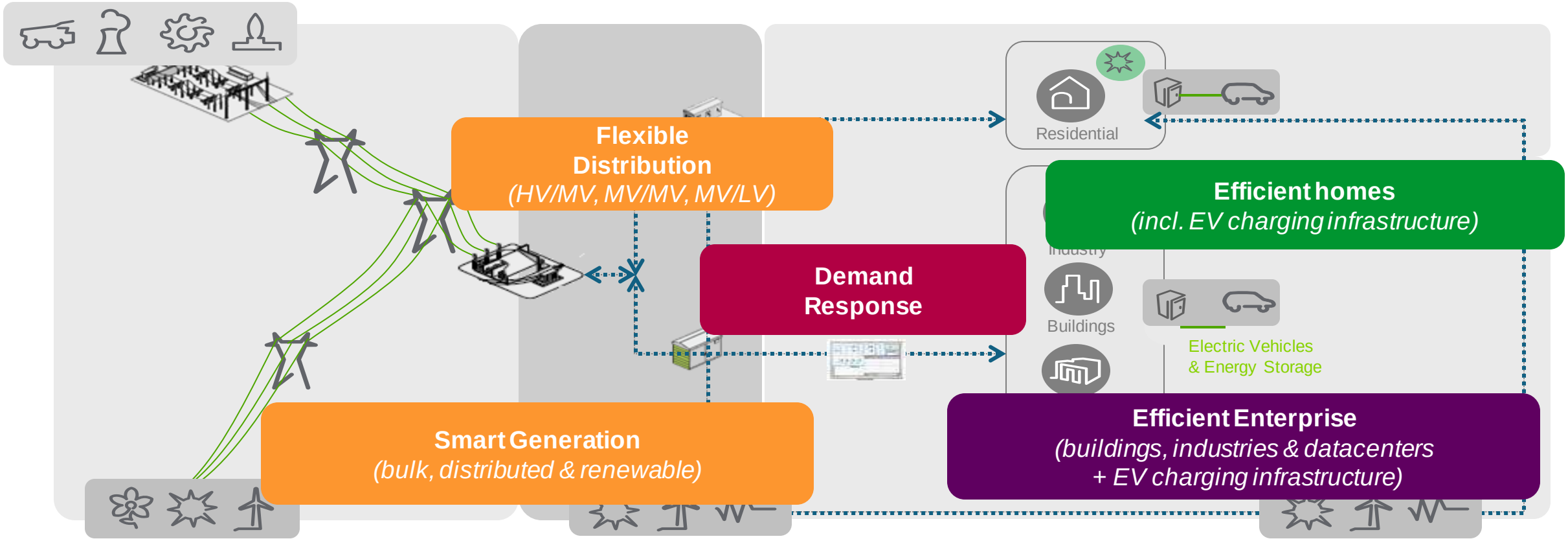
V4.

Schneider Electric

Snapshot...

Five key domains, all connected...



Smarter Demand + **Smarter Supply** + **Demand Response** = **Smart Grid**

EVlink Offer

EVlink Residential

EVlink Wallbox

EVlink Parking

Residential

Commercial/ Fleet

Lafon† Fast Chargers*

Public Infrastructure

EVlink cables + acc.

For Residential, Wallbox & Parking

EV Simulator

For Parking

EVlink Supervision & Monitoring*

For Parking & Fast Chargers

* Upon consultation only – i.e. Project based
† Lafon is a 3rd party partner

Charging mode v/s Safety

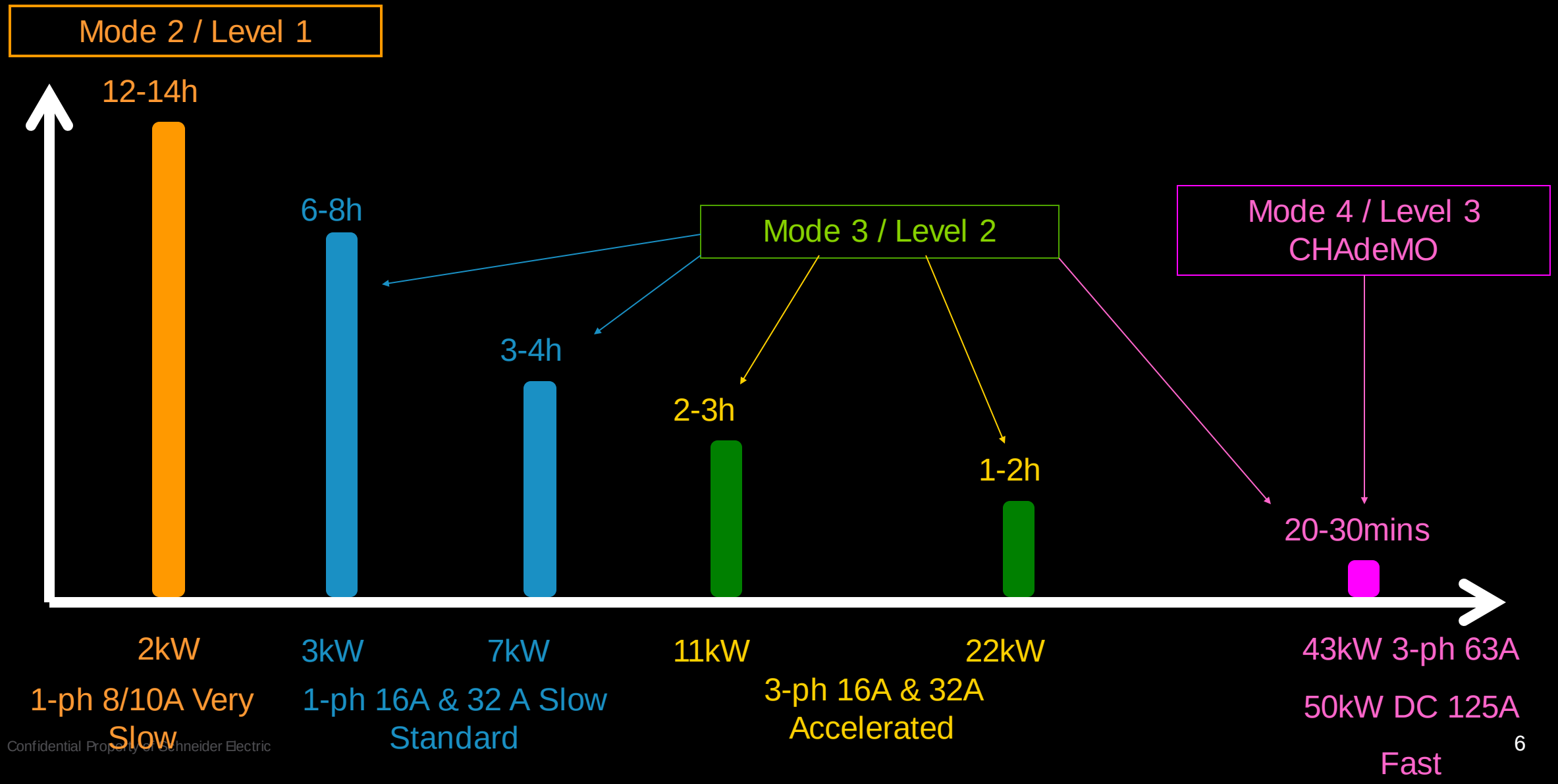
Low

Mode 1

Direct connection
of the vehicle to the grid

- > **Non-dedicated** power socket (domestic socket)
- > **Simple** cable
- > Risk of overheating, prohibited in the United States.

Charging : Time / Power



Mode 1,2 vs Mode 3

Fire and Safety risk

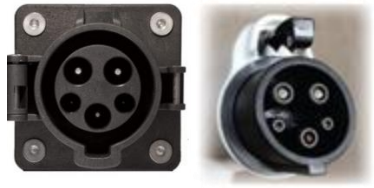
100% Safety

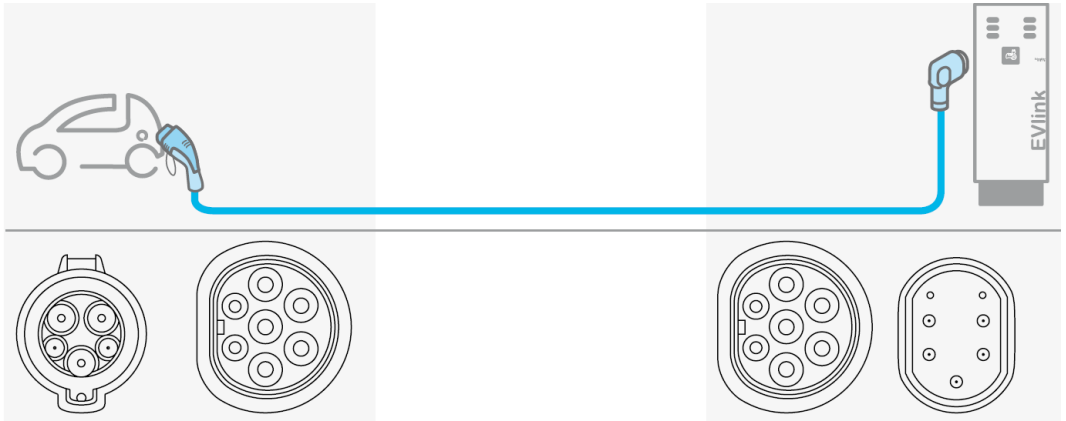
Charging connector v/s Capacity

Type 2 – Mennekes

Type 3

Type 1 – SAE J1772





Manufacturers' data [2]	Type 1	Type 2	Type 2	Type 3
Max. power (single-phase)	3 kW	7 kW		
Max. power (three-phase)	22 kW			
Max. current	32 A			

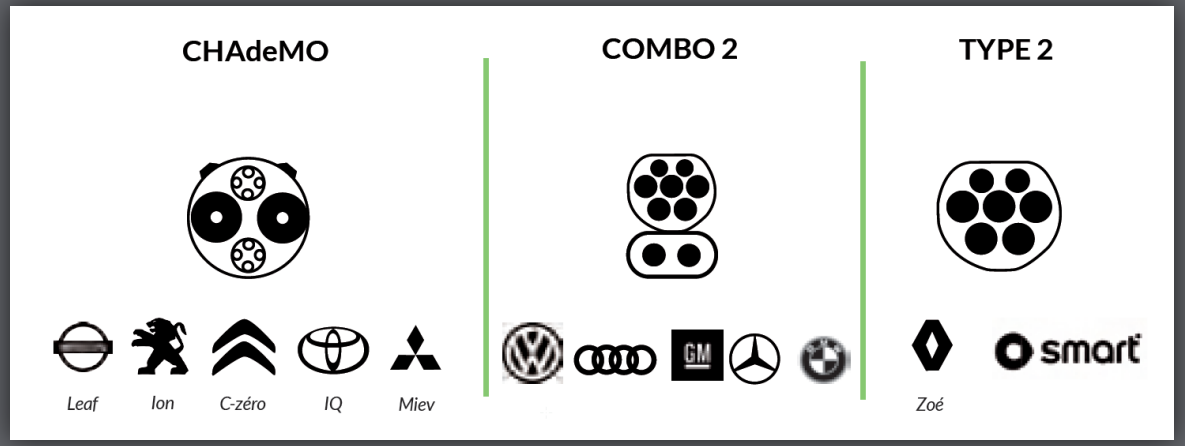
Vehicle charger	Cable / charging mode	Charging point	Effective charging capacity
7 kW	3 kW (mode 2)	Domestic power socket 2 kW	2 kW
7 kW	7 kW (mode 3)	22.1 kW	7 kW

- CHAdeMO
- Level 3 charge (DC)

- Type 1 (J1772)
- Level 1 & 2 charge (AC)

Plug Types & Compatibility

Fast charging – Mode 4 (DC)



Comments:

- Some market drivers threaten the survival of CHAdeMO protocol in the future
- Tesla has its own connector type for fast charging – hence can only charge Tesla cars
- BMW i3 has a single port for either AC or DC charging (J1772 CCS)

Level 2 charging – Mode 3 (AC)

Car manuf. & model	Country	Plug Type
Tesla	US	T2
Nissan Leaf	Japan	T1
Holden Volt	AU (US design)	T1
Mitsubishi Outlander & Miev	Japan	T1
BMW i3	Germany	T2
Renault	France	T3
Peugeot	France	T3

Charger and Supply capacity

Example for a vehicle fitted with a 22 kWh battery and having a touring range of 150 km:

Source used	Domestic power socket	Dedicated AC power socket		Dedicated DC power socket
Power	Single-phase: 2 kW	Single-phase: 7 kW	Three-phase: 22 kW	Three-phase: 43 kW
Time to 'fill up'	 12 h	 5 h	 1h30 min	 30 min
% of charge reached in 30 min	 4%	 10%	 34%	 100%

** Subject to the use of a suitable cable.*

EVlink Offer – Residential & Wallbox

Channel

- Wholesaler
- Contractor

EVlink Residential

Marketing	Socket-outlet or connector type	Power (kW)	Supplied with circuit breaker (1)	Ref.
International	T3	3.7	no	NCA19130
		11	no	NCA19330
With attached cable (2)				
International ex France	T1	3.7	no	NCA11100
	T2	11	no	NCA19310

(1) 30 mA residual current circuit breaker, rating according to charging station power.
(2) Cable holder included.

EVlink Wallbox

Marketing	Socket-outlet or connector type	Power (kW)	Ref.
With socket-outlet			
	T3	3.7	EVH1S3P03
		7.4	EVH1S7P03
With attached cable			
	T1	3.7	EVH1S3P0A
		7.4	EVH1S7P0A
	T2	3.7	EVH1S3P0C
		7.4	EVH1S7P0C

Residential

EVlink Offer – Parking

Channel

- Contractor
- SI

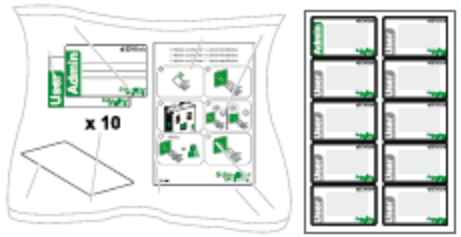
EVlink Parking (floor standing & wall mounted) incl./excl. RFID

Parking

Charging station type	No. of socket-outlet	Socket-outlet type	Power	
			7.4 kW	22.1 kW
Plug & Charge - without RFID reader				
	1	T2	EVF1S7P02	EVF1S22P02
		T3	EVF1S7P03	EVF1S22P03
	2	T2	EVF1S7P22	EVF1S22P22
		T3	EVF1S7P33	EVF1S22P33
With RFID reader				
	1	T2	EVF1S7P02R	EVF1S22P02R
		T3	EVF1S7P03R	EVF1S22P03R
	2	T2	EVF1S7P22R	EVF1S22P22R
		T3	EVF1S7P33R	EVF1S22P33R

Charging station type	No. of socket-outlet	Socket-outlet type	Power	
			7.4 kW	22.1 kW
Plug & Charge - without RFID reader				
	1	T2	EVW1S7P02	EVW1S22P02
		T3	EVW1S7P03	EVW1S22P03
	2	T2	EVW1S7P22	EVW1S22P22
		T3	EVW1S7P33	EVW1S22P33
With RFID reader				
	1	T2	EVW1S7P02R	EVW1S22P02R
		T3	EVW1S7P03R	EVW1S22P03R
	2	T2	EVW1S7P22R	EVW1S22P22R
		T3	EVW1S7P33R	EVW1S22P33R

Pack of 10 RFID badges



Protective cover

EVlink Offer – Fast Chargers & Services

Channel

- Contractor
- End-User

Lafon† Fast Chargers*

Public Infrastructure

EVlink Supervision & Monitoring*

For Parking & Fast Chargers

Offered upon consultation only.

e.g. Tesla Superfast charging network

Electrifying the freeway

Resources available to you...

- Supporting documentations for charging stations
- Product management (15%)
- Technical support
- Consultation services – LV, MV and comms architecture
  - **Important:** IT consultant involvement vital for integrated systems using OCPP capabilities of EVlink stations.
- Project Tendering and Execution team (LoB)
- Global Expertise – system and commissioning (LoB)

https://schneider-electric.box.com/s/4woigc64om2l5u82dy4b

Takeaways... (1)

> 3 charging levels – describing the power level of the charging outlet (level 1, 2 and 3)

> 4 charging modes – Mode 1 & 2 not recommended at all

> 3 plug types available & permitted in AU (T1, T2, T3) + Fast charging

> The market is moving towards T2-plug/connector

> Different car manufacturer = different plug type (refer to Plug overview slide)

> Key competitors in AU


TRITIUM

chargepoint

AV aerovironment

Takeaways... (2)

> Understand the real customer's needs – fast charge may not be the right answer!

> What type of car will the customer charge?

> Installation cost > charging station

> EV market in AU ≈ 2,000 cars

> EV Market leader in AU: Mitsubishi, Nissan leaf. BMW coming strongly.

> It's a slow market.. On the rise..

Make the most of your energy℠

Schneider Electric™

Plug Type-1 SAE J1772

Type-2 IEC 62196