

# **Wireless Power Charging Is Ready for Cars NOW!**



# EV is definitely the future dominating tech

- We are facing environmental challenges globally
- We are facing petrol price challenges globally



☹ Air pollution  
☹ Oil depletion



EV is the ultimate solution

☺ Clean & green  
☺ OpEX saving

# EV Is Economical Efficiency And Expected to Have Potentially Huge Market Prospects

	Mileage per day (km)	Fuel consumption (L/100km)	Power consumption (Kilowatt)	Cost per day (RMB)	Saving per year (RMB)	CO <sub>2</sub> emission reduced (ton)
Traditional Bus	240	27	-	434	-	-
Traditional Car	30	9	-	18	-	-
EV Bus	240	-	240	288	53,290	32
EV Car	30	-	4.5	5.4	4,599	2.1

# Cable Charging as Current Mainstream Is Only Suitable for Operation Mode of "Gas Station"



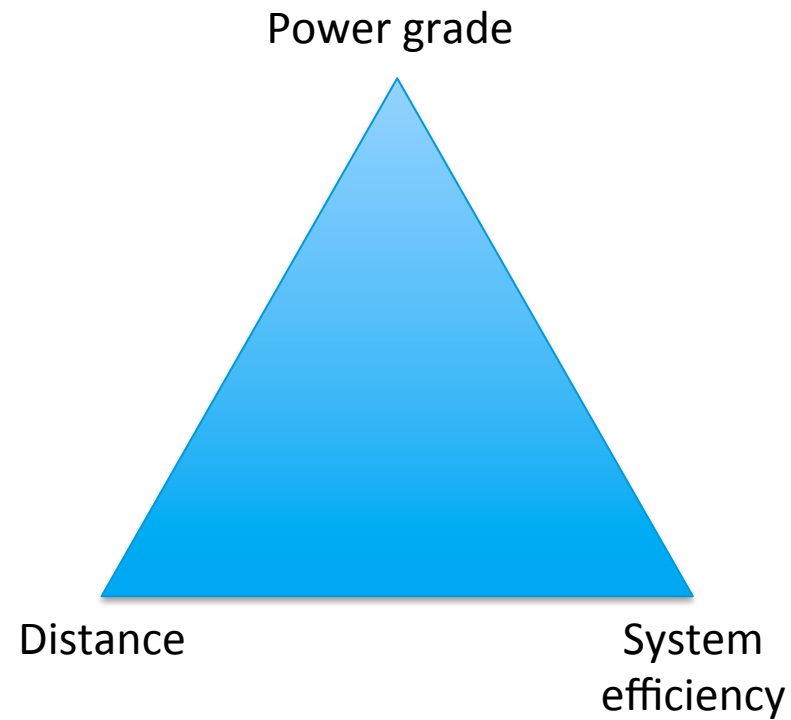
- Manual operation is required, generally only for specialized personnel.
- Although strict design specifications to ensure safety, charging interface is easy to cause electric spark due to impact from high voltage and high current, which will result in device aging.
- Charging interface components are usually exposed to dust, rain, fog, smoke, etc. It is difficult to monitor and maintain the device.
- Damage rate for high power socket is very high from daily experience. The socket in a charging station requires frequently plug-in and plug-out. This will worsen the problem.



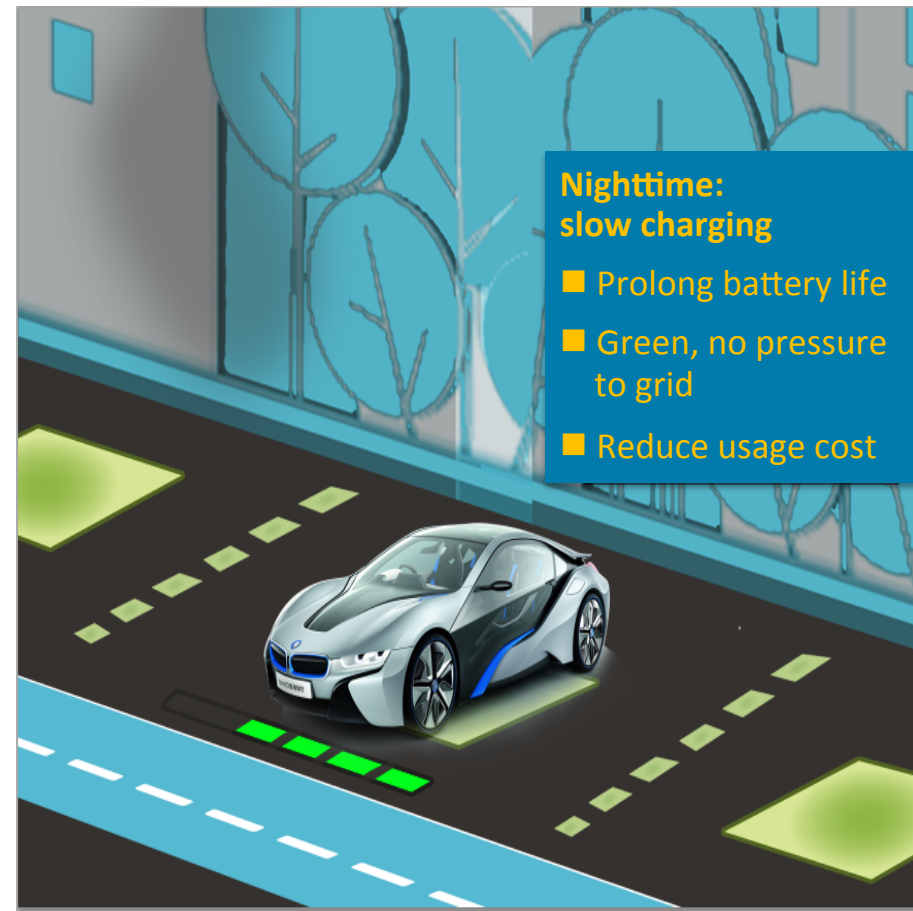
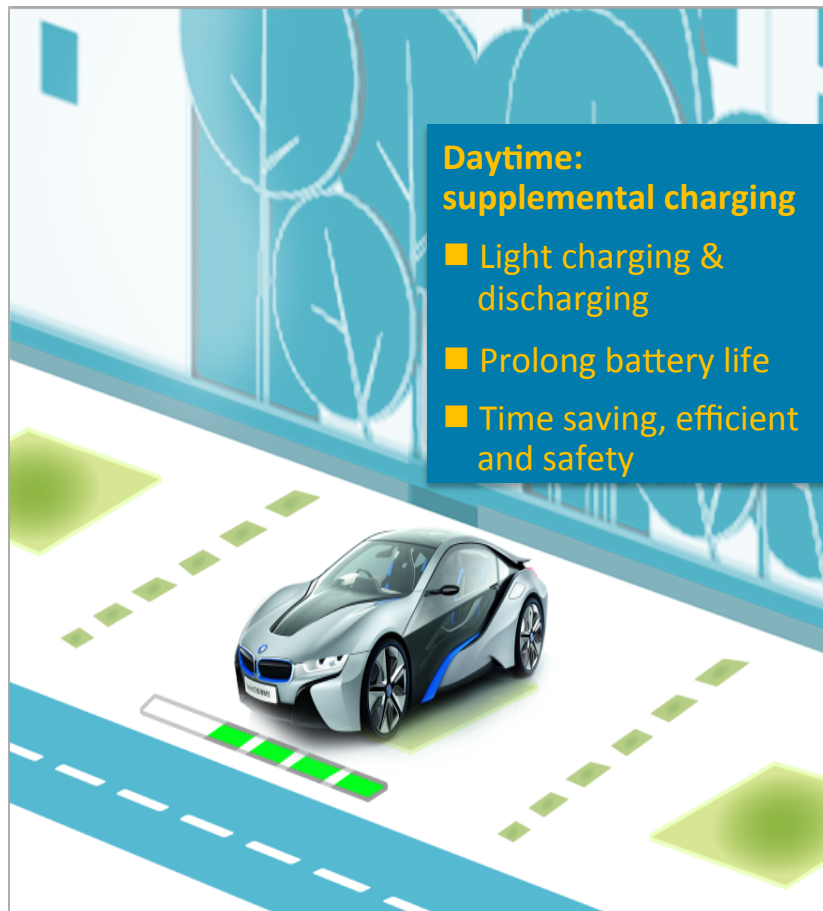
# Cable Charging Exists Inherent Bottleneck for Station Construction and Operation Mode

- Required to build dedicated charging stations and charging poles. Need to occupy urban land. Difficulty for land acquisition.
  - Charging time is long for ordinary EV. Need to occupy a lot of urban land in order to support millions of cars being charged simultaneously
- Fast charging is adopted in cable charging, which will greatly shorten the battery life. The battery cost is the major part of an EV.
  - Appropriate to charge with speed around 0.5c
  - Batteries are designed with relatively high charge and discharge times and are suitable to frequent usage and frequent charging
- Support from the national grid is required to operate high power charging stations. The investment is huge.
  - Power of 250kw is required if to finish charge a 32kwh battery in 10 minutes. Megawatt power supply is required to support only 4 charging poles. Difficult to deployment.

# ZTE leads revolution in wireless power charging



# Wireless Charging Will Greatly Facilitate EV Usage



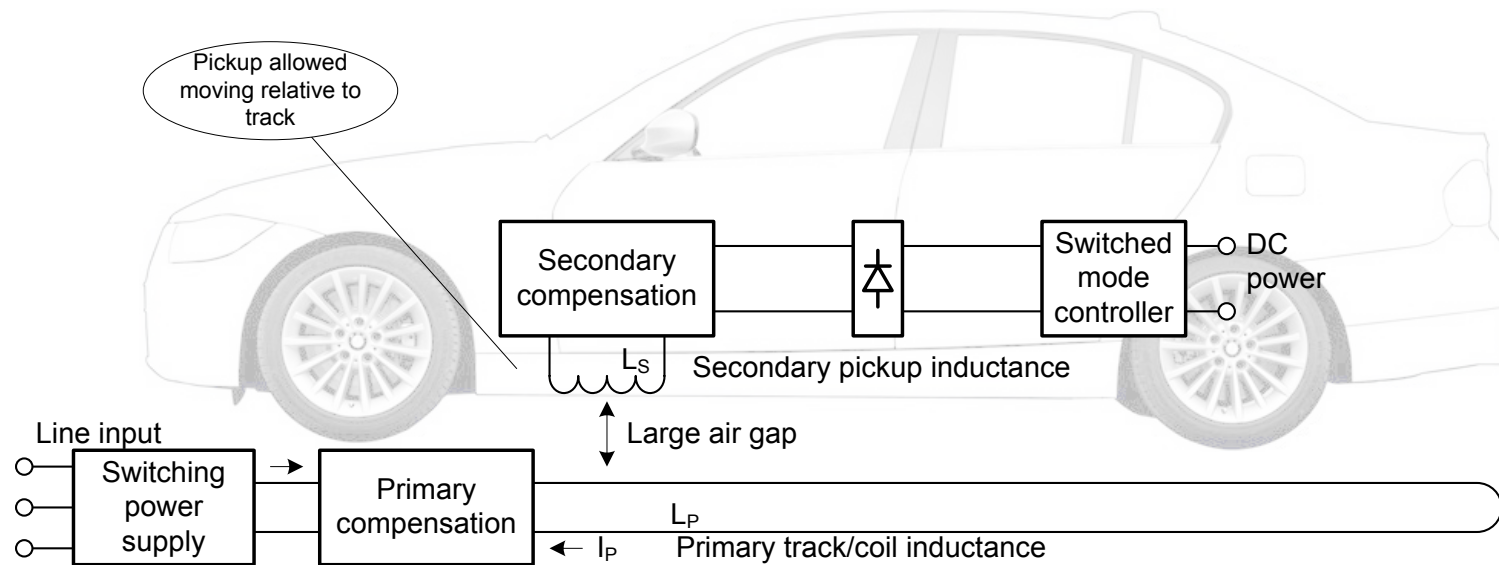


# Wireless Charging Will Greatly Facilitate EV Usage

- Unattended, without manual operation but fully automatic operation, safe and reliable
- Frequent usage and frequent charging, so as to prolong the battery life and sustain the vehicle value even after a long term usage
- Charging with medium power charging, small pressure on the grid
- Strong ability to adapt to environment and bad weather. Convenient to popularize and install charging devices in parking lot and garage



# Substantial Progress of Wireless Charging Made in EV Industry



- EV wireless charging system includes power supply, power transmitter, power receiver, controller, battery, etc.
- ZTE USA group recently finished the validation testing of core techniques for EV wireless charging. Ready for industrialization and standardization.
- Globally the technique validation is also performed in US, Japan and Korea based on independent requirement. Part of the achievement has been industrialized.

# ZTE Wireless Charging System Platform - Major Metrics

1

• DC input voltage  $V_{dc}=400V$

2

• Output voltage  $V_o=580-630V$

3

• Output power  $P_o=5kW$

4

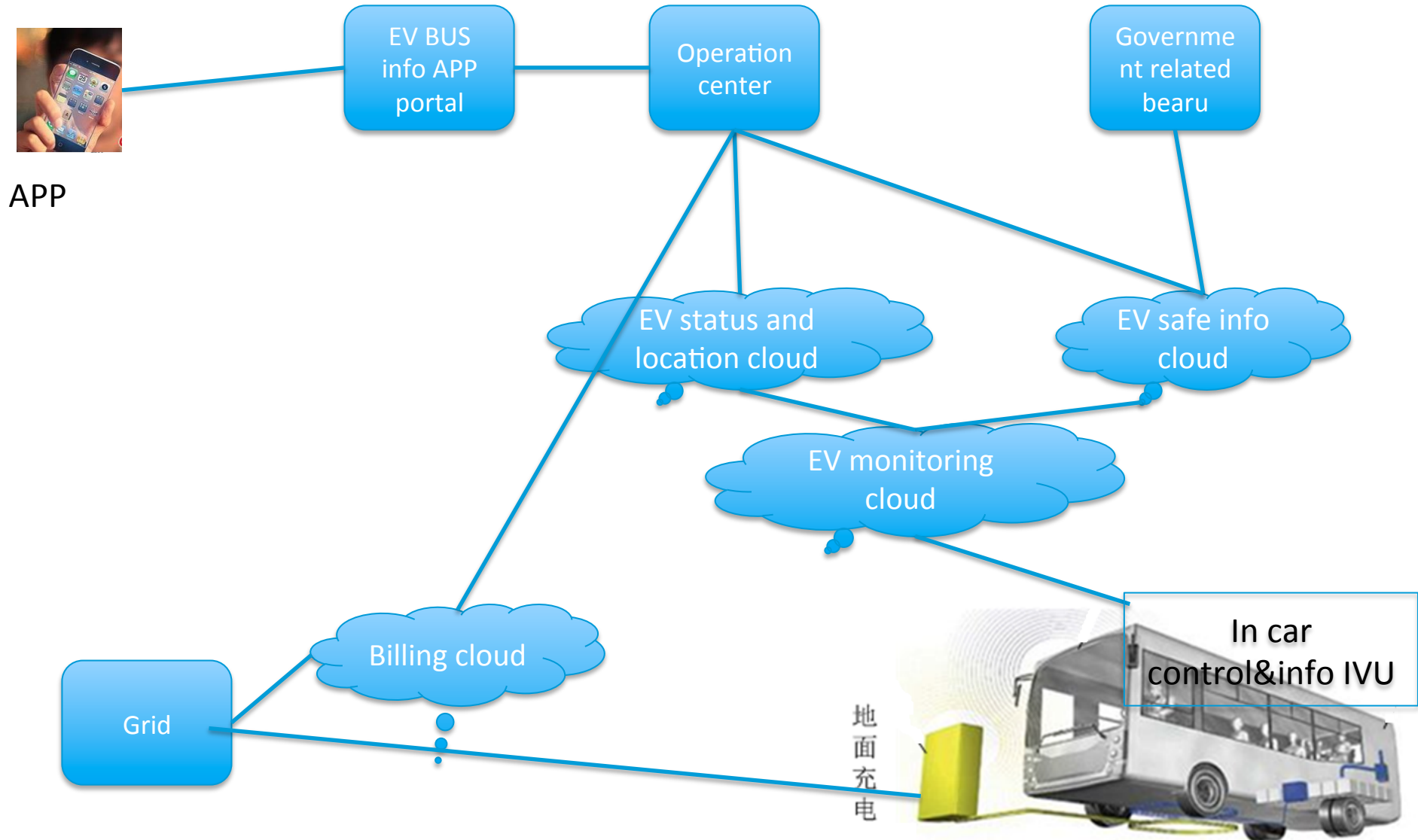
• Transmission distance: 20CM

5

• System efficiency :  $\eta>0.9$



# Overview of EV BUS operation



  
*Bringing you Closer*

**Thank you**