



国家电网公司  
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# ChaoJi's Standardization and Pilot Project A Brief Introduction

NARI Group Corporation

2023.05



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**Standardization progress**

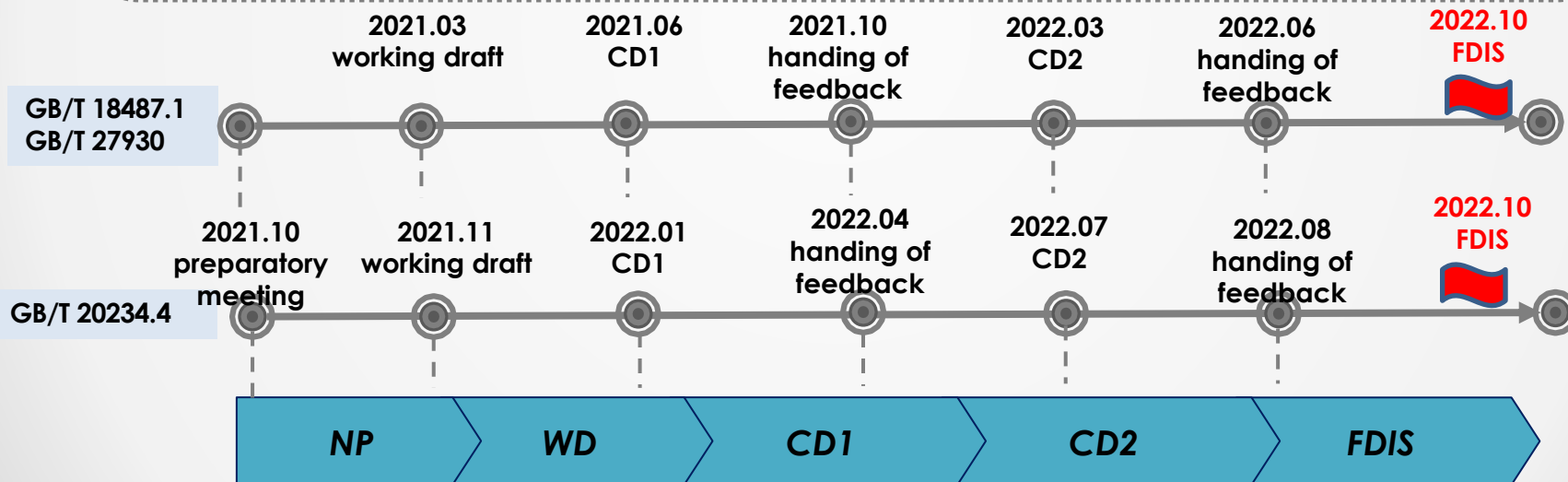
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**Pilot Projects**



# National standards

- GB/T 18487.1 Electric Vehicle Conductive Charging System - Part 1: General Requirements
- GB/T 27930 Digital communication protocols between off-board conductive charger and electric vehicle
- GB/T 20234.4 Connection set of conductive charging for electric vehicles - Part 4: High power DC charging coupler





## International Electrotechnical Commission

### TC69

- ahG17( Interoperability and safety issues of using charging adapters between different DC charging systems ): prepare a TR for backward compatibility between system D and AA/BB
- MT5( Maintenance of IEC 61851-23 and IEC 61851-24 ): will propose system D in 61851-23 ED3
- WG12( Electric Vehicles conductive power/energy transfer system ): Propose Adapter

### SC23H

- Published IEC PAS 63454 for configuration GG
- Add configuration GG in 62196-3
- Add Configuration JJ to IEC TS 63379

Communication: Unified protocol is still pending



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Pilot Projects

## ChaoJi demonstration charging stations along the Beijing-Shanghai Highway

- State Grid Corporation of China has built 7 DC charging facilities on the high-speed highway from Beijing to Shanghai in 2022. The average distance between each facility is about 200 kilometers. In addition to the conventional charging interface (SYSTEM B) that meets the Chinese national standard version of 2015, each facility is equipped with the latest ChaoJi charging interface charger developed by State Grid Corporation of China, which supports a maximum output of 500A, a highest voltage of 1000V and a maximum output power of 480kW. China Electricity Council and State Grid Corporation of China welcome charging infrastructure and automobile companies from all over the world to participate in the Beijing-Shanghai highway ChaoJi demonstration project.



# Pilot Project - Beijing



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## The ChaoJi Charging Demonstration Station of State Grid Beijing Yizhuang Power Supply Company

Total charging power: 360kW

Number of GB/T 2015 coupler: 4

Number of ChaoJi coupler: 1

Number of parking spaces: 4



**Maximum charging power:** 360kW

**Maximum output voltage:** 1000V

**Maximum output current:** 500A



**Maximum charging power:** 120kW

**Maximum output voltage:** 1000V

**Maximum output current:** 250A



**Completion date:** expected to be completed by the end of 2023.

**Location:** Beijing Economic and Technological Development Area. 7



# Pilot Project - Tianjin



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## The Chaoji Charging Demonstration Station at SICUN Service Area, Beijing-Shanghai Expressway

Total charging power: 480kW

Number of GB/T 2015 coupler: 7

Number of ChaoJi coupler: 1

Number of parking spaces: 8



**Maximum charging power:** 900kW

**Maximum output voltage:** 1500V

**Maximum output current:** 600A



**Maximum charging power:** 120kW

**Maximum output voltage:** 1000V

**Maximum output current:** 250A



**Completion date:** November 2, 2022

**Location:** Sicun Service Area (Beijing-bound), Wuqing District, Beijing-Shanghai Expressway



# Pilot Project - HeBei Province

## The ChaoJi Charging Demonstration Station at Qingxian Service Area

Total charging power: 360kW

Number of GB/T 2015 coupler: 4

Number of ChaoJi coupler: 1

Number of parking spaces: 4



**Maximum charging power:** 360kW

**Maximum output voltage:** 1000V

**Maximum output current:** 500A



**Maximum charging power:** 160kW

**Maximum output voltage:** 1000V

**Maximum output current:** 250A



**Completion date:** April 19, 2022

**Location:** Qingxian Service Area (Beijing-bound), Beijing-Shanghai Expressway

# Pilot Project - ShanDong Province



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## The ChaoJi Charging Demonstration Station in Dezhou

Total charging power: 960kW

Number of GB/T 2015 coupler: 8

Number of ChaoJi coupler: 1

Number of parking spaces: 8



**Maximum charging power:** 480kW

**Maximum output voltage:** 1000V

**Maximum output current:** 600A



**Maximum charging power:** 250kW

**Maximum output voltage:** 1000V

**Maximum output current:** 250A



**Completion date:** December 30, 2021

**Location:** Yucheng Service Area (Beijing-bound), Qingyin Expressway



# Pilot Project - ShanDong Province



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## The ChaoJi Charging Demonstration Station in Linyi

Total charging power: 960kW

Number of GB/T 2015 coupler: 8

Number of ChaoJi coupler: 1

Number of parking spaces: 9



**Maximum charging power:** 480kW

**Maximum output voltage:** 1000V

**Maximum output current:** 600A



**Maximum charging power:** 250kW

**Maximum output voltage:** 1000V

**Maximum output current:** 250A



**Completion date:** December 30, 2021

**Location:** Tancheng Service Area (Beijing-bound), Beijing-Shanghai Expressway

# Pilot Project - JiangSu Province

## Jiangsu ChaoJi Charging Demonstration Station.

Total charging power: 480kW

Number of GB/T 2015 coupler: 8

Number of ChaoJi coupler: 1

Number of parking spaces: 8



**Maximum charging power:** 480kW

**Maximum output voltage:** 1000V

**Maximum output current:** 500A



**Maximum charging power:** 120kW

**Maximum output voltage:** 1000V

**Maximum output current:** 250A



**Completion date:** September 1, 2022

**Location:** Xuanbao Service Area, Taizhou City, Jiangsu Province



## EV-AI Intelligent Port ChaoJi Charging Demonstration Station

Total charging power: 720kW

Number of GB/T 2015 coupler: 7

Number of ChaoJi coupler: 1

Number of parking spaces: 22



**Maximum charging power: 360kW**

**Maximum output voltage: 1000V**

**Maximum output current: 1200A**



**Maximum charging power: 60kW**

**Maximum output voltage: 1000V**

**Maximum output current: 250A**



**Completion date:** August 15, 2021

**Location:** Yucheng Service Area (Beijing-bound), Qingyin Expressway



# Joint Commissioning







# ATC pilot projects



# ATC Public EV Super-charging Station



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城市 City	站数 Super-charging station number	超充终端数 Super-charging Terminal number
深圳 Shenzhen	11	30
成都 Shenzhen	3	4
福州 Fuzhou	2	2
厦门 Fuzhou	2	2
上海 Shanghai	1	1
广州 Guangzhou	1	2
南宁 Nanning	1	1
东莞 Dongguan	2	2
肇庆 Zhaoqing	2	3
合计 Total	25	47



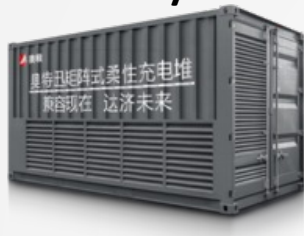


# ATC EV Super-charging Pile



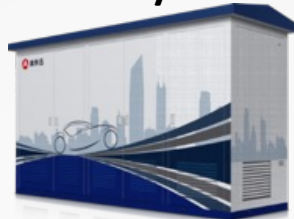
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1000V/1080kW



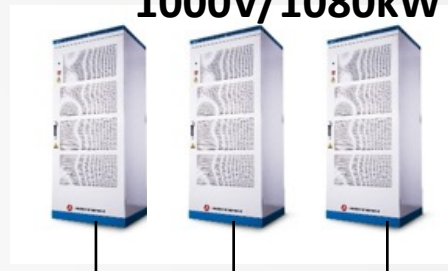
**集中式柔性充电堆**（工业涂装）  
Centralized Super-charging Pile  
（Industrial Painting）

1000V/1080kW



**集中式柔性充电堆**（彩绘涂装）  
Centralized Super-charging Pile  
（Painted painting）

1000V/1080kW



**分布式柔性充电堆**  
Distributed Super-charging Pile

或

或

## 超级充电终端 Super-charging Terminal

车辆插头 EV Connector: ChaoJi & GB2015

最高电压 Max Voltage: 1000V

最大电流 Max Current: 600A

最大功率 Max Power: 600kW



ChaoJi:  
600A

GB2015 with liquid-cooled:  
400A, limited by GB27930-2015

## 充电终端 Charging Terminal

车辆插头 EV Connector:

GB2015

最高电压 Max Voltage: 1000V

最大电流 Max Current: 250A

最大功率 Max Power: 250kW



**Thanks !**