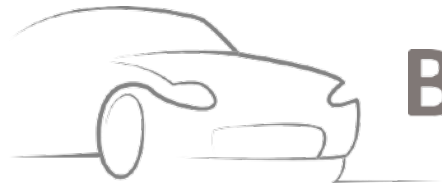


# Electric Vehicle

2021. 8.

**BLE**





# Battery Electric Vehicle





1.1



# QIANTU MOTOR

## K50



### Product features

- ◆ **Lightweight body:** carbon fiber body covering + aluminum alloy tubular frame
- ◆ **Dual motor drive:** good sporty performance
- ◆ **Suspension system:** double wishbone independent suspension
- ◆ **Full 360-degree image**
- ◆ **Electrical door:** auto open and close
- ◆ **The Brembo** fixed pair of four piston calipers provides guaranteed braking performance

Dimension (mm)	4634*2069*1253
Wheelbase(mm)	2650
Curb Weight (kg)	1960
Seat	2
Drive model	Dual motor intelligent timely four-wheel drive
Acceleration 0-100 km/h	≤ 4.6 sec.
Top speed	≥200 km/ h
Endurance Mileage	≥380 km
Charge Time	Rapid charge : (45min,0-80% SOC)
Drive Motor	Permanent magnet synchronous motor
Peak Motor Power (kw)	160*2
Peak Torque (Nm)	290*2
Battery	Lithium battery
Battery capacity	78.9 kWh
Wheel	F: 235/35ZR19 (87Y) R: 265/35ZR19 (94Y)
Braking System	F/R: Disc
F/R Suspension	Double wishbone independent suspension



# 1.2



# ZDRIVE

## GX5



## GC1



## GC2



<b>Dimension (mm)</b>	4150×1800×1611
<b>Wheelbase(mm)</b>	2650
<b>Tires type</b>	215/50 R17
<b>Battery Type</b>	Ternary lithium battery
<b>Motor</b>	Permanent Magnet Synchronous, single
<b>Max Power (kW)</b>	≥90
<b>Max Torque (N·m)</b>	≥280
<b>Top Speed (km/h)</b>	140
<b>Battery Range (km)</b>	338
<b>AC charge time in normal temperature ( 0-100%)</b>	≤7.5h
<b>Fast charge time in normal temperature(30- 80%)</b>	40min

<b>Dimension (mm)</b>	3710x1675x1535
<b>Wheelbase(mm)</b>	2500
<b>Tires type</b>	215/50 R17
<b>Battery Type</b>	Ternary lithium battery
<b>Motor</b>	Permanent Magnet Synchronous, single
<b>Max Power (kW)</b>	≥55
<b>Max Torque (N·m)</b>	≥170
<b>Top Speed (km/h)</b>	120
<b>Battery Range (km)</b>	338
<b>AC charge time in normal temperature( 0-100%)</b>	≤12h
<b>Fast charge time in normal temperature(30- 80%)</b>	60min

<b>Dimension (mm)</b>	3310×1675×1535
<b>Wheelbase(mm)</b>	2100
<b>Seats</b>	2 or 4
<b>Battery Type</b>	Ternary lithium battery
<b>Motor</b>	Permanent Magnet Synchronous, single
<b>Max Power (kW)</b>	≥55
<b>Max Torque (N·m)</b>	≥170
<b>Top Speed (km/h)</b>	120
<b>Battery Range (km)</b>	368
<b>AC charge time in normal temperature( 0-100%)</b>	≤12h
<b>Fast charge time in normal temperature(30- 80%)</b>	60min



1.3



**DONGFENG MOTORS**

Dimension (mm)	4705*1790*1540
Wheelbase (L101, mm):	2700
Curb weight (kg) :	1661
Crew number:	5
Range (km) :	415
Maximum speed (km/h) :	150
Maximum climbing slope :	30%
Motor type :	Permanent magnet synchronous machine
Cooling type:	liquid cooling
Max power (kW/ RPM) :	120
Max torque (N.m/ RPM) :	280
Power type:	Pure electric
AC charge time in normal temperature ( 0-100%)	≤11h
Fast charge time in normal temperature(30-80%)	48min

## S50EV



## M5EV



Model name:	5EV 5 seats	5EV 7 seats	5EV 9 seats
Dimension (mm):	5145×1720×1995		
Wheelbase (mm):	3000		
Curb weight (kg):	1870	1950	1980
Load weight (kg):	550	620	590
Full load mass (kg):	2420	2570	2570
Number of crew:	5	7	9
Front axle/rear axle (full load) (kg):	1020/1400	1080/1490	1060/1510
Maximum speed (km/h):	120		
Maximum grade(%):	20		
60km/h constant speed cruising range (km):	420		
NEDC power consumption per hundred kilometers (kWh/100km):	≤19.5	≤19.8	≤19.9
Motor type:	Permanent magnet synchronous motor		
Cooling type:	Water cooling		
Max power (kW/rpm):	90		
Max torque (N.m/rpm):	300		
AC charge time in normal temperature ( 0-100%)	≤10h		
Fast charge time in normal temperature(30-80%)	1h		



1.4



SAIC MOTOR

## MG EZS



<b>Dimension (mm)</b>	4314x1809x1620
<b>Wheelbase(mm)</b>	2585
<b>Curb Weight (kg)</b>	1518
<b>Seat</b>	5
<b>Endurance Mileage</b>	428 km
<b>Drive Motor</b>	Permanent Magnet Synchronous
<b>Max Motor Power (kw)</b>	110
<b>Max Torque (Nm)</b>	350
<b>Battery</b>	Lithium battery
<b>Battery capacity</b>	44.5 kWh
<b>AC charge time in normal temperature ( 0-100%)</b>	≤6.5h
<b>Fast charge time in normal temperature(30-80%)</b>	30min



1.5



AIWAYS

# U5

## Product features

- ◆ APA automatic parking system
- ◆ 2.8m extra-long wheelbase
- ◆ A+ Excellent Layout
- ◆ Original LCD instrument three fold screen
- ◆ Nearly 1m rear legroom



<b>Dimension (mm)</b>	4680*1865*1700
<b>Wheelbase(mm)</b>	2800
<b>Curb Weight (kg)</b>	1770
<b>Seat</b>	5
<b>Energy recovery system</b>	The Bosch iBooster brake energy recovery system
<b>Acceleration 0-100 km/h</b>	7.6 sec.
<b>Top speed</b>	160 km/ h
<b>Endurance Mileage</b>	405-600 km
<b>Charge Time</b>	Rapid charge : (30min,0-80% SOC)
<b>Drive Motor</b>	Permanent magnet synchronous motor
<b>Peak Motor Power (kw)</b>	150
<b>Peak Torque (Nm)</b>	310
<b>Battery capacity</b>	53-72Wh
<b>Braking System</b>	F/R: Disc
<b>F/R Suspension</b>	McPherson type/multi-link type independent suspension



1.6



# BORGWARD MOTOR

## BXi7

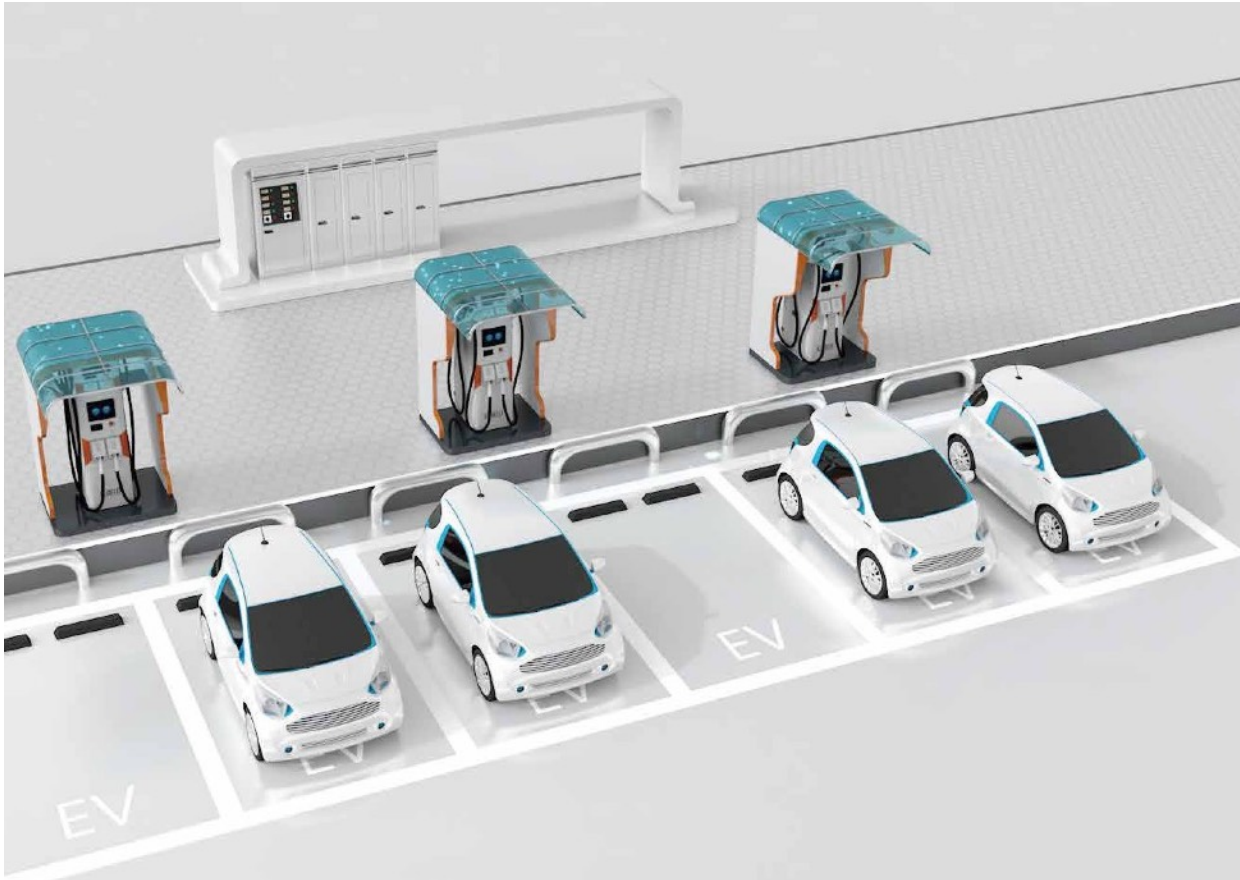


<b>Dimensions (mm)</b>	4713*1923*1690
<b>Wheelbase (mm)</b>	2760
<b>Curb weight (kg)</b>	1950
<b>Luggage capacity (L)</b>	545/1377
<b>Tire specifications</b>	235/60 R18
<b>Drive form</b>	Electric four-wheel drive
<b>Motor type</b>	Permanent magnet synchronous motor
<b>Battery Type</b>	Ternary lithium battery
<b>Power (KW)</b>	178 (front/rear: 89/89)
<b>Maximum torque (N·m)</b>	390
<b>Power consumption (kWh/100km)</b>	16.3
<b>60km/h constant speed cruising range (km)</b>	375
<b>Battery capacity (kWh)</b>	49
<b>Charging time</b>	Slow charge: 8h Fast charge: 30min (80% )
<b>Maximum speed (km/h)</b>	195
<b>Acceleration time 0-100km/h (s)</b>	7.9





# ELECTRIC VEHICLE CHARGERS & SOLUTION





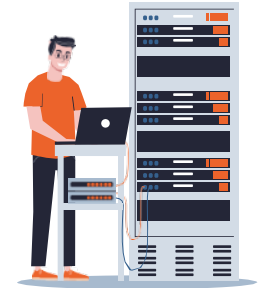
# ELECTRIC VEHICLE CHARGERS & SOLUTION

## • Major Clients and Selling

 <p>Supplied 1,700 Slow-Speed Chargers</p>	 <p>Supplied 100 Units to Korea Land and Housing Corporation</p>	 <p>Supplied 8,400 Units to Businesses Taking Part in Public Charging for Korea Environment Corporation</p>	 <p>Charging service for more than 2,000 Chargers</p>
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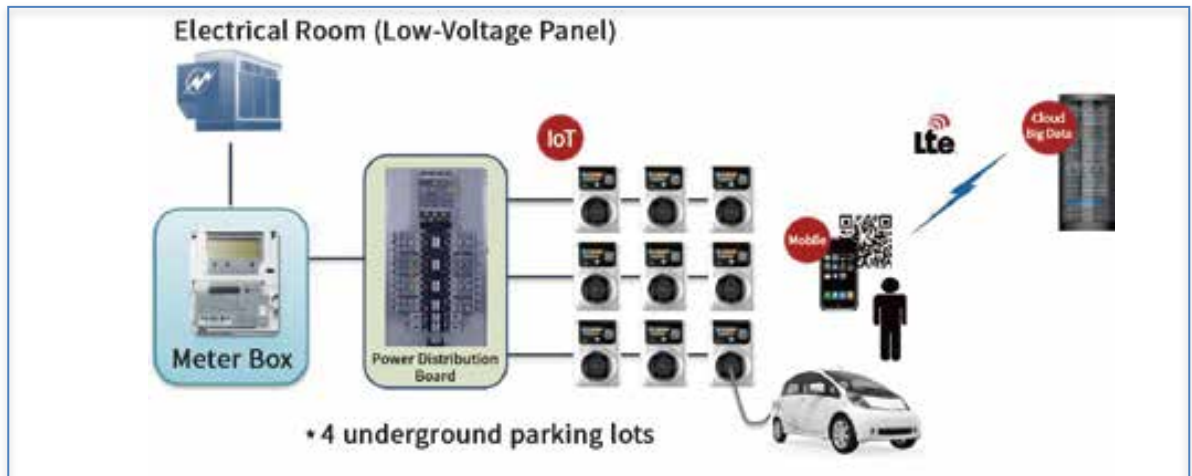
## Service Regions and Network in Korea



- ▶ Maintenance Staff for Each Regional Center
- ▶ Speedy Troubleshooting System
- ▶ The Best Customer Service
- ▶ Call Center Available 24/7

## APT. Multi-charging System(Jeju Test Site)

Increase of EVs by five times due to ease of charging EVs without having to compete for parking space





# ELECTRIC VEHICLE CHARGERS & SOLUTION

## • Slow Chargers (12,000 Sold)

KL10-SD2K 7kW



Public Charger  
Public Sector or  
Private Corporations

KL10-WD2K 7kW



KL60 C-type 7kW



KL60 B-type 7kW



Mini-Size Charger

KL41 BC(LCD) 7kW



Charger Type		Wall-Attached Type (Can Choose Standing Types of KL10-SD2K)	Wall-Attached Type (Can Choose Standing Types)	Wall Attachment Type (Can Choose Standing Type)
Model Name		KL10-WD2K(B Type & C Type)	KL60 (C Type)	KL41-RBC (B-type & C-type)
Input		220V/60Hz	220V/60Hz	220V/60Hz
Output		220V/32A (7kW)	220V/32A (7kW)	220V/32A (7kW)
Operating Conditions	Temperature	20~93%	-20~40°C	-20~40°C
	Humidity	20~93%	20~93%	20~93%
Operation Screen		LCD Touch Screen	LED Display	LCD LCD Touch Screen
User Authentication		1. Cell Phone App Authentication	1. Cell Phone App Authentication	1. Cell Phone App Authentication
		2. RF Card Authentication (Need to register RF card)	2. RFID Card	2. RF Card Authentication (Need to register RF card)
Charge Time		4 hours or less (based on 28kWh battery)	4 hours or less (based on 28kWh battery)	4 hours or less (based on 28kWh battery)
Protection Grade		IP44	IP44	IP44
Size(W×D×H)		297x210x1400(mm), Wall-attachment length 650(mm)	175×250×92(mm)	300×365×174(mm)
Weight		Wall-attachment Type (19kg), standing type (31kg)	3.6Kg	9Kg
Certification		KC-Certification, Electromagnetic Wave Certification	KC-Certification, Electromagnetic Wave Certification	KC-Certification, Electromagnetic Wave Certification
Connector		5 pin Connector (5m-long cable) + charging socket	J1772 5pin Cable	5 pin Connector (5m-long cable) + charging socket
Characteristics		<ul style="list-style-type: none"> <li>• Easy to use</li> <li>• Bright LCD with responsive touch panel</li> <li>• Show information on charging                             <ul style="list-style-type: none"> <li>- Amount of charging electricity</li> <li>- Charging time</li> </ul> </li> <li>• Automatic detects charging connector B/C type</li> <li>• Low electricity consumption during waiting time</li> <li>• Applicable for all cars(type B/C)</li> </ul>	<ul style="list-style-type: none"> <li>• Shows condition of connection of charging cable</li> <li>• Show information on charging                             <ul style="list-style-type: none"> <li>- Amount of charging electricity</li> <li>- Charging time</li> </ul> </li> <li>• Automatic detects charging connector B/C type</li> <li>• Low electricity consumption during waiting time</li> <li>• Applicable for all cars(type B/C)</li> </ul>	<ul style="list-style-type: none"> <li>• Bright LCD with responsive touch panel</li> <li>• Show information on charging                             <ul style="list-style-type: none"> <li>- Amount of charging electricity</li> <li>- Charging time</li> </ul> </li> <li>• Automatic detects charging connector B/C type</li> <li>• Low electricity consumption during waiting time</li> <li>• Applicable for all cars(type B/C)</li> </ul>



# ELECTRIC VEHICLE CHARGERS & SOLUTION

◆ Socket Outlet : 220V socket / 5-Pin(basic) / 7-Pin ◆ Cable Length : 5m(basic) / 7m / 10m

KL411C-BC(IC CARD) 7kW



IC Card Payment Charger

KL4214-BCC-IC (IC CARD) 14kW



Two 7kW Charging Cables (14kW)

KL4214-BCC 14kW



KL40-BC 7kW



8,000 devices provided to Korea national Environment Corporation

Wall Attachment Type (Can Choose Standing Type)	Wall Attachment Type (Can Choose Standing Type)	Wall Attachment Type (Can Choose Standing Type)
KL41C-BC (B-type & C-type)	KL 4214-BCC-IC (B-type & C+ C type) 14kW	KL 4214-BCC-IC (B-type & C+ C type) 14kW
220V/60Hz	220V/60Hz 14kW	220V/60Hz 14kW
220V/32A (7kW)	32A (7kW) / 32A (7kW)	32A(7KW) + 32A(7KW)
-20~40°C	-20~40°C	-20~40°C
20~93%	20~93%	20~93%
LCD Touch Screen	LCD Display (2 separated screens)	LED Display (2 separated screens)
1. Cell Phone App Authentication	1. Cell Phone App Authentication	1. Cell Phone App Authentication
2. IC Card + RF Card Authentication	2. IC Card + RF Card Authentication	2. RF Card Certification (Needs to register RF card)
4 hours or less (based on 28kWh battery)	4 hours or less (based on 28kWh battery)	4 hours or less (based on 28kWh battery)
IP44	IP44	IP44
300×365×174(mm)	300×365×174(mm)	300×365×174(mm)
9Kg	11Kg	11Kg
KC-Certification, Electromagnetic Wave Certification	KC-Certification, Electromagnetic Wave Certification	KC-Certification, Electromagnetic Wave Certification
5 pin Connector (5m-long cable) + charging socket	Two 5 pin Connector (5m-long cable) + charging socket	Two 5 pin Connector (5m-long cable) + charging socket
<ul style="list-style-type: none"> <li>Bright vivid LCDscreen</li> <li>Show information on charging                             <ul style="list-style-type: none"> <li>- Amount of charging electricity</li> <li>- Charging time</li> </ul> </li> <li>Automatic detects charging connector B/C type</li> <li>Low electricity consumption during waiting time</li> <li>Applicable for all cars(type B/C)</li> </ul>	<ul style="list-style-type: none"> <li>IC Card</li> <li>Charging two EVs at the same time</li> <li>Show information on charging                             <ul style="list-style-type: none"> <li>- Amount of charging electricity</li> <li>- Charging time</li> </ul> </li> <li>Automatic detects charging connector B/C type</li> <li>Low electricity consumption during waiting time</li> <li>Applicable for all cars(type B/C)</li> </ul>	<ul style="list-style-type: none"> <li>Charging two EVs at the same time</li> <li>Show information on charging                             <ul style="list-style-type: none"> <li>- Amount of charging electricity</li> <li>- Charging time</li> </ul> </li> <li>Automatic detects charging connector B/C type</li> <li>Low electricity consumption during waiting time</li> <li>Applicable for all cars(type B/C)</li> </ul>



# ELECTRIC VEHICLE CHARGERS & SOLUTION

- Fast Chargers (50kWh ~400kWh)

100kW Fast Charger + Canopy



50kW Fast Charger



**Output Power :** 50kW

**DC Output :** Maximum 500Vdc, 125Adc

**Cooling Method :** Cooling Fans

**Display :** Capacitive Touch Panel (8 inches)

**Charging Time :** 30 minutes (synchronized to battery size)

**Product Size :** 500(W) x 700(D) x 1,500(H)mm

**Weight :** 180kg

**Connector :** Combo 1ea

**User Authentication :** Synchronized RF card, password, charging system

**Charger Type :** DC Combo

**Input :** 3-Phase 4-Wire AC 380V ~480V

**Power Factor :** 0.99

**Temperature :** -20°C ~40°C

**Humidity :** 20~93%

**Certification :** KC, EMC

- Characteristic :**
1. Compatibility verification with all EVs of Combo Type 1
  2. Even the elderly are able to use the product at use with the electromotive reel system
  - 3.
  4. Safety function (detecting abnormal temperatures and circuit state and blocking)



# ELECTRIC VEHICLE CHARGERS & SOLUTION

Fast Charger for the weaks  
(Motor-puller system)



## Patent Application

This patented equipments unreels the cable automatically using electromotive motors and sensors, and when charging is complete, the cable is pulled in automatically to ensure that

## High Efficiency Certification :



## Convenient Handling of Cable

- ▶ When the cable is detached from the connector box from the charger, the cable is unreels automatically
- ▶ When the cable is returned to the connector box, the cable is returned to the original place automatically
- ▶ The user is able to control the length at ease
- ▶ Even the women and the elderly are able to use the product conveniently and safely
- ▶ The cable does not touch the ground, so the cable is not dirtied and guarantees safe using
- ▶ The cable could be attached to chargers of other companies



# ELECTRIC VEHICLE CHARGERS & SOLUTION

## • Power-vending Outlet

KL60-IoT2, LH2

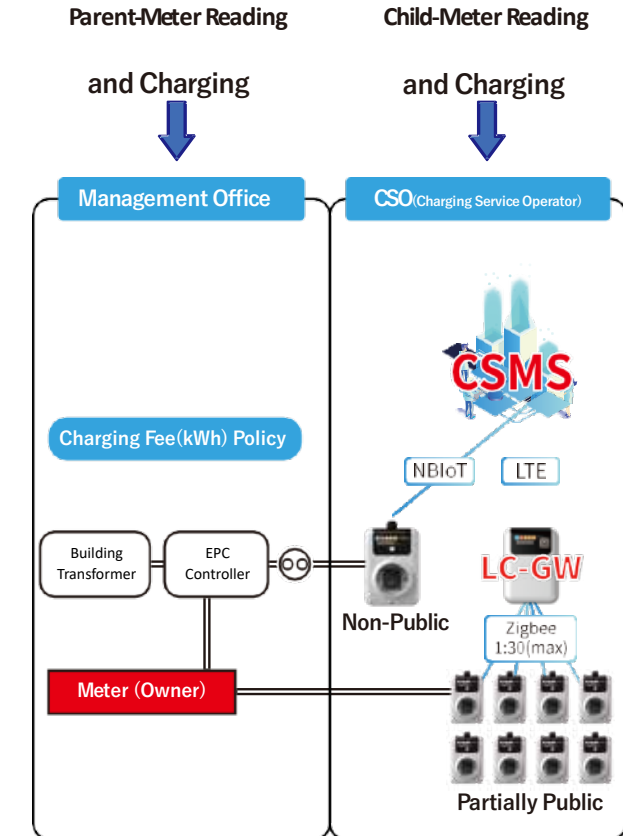


Category	Content
Output Capacity	3.5kW (16A)
Size	175(W) × 250(H) × 92(D) mm
LED Display	Charging state, remaining electricity
Payment Method	RF Card, Smartphone Application
Metering	Embedded Metering

## Characteristics

- ▶ Non-public charger conveniently installed to apartment buildings
  - Managed service device including communication modem and RF reader
- ▶ Managed Services
  - The contractor separate the EV parent power meter and child meter and pays the basic fees and the usage fees
  - Klinelex verifies the monthly EV charging amount and sends the data to KEPCO
  - KEPCO deducts EV charging amount from the parent meter
- ▶ Authentication and Connection
  - K-charger app, QR code and RF membership card authentication
  - Connects to the automobile inlet after authentication

## DSO (Distribution Service Operator like KEPCO)



CSMS : Charging Station Management System

LC-GW : Local Controller Gateway



# ELECTRIC VEHICLE CHARGERS & SOLUTION

- EV Chargers Line-up

## Managed Multi-Charging Stand



- Cost, Space Down
- 5-Ch Local Control charging

Chargers and sockets are connected to a single stand, and electricity is controlled within 7kW

## 3.5kW, 7kW Slow Chargers and Others



BC type Public Charger and 1.5kg Super-Light Charger Sold by More than 10,000 Units

## 50~400kW High-Speed Charger



The electromotive reel cable system enables easy use with little effort

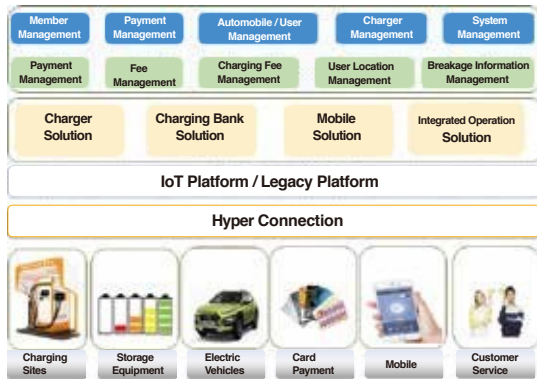




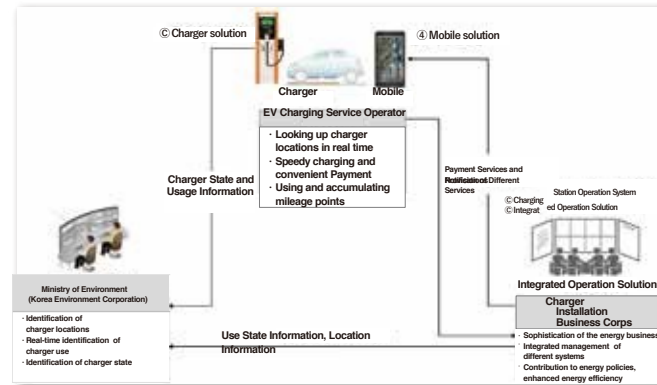
# ELECTRIC VEHICLE CHARGERS & SOLUTION

## • Charger Management and Billing Solutions

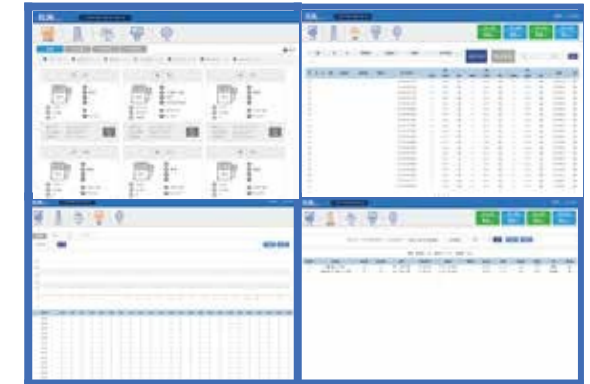
### On-site Charging / Controlling System



Key Parts of Operational

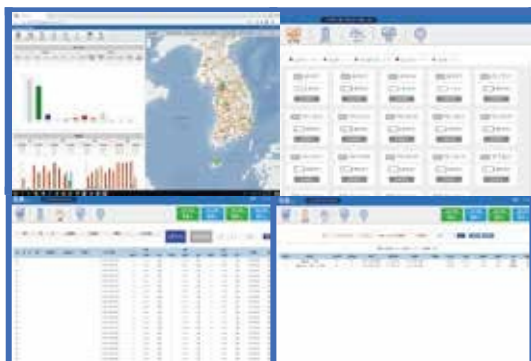


Operation Systems relationship diagram

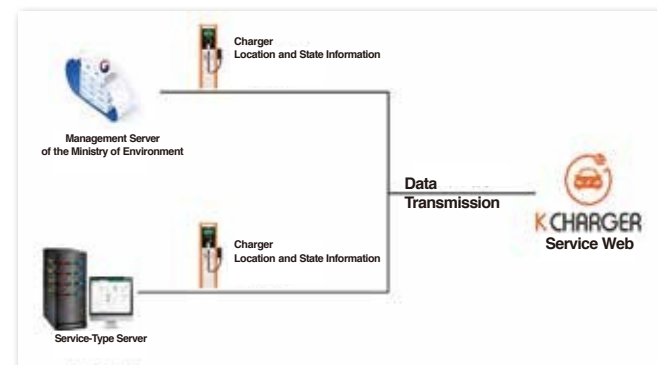


Control System's Main Screen

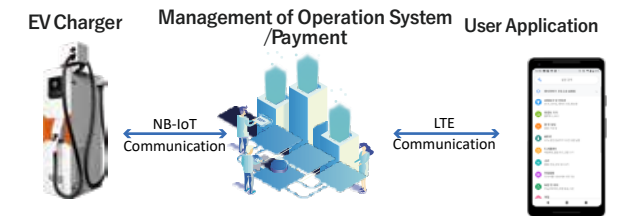
### Service-Type Charging and Control System



Control System's Main Screen



Operation Systems relationship diagram



### On-Site Payment

- 1 Member Payment: Card, Cell-Phone Payment, Mobile Cash
2. Non-Member Payment: Card, Cell-Phone Payment, QR Code

(Charging by Customers via Smartphone App)

Thanks



**BLE**