



北 圭 汽 车

CHINA VEHICLE INDUSTRY

江苏北圭汽车科技有限公司

China Vehicle Industry Co.,Ltd

Subdivision

/Leading/Specialization

/concentration

江苏北圭汽车科技有限公司

CHINA VEHICLE INDUSTRY CO.,LTD

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2023年01月01日

2023



CHINA VEHICLE INDUSTRY

Powering Your Future

Engineering The Impossible

Powering Your Future

Focus on One-Stop Service for Full Spectrum of Vehicles

Committed to Electrification Platform & New Energy R&D

Contribute to Sustainable Energy

致力于一站式解决新能源平台方案

北 佳 汽 车

CHINA VEHICLE INDUSTRY



Company Profile



20+

Years Experience

50+

10+

Countries

CHINA VEHICLE INDUSTRY CO., LTD. Founded in JiangSu Province, China, was initiated and established by the Chinese Academy of Engineering in conjunction with advantageous R&D resources of First Tier universities of China and Leading with iconic and representative project for national science and technology system reform and innovation, a National High-Tech Enterprise driven by technological innovation, specializing in precision and newness.

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Powering Your Future



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The Enterprise has the capability of Supplying the One-Stop Service including: Manufacturer Factory Building, Production Line Established, KD Parts Supplied and Electrification Platform of core components such as electric control system and electric drive system, which can provide efficient electrification solutions for various application scenarios to gurantee the great performance of the EV.



I. Background of Modification

- 1、 Existing traditional models of Yutong in Mauritius are refitted and replaced;
- 2、 China Vehicle Industry provide modification scheme and guide Mauritius to modified the Bus for 15 sets and follow-up stock market of local modification, China Vehicle Insudtry supply spare parts



I. Background of Modification



CHINA VEHICLE INDUSTRY
Powering Your Future

Specification of the Bus

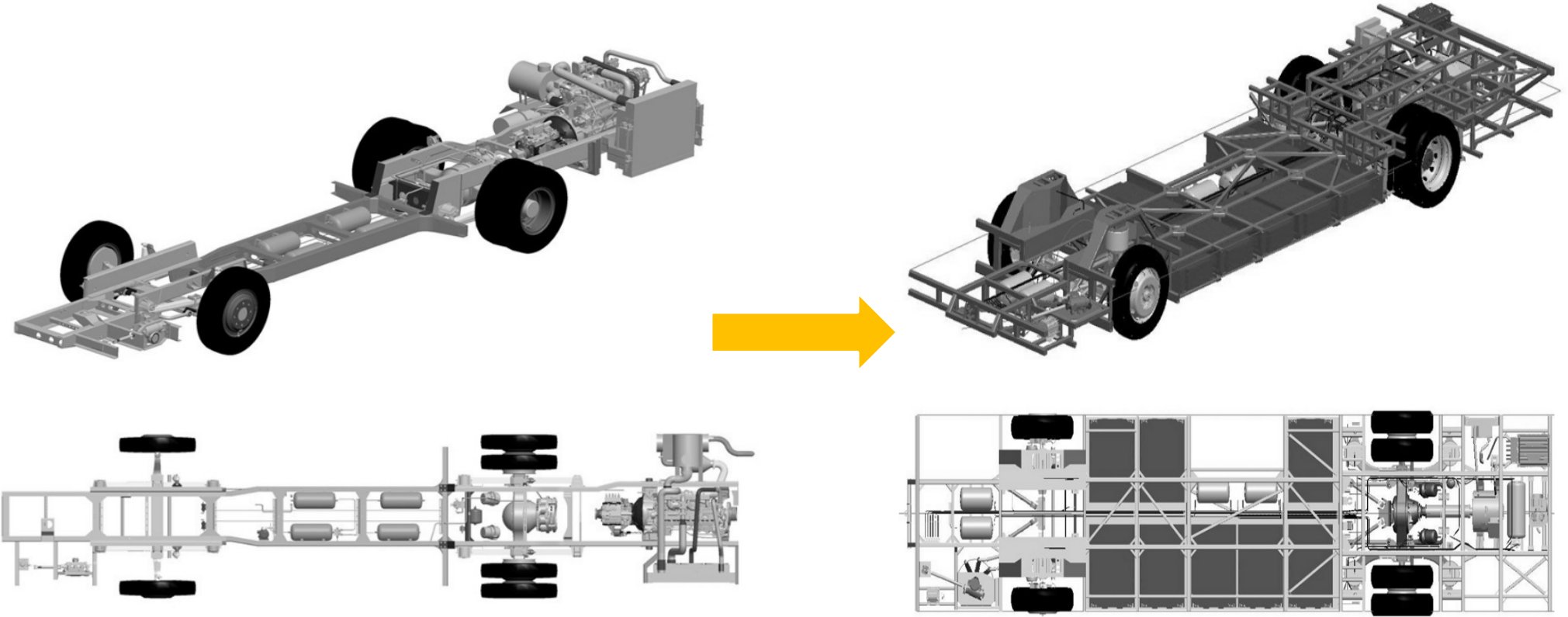
宇通 ZK 6118 HGA	
外形尺寸	11.6mx2.5mx3.075m
重量	11,900 kgs
座位安排	2x2
总座位	43
总站位	12
前车桥允许重量	5,500 kgs
后车桥允许重量	11,000 kgs
柴油发动机	8,267 升
最高:功率	180 KW@ 2,200 RPM
转距	1,025 NM at 1,400 RPM
轴距	5,800 mm
差动	5. 13:1
方向	RHD,
电池	两个 6-QA-200 AH
最大: GVW	16,500公斤

Specifications for Yutong ZK 6118 HGA

Dimension	11.6 m x 2.5 m x 3.075 m
Weight	11,900 kgs
Seating Layout	2 x 2
Total no of passengers seated	43
Total no of standees	12
Permissible mass at front axle	5,500 kgs
Permissible mass at rear axle	11,000 kgs
Diesel Engine	8,267 Litres
Max: power	180 KW@ 2,200 RPM
Torque	1,025 NM at 1,400 RPM
Wheel Base	5,800 mm
Differential	5.13:1
Steering	RHD ,integral power steering.
Batteries	Two 6-QA-200 AH.
Max: GVW	16,500 Kgs.



II、Chassis



Conventional power chassis

EV Chassis



II、Retrofitting Plan Description

Conventional Parts		EV Components	
Engine assembly	Remove	Motor & MCU	Add
Engine accessory system	Remove	Cooling for Motor and Inverter	Add
Transmission	Remove	/	/
Rear axle assy	Keep as it was	E-Axle	Add
Drive shaft	Keep as it was	E-Axle	Add
Direction machine	Keep as it was	Electric steering oil pump	Add
brake	Keep as it was	Electric brake air pump	Add
VCU	Remove	VCU (CAN)	Add
/	/	High Voltage Harness Wiring	Add
/	/	Battery System	Add
/	/	Aux Controller & PDU	Add
Instrument	Remove	Instrument	Add
Transmission Controll	Remove	Transmission Controll	Add
Clutch Pedal	Remove	/	/
Accelerator pedal	Keep as it was	Accelerator pedal	Keep as it was
/	/	Battery Thermal Management	Add



II、Retrofitting Plan Description

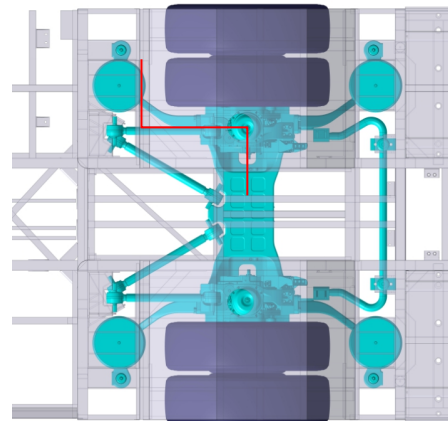
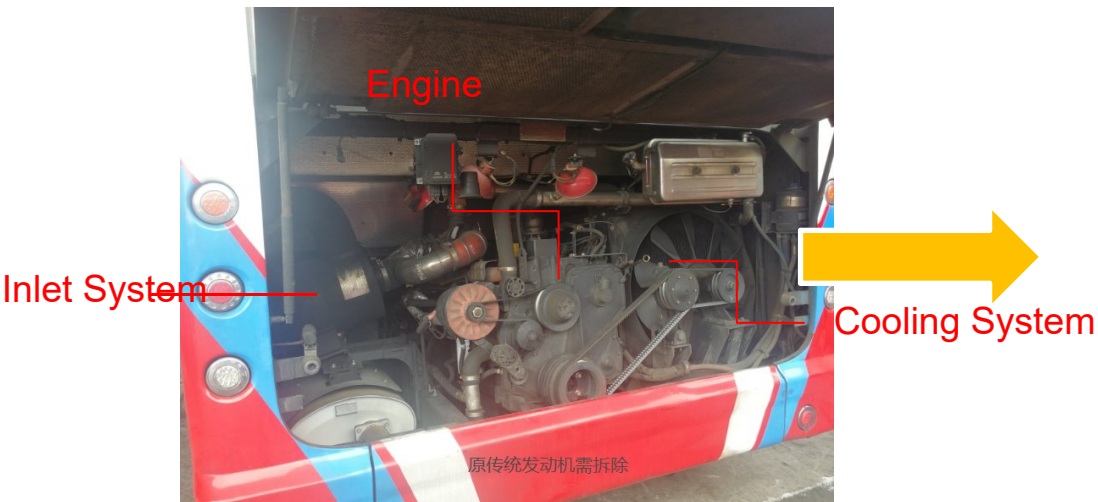
Requirements for modified site:

1. Accommodate more than 3 vehicles for modification at the same time, according to the turning radius of 12m vehicles *3 area;
2. There is a stable air source of 6bar to the air compressor;
3. Regular refit tools, especially large torque wrench above 800Nm, airtight instrument; A simple upper computer for EOL was provided by China Vehicle Industry..
- 4, With cutting, welding and other capabilities;
- 5, As far as possible with drum and brake test and other offline test equipment, if not, there must be a test site or more than 1km flat closed road;
- 6, There are trenches, large tonnage lift, Aerial crane over 5 tons, lift truck, 2T forklift, power grid capacity to meet the work of 120kw charger



II、Retrofitting Plan Description

1、Engine, transmission and suspension, change to drive motor and suspension



New energy wheel drive system

Remove engine and engine suspension, drive shaft, rear axle and rear suspension, design body skeleton connection points, install EV Axle and Rear Suspension;

Note: The labor cost is the on-site cost of the engineer, excluding the auxiliary workers. The labor time is calculated according to the actual modification process



II、Retrofitting Plan Description

2、Remove engine accessories, exhaust



Exhaust system



Fuel system



Inlet System

Cooling System



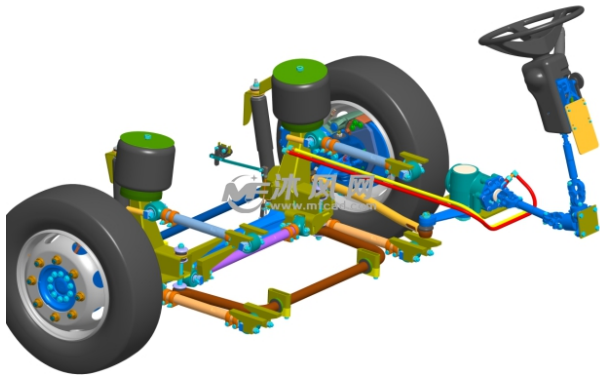
EV Cooling System

Remove exhaust system, fuel system, intake system, cooling system, design cooling system (radiator, fan, electronic water pump, supplementary water tank, water pipe)



II、Retrofitting Plan Description

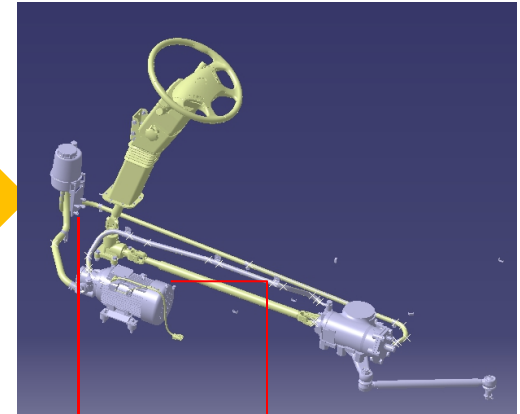
3、Remove steering line and liquid storage tank, install electric steering pump and pipeline.



Conventional car steering line



Conventional steering
Liquid Storage tank



Liquid Tank & Pipe Electric Pump

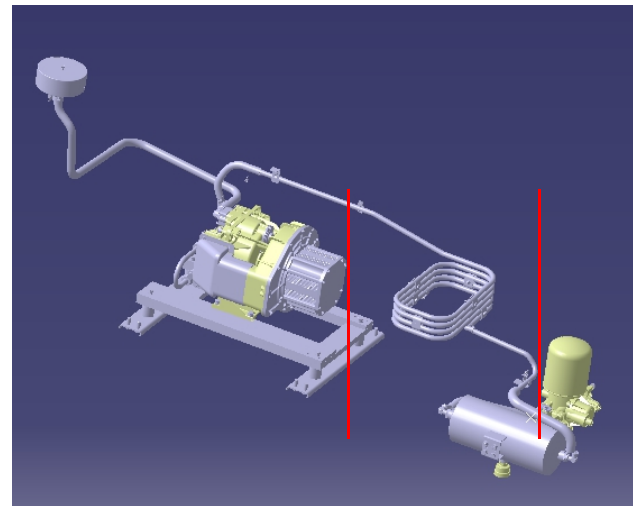
Remove the liquid storage tank and pipeline, remove the pipeline between the steering machine and the engine steering booster pump, design and match the electric steering pump, liquid storage tank, tubing and support



II、Retrofitting Plan Description

4、Remove brake line, install electric pump and Pipe Line

Air compressor and pipeline



Air compressor pipeline

E-Air Compressor

Remove the pipeline between the air outlet cylinder and the engine air compressor, install the electric compressor, gas pipe and support

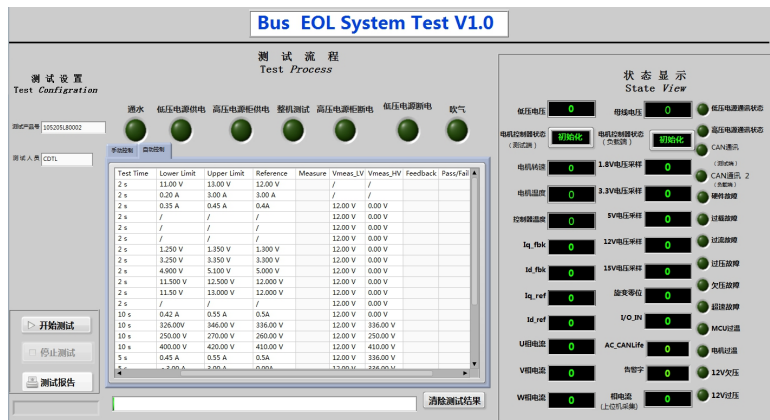


II、Retrofitting Plan Description

5、Remove the original ECU and replace the EV VCU



VCU



Test interface

Power-on and power-off

Driving Logistic

Braking Logistic

Protection Logistic

Temp. Logistic

Steering Logistic

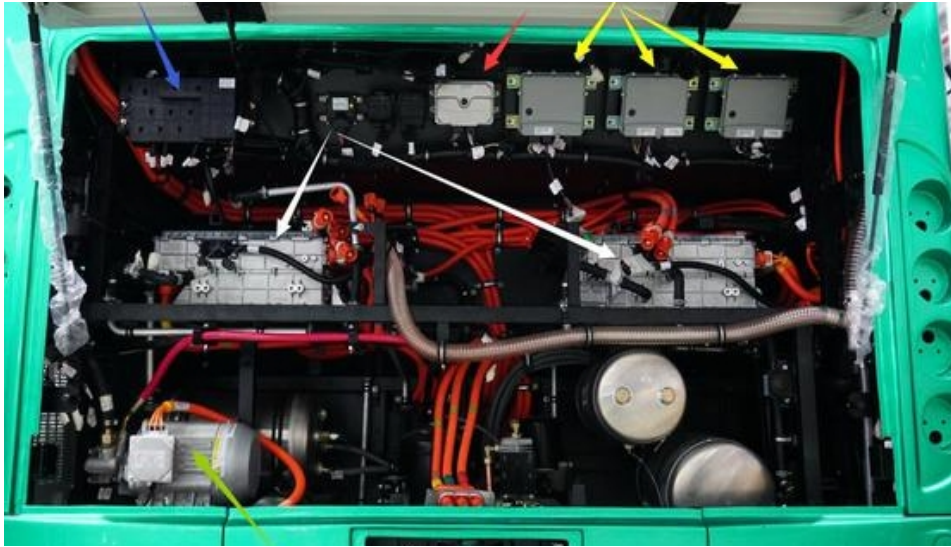
Diagnosis Logistic

Install VCU, edit vehicle communication protocol and control strategy, vehicle debugging, ASR, electronic differential debugging, modify vehicle final inspection EOL program.



II、Retrofitting Plan Description

6、High and Low Voltage Harness Wiring The whole Bus Design & reform



High and Low Voltage Wiring Harness

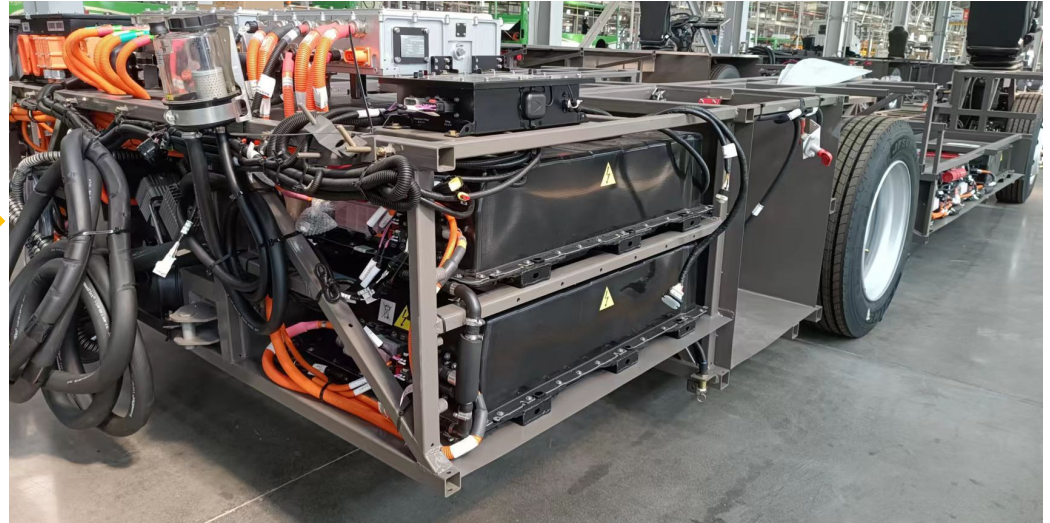


II、Retrofitting Plan Description

7、Rear compartment skeleton reform, install battery Pack



Engine Compartment



The actual vehicle needs to confirm the battery installation position



II、Retrofitting Plan Description

8、Added an auxiliary drive controller



Auxiliary drive 4-in-1 controller



II、Retrofitting Plan Description

9、The instrument is replaced with a special instrument for New Energy



Traditional Instrument



EV Instrument



II、Retrofitting Plan Description

10、 Remove the transmission control mechanism of the original vehicle and replace the new energy shifting mechanism



Traditional gear shifting mechanism



New energy shift button

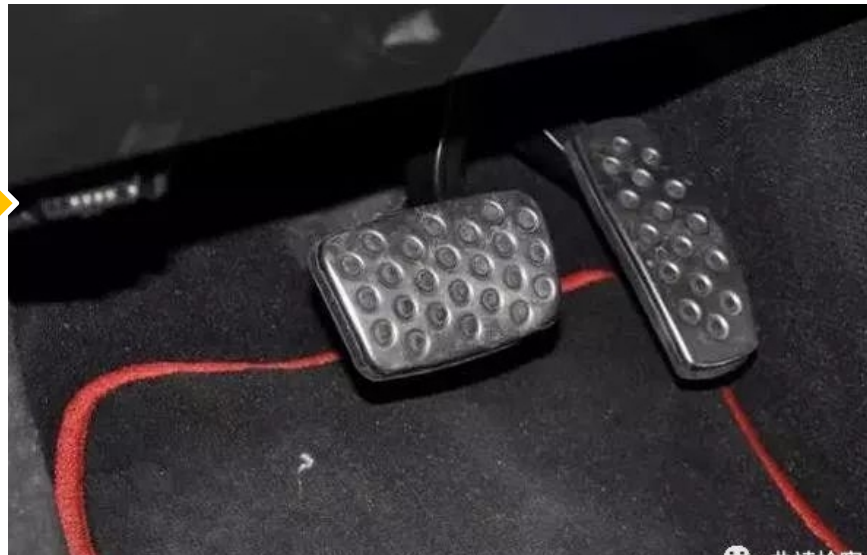


II、Retrofitting Plan Description

11、Remove the clutch pedal of the original car



Traditional car clutch pedal



New energy pedal: acceleration and braking



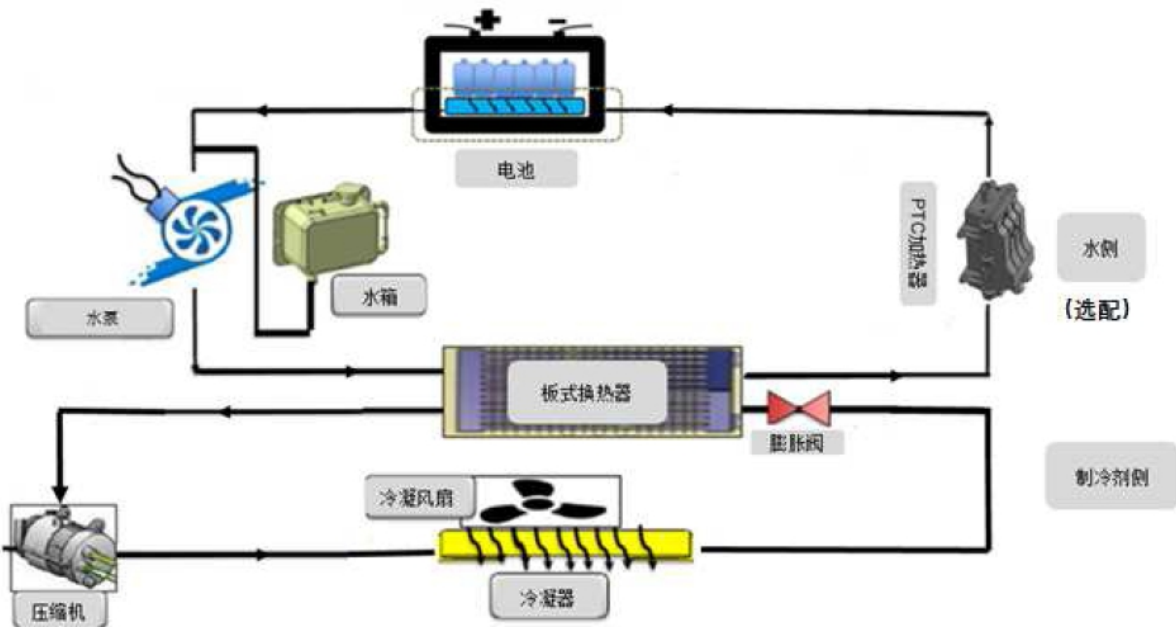
II、Retrofitting Plan Description



12、Add Battery thermal management system



8kW Battery thermal management system



System schematic diagram





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