

电梯应用

Elevator applications

电梯节能UPS为储能式电梯节能技术，利用超镍电池快速充放电的特性，可以快速回收和利用电梯制动电能，能有效的将电梯曳引机转换的直流电能储存在电池组，待电梯耗电时再升压供电，把浪费的能源再利用，实现节能。

Elevator energy-saving UPS is an energy storage elevator energy-saving technology that utilizes the fast charging and discharging characteristics of ultra nickel batteries to quickly recover and utilize elevator braking energy. It can effectively store the DC energy converted by the elevator traction machine in the battery pack, and then boost the power supply when the elevator consumes electricity, reusing wasted energy and achieving energy-saving.

电梯节能UPS的优势

The advantages of energy-saving UPS in elevators

01 节能 Energy saving

能够冲抵日常耗电的目的，和传统电梯比较，其综合节电率大于30%

Compared with traditional elevators, the comprehensive energy-saving rate of elevators is greater than 30%, which can offset the purpose of daily power consumption.

02 应急 Emergency

当遇到停电时，储存能量可以保证电梯运作一定周次，让居民停电时也能用上电梯

When encountering a power outage, storing energy can ensure that the elevator operates for a certain number of cycles, allowing residents to also use the elevator during power outages.

03 维持应急平层功能 Maintain

当电池电量耗尽，还可以维持应急平层功能让居民安全撤出

When the battery is depleted, the emergency leveling function can be maintained to ensure the safe evacuation of residents.

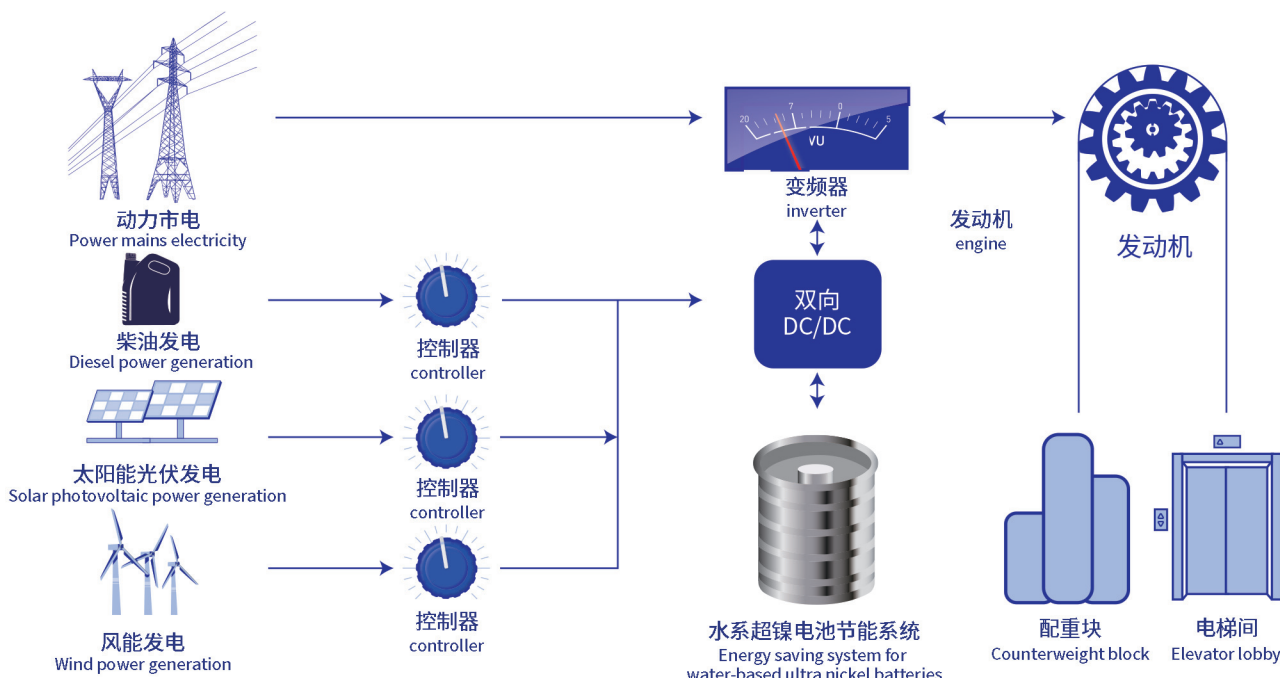
04 降低设备的供电容量

Reduce the power supply capacity of equipment

05 自动脱离故障 Safety

保证电梯正常运行,每台电梯具备原有的独立性，与电梯原有控制系统“互为冗余”，不改变电梯原有控制方式

Ensure the normal operation of the elevator, with each elevator having its original independence and being redundant with the original control system of the elevator, without changing the original control mode of the elevator.



码头港口应用

Terminal Port Applications

全方位提供门座机节能解决方案

Provide comprehensive energy-saving solutions for door seat machines

机节能系统利用超镍电池快速充放电的特性，快速回收和利用起升电机下放和刹车时势能转化的电能，储存在电池组，待起升电机起吊耗电时再升压供电，充分利用回收电能，降低生产成本。

The energy-saving system utilizes the fast charging and discharging characteristics of ultra nickel batteries to quickly recover and utilize the energy converted from potential energy during the lowering and braking of the lifting motor, which is stored in the battery pack. When the lifting motor consumes electricity, it is then boosted to fully utilize the recovered energy and reduce production costs.

水系超镍电池在门座机上的优势

The advantages of water-based ultra nickel batteries in gantry cranes

01 节能 Energy saving

回收制动能量，能够冲抵日常耗电的目的，其综合节电率高达40%

Recovering braking energy can offset daily power consumption. The purpose is to achieve a comprehensive power saving rate of up to 40%.

02 应急 Emergency

当遇到停电时，储存能量可以保证设备运作一定周次或行驶一定距离。

When encountering a power outage, storing energy can ensure that the equipment operates for a certain number of cycles or travels a certain distance.

03 抗峰 Anti peak

减少对主电网或柴油发电机组的峰值功率需求，降低设备的供电容量

Reduce peak power demand on the main power grid or diesel generator sets, and lower the power supply capacity of equipment.

04 环保 EP

减少碳排放量>200吨/年，并且降低了设备的噪音污染

Reducing carbon emissions by over 200 tons per year and reducing equipment noise pollution.

05 安全 Safety

节能系统可自动脱离故障，保证设备正常运行，不改变设备原有控制方式，每台设备具备原有的独立性

The energy-saving system can automatically break free from faults, ensuring the normal operation of the equipment without changing the original control mode of the equipment. Each equipment has its original independence

码头港口应用

Terminal Port Applications

全方位提供门座机节能解决方案

Provide comprehensive energy-saving solutions for door seat machines

门座机为什么会发电？全新节能方案示意

Why does the door machine generate electricity? Schematic diagram of a new energy-saving solution

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回馈式门座机的弊端

The drawbacks of feedback type gantry crane

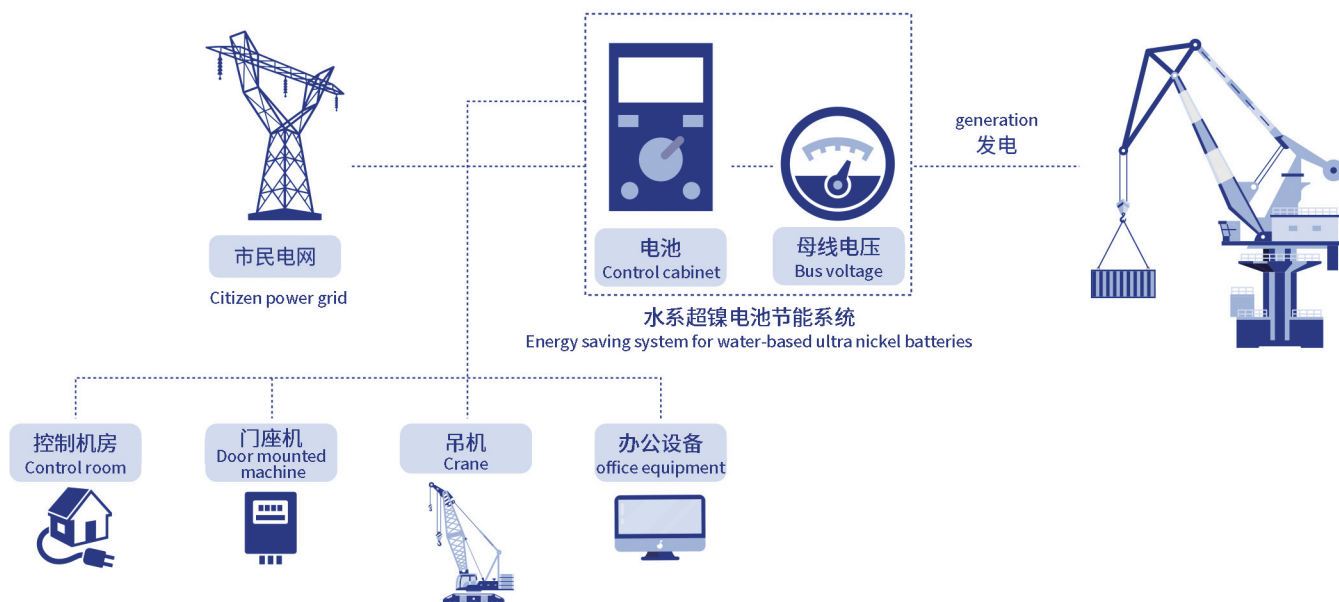
- 于大电网连接存在安全隐患，且入大电网需要办理入网手续；
There are safety hazards when connecting to the power grid, and entering the power grid requires Handle network access procedures;
- 影响电网，谐波无法克服，干扰影响周边设备；
Affects the power grid, harmonics cannot be overcome, and interference affects surrounding equipment;
- 门座机逆变，噪音大；
Door mounted inverter with high noise;
- 节电效果不明显，无法精确计算节省用电成本。
The energy-saving effect is not significant, making it difficult to accurately calculate the cost of electricity savings.



储能式门座机的优势

The advantages of energy storage door machine

- 不影响电网；
Not affecting the power grid;
- 不影响周边设备、静音；
Not affecting surrounding equipment and mute;
- 有物联网功能，方便管理节能；
Equipped with IoT functionality, convenient for management and energy conservation;
- 可以直接冲减电费，节约成本。
It can directly offset electricity bills and save costs.



轨道交通能量回收应用

Application of Energy Recovery in Rail Transit

轨道交通是一种大运力、高密度的交通工具,其车辆依靠电力牵引运行,耗能巨大。据统计数据显示,虽然列车启动会消耗大量电能,但再生制动却会回馈40%电能。对这部分能量进行回收再利用,既可减少大量能耗又可减轻电网负担。水系超镍电池制动能量回收系统快速回收列车制动电能,将再生制动电能转化为直流电能储存在电池组中,待列车耗电时再升压供电从而实现能源二次利用达到节能效果。

Rail transit is a large capacity and high-density transportation vehicle, whose vehicles rely on electric traction to operate and consume huge energy. According to statistical data, although starting a train consumes a large amount of electrical energy, regenerative braking will give back 40% of the electrical energy. Recycling and reusing this portion of energy can not only reduce a significant amount of energy consumption but also alleviate the burden on the power grid.

The water based ultra nickel battery braking energy recovery system quickly recovers the braking energy of the train, converts the regenerative braking computer into direct current energy and stores it in the battery pack.

When the train consumes electricity, it then boosts the power supply to achieve secondary energy utilization and energy-saving effects.



安全低碳绿色储能解决方案

Safe, low-carbon, and green energy storage solutions

01 城市电单车储充项目

Urban electric bike storage and charging project

助力城市公共事业智能低碳出行理念,为绿色低碳、安全高效出行提供便捷服务。为低碳出行给予最核心的安全置换充电方案。

Assist the concept of intelligent low-carbon transportation for urban public utilities, and provide convenient services for green, low-carbon, safe and efficient transportation. Provide the most core safe replacement charging solution for low-carbon travel.

02 客运集团储充项目

Passenger Transport Group Storage and Charging Project

助力城市绿色出行理念,为绿色低碳、安全高效出行提供用电升级方案。自主研发云监控管理平台、智能物联移动终端等软件,让出行更智能,运营更安全。

To support the concept of urban green travel and provide electricity upgrade solutions for green, low-carbon, safe and efficient travel. We independently develop cloud monitoring management platforms, intelligent IoT mobile terminals, and other software to make travel smarter and operations safer.

03 智慧社区储充项目

Smart Community Storage and Charging Project

集中解决老旧小区用电扩容难题,做百姓触手可及的智慧绿能升级方案提供者。

Concentrate on solving the problem of electricity expansion and expansion in old communities, and become a smart green energy upgrade solution provider within reach of the people.

04 解决军工产品在极端环境条件下使用项目

Addressing the use of military products under extreme environmental conditions

解决军用车辆在极端天气条件下电源点火供电不响应,及保证在极端气候环境下导弹点火的正常运行。在信息化部队中,给极端气候条件下电子设备供电。

Solve the problem of unresponsive power supply for military vehicles during extreme weather conditions, and ensure the normal operation of missile ignition in extreme weather environments. In the information technology army, power electronic devices under extreme weather conditions.

前景展望 节能减排

Outlook for Energy Conservation and Emission Reduction

面临着30年内碳中和的严峻挑战,中国的新能源行业将被彻底激活,能源转型是个非常漫长的过程,正常的替代顺序是木材-煤炭-石油-天然气-可再生能源,每一代能源更替都设计大规模的基础设施改造过渡时间通常都要在半个世纪以上。为了实现2060碳中和,中国将必须实现能源的跨代升级,直接从石油跨代到可再生能源。碳中和是一个挑战,更是一个战略机会。如今,这个机会已经出现在我们面前。水系超镍电池将会帮助各行各业实现节能减排的目标,节能减排势在必行。

Faced with the severe challenge of carbon neutrality within 30 years, China's new energy industry will be fully activated. Energy transformation is a very long process, and the normal replacement sequence is wood coal oil natural gas renewable energy. Each generation of energy replacement is designed with large-scale infrastructure transformation, and the transition time is usually more than half a century. In order to achieve 2060 carbon neutrality, China will have to achieve cross generational energy upgrades, directly transitioning from oil to renewable energy. Carbon neutrality is not only a challenge, but also a strategic opportunity. Now, this opportunity has appeared before us. Water based ultra nickel batteries will help various industries achieve the goal of energy conservation and emission reduction, and energy conservation and emission reduction are imperative.

油田节能应用

Energy saving applications in oil fields

大功率双向DC/DC与水系超镍电池的完美结合

The Perfect Combination of High Power Bidirectional DC/DC and Water based Ultra Nickel Battery

磕头机（游梁式抽油机）/高原机节能经济效应明显，上下作业耗电量占比50%-70%，符合国家节能政策。

The energy-saving and economic effects of the kowtow machine (beam pumping unit)/plateau machine are obvious, and the power consumption during up and down operations accounts for 50% -70%, which is in line with national energy-saving policies.

磕头机（游梁式抽油机）/高原机节能的优势

The energy-saving advantages of kowtow machine (beam pumping unit)/plateau machine

01 游梁式抽油机市场数量较多

There are a large number of beam pumping units in the market.

02 抽油机电费占油田用电成本的30%

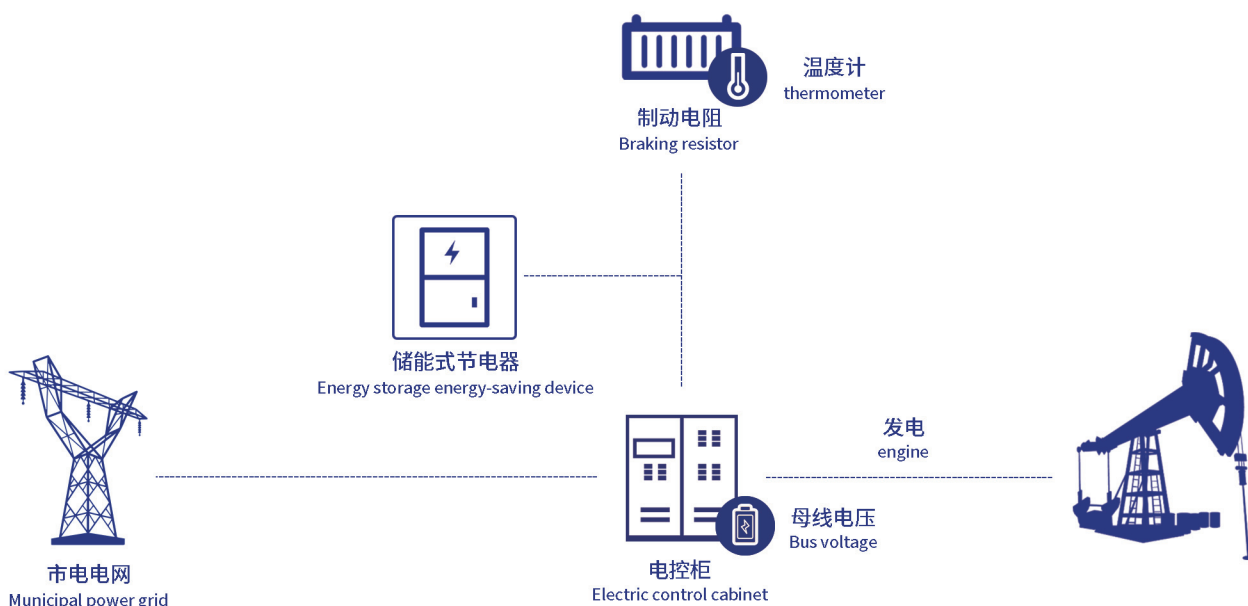
The mechanical and electrical expenses for oil pumping account for 30% of the oilfield's electricity cost.

03 上下作业耗电量占比50%-70%

50% -70% of power consumption for up and down assignments.

04 经济效益明显，符合国家节能政策

50% -70% of power consumption for up and down assignments.



电厂调频谐波应用

Application of frequency modulation harmonics in power plants

随着电力使用需求的增加,新能源发电在电网比重的增加。为了平抑波动性很大的风电或光伏电源,电网中必须配置相应备用电源容量从而保证电力市场的稳定和电能的安全和电能质量,要求了各种化学储能快速应参与电力系统调频SVG,无功补偿,电网黑启动和调峰削谷等应用,而综合调频是典型功率型应用,综合调频要求作用时间短,功能需求高,能量需求低,因此水系超镍电池是合适的选择。

With the increasing demand for electricity usage, the proportion of new energy generation in the power grid has increased. In order to suppress highly volatile wind or photovoltaic power sources, corresponding backup power capacity must be configured in the power grid to ensure the stability of the electricity market and improve the safety and quality of electricity. Various chemical energy storage systems are required to quickly participate in power system frequency regulation SVG, reactive power compensation, grid black start, and peak shaving applications. Integrated frequency regulation is a typical power type application, which requires a short action time, high functional requirements, and low energy requirements. Therefore, water-based ultra nickel batteries are a suitable choice.



提高能源转化率
Improve energy conversion rate



多种方式充电
Multiple charging methods



智能调峰
Intelligent peak shaving



用能优化
Energy optimization

应用端来看,用户侧是化学电池储能最大的应用市场,占比超过50%,主要是能量型应用包括用户侧自建风光新能源与化学电池储能相结合发电自用和调峰填谷两大应用。

From the perspective of the application side, the user side is the largest application market for chemical battery energy storage, accounting for over 50%. The main energy applications include the combination of self built wind and solar new energy and chemical battery energy storage on the user side for power generation and self use, as well as peak shaving and valley filling.

01 解决用户侧特别是大型自动化较高企业错峰停电严重影响企业营运问题

Solve the serious impact of staggered power outages on enterprise operations, especially for large automation enterprises, on the user side.

02 充分利用国家峰谷电价差和补贴政策,可以提供可观利润发展空间

Fully utilizing the national peak valley electricity price difference and subsidy policies can provide considerable profit development space.

03 用户侧自建风光新能源与化学电池储能相结合发电自用,减少电网中间和输送环节发电效益和投资回报率较好

The combination of user side self built wind and solar new energy and chemical battery energy storage for power generation and self use reduces the power generation efficiency and investment return rate in the intermediate and transmission links of the power grid.

