

China Power Releases Six Energy Sustainability Technology Innovations

On October 29, 2023, the New Tech & Product Launch Event, hosted by China Electricity Council (CEC) and China Industry University-Research Institute Collaboration Association (CIUR), organized by China Power International Development Limited (China Power), was held in Beijing. China Power launched six technology innovations, demonstrating the new trend of emerging industry cluster development and opening a new chapter of building an innovation-driven world-class green and low-carbon energy supplier.

Mr. Qian Zhimin, Member of the Standing Committee of the National Committee of the CPPCC, Deputy Director of the Committee of Population, Resources and Environment, and Chairman of State Power Investment Corporation Limited (SPIC), said that compared with traditional fossil energy, new energy relies on technological innovation to drive progress. The New Tech & Product Launch Event is not only a centralized report to the public and shareholders on the progress of innovation, but also an invitation to all walks of life to work together to build a new energy system.

Mr. He Xi, Chief Engineer (New Energy) of SPIC, Chairman of China Power, and Executive Vice Chairman of CIUR Micro-Energy Grid Collaborative Innovation Platform, delivered a speech on the theme of energy sustainability technology innovation, and shared the experience that based on China's needs and the industry trend, China Power, as a sci-tech based central energy enterprise, has vigorously implemented the innovation drive to solve the key and difficult problems of building new power systems and to serve and guarantee China's energy sustainability.

Mr. He said that energy sustainability is always a broad global, strategic issue and is also related to human survival, production and lifestyle changes. Two years ago, China Power released a new strategy to start a new journey of accelerating the green development of clean energy and sci-tech innovation in emerging industries. Over the past two years, China Power has not only achieved the goal of rapid development of clean energy, but also accelerated breakthroughs in sci-tech innovation with the pioneering spirit of "to be the first", and fulfilled its promises to its global partners, the capital community and all shareholders.

Focusing on the three key words of "sustainability, integration and low carbon", Mr. He introduced the breakthrough progress of China Power's green energy industry. Mr. He said that China Power has always kept in mind the "Greatness of the Nation" to play with the times, and has integrated sci-tech innovation into its corporate culture and built a series of technologies to build new power systems and serve and guarantee energy sustainability, and China Power will work with its peers to move toward a zero-carbon future.

In the launch event of innovation achievements, Mr. He pressed the initiating button together with the heads of XYZ Storage Technology, Colorfullead Power, Qiyuan Core Power, Sinopower New Materials Technology, Xinyuan Guochen and CLP Yu Chong, which are China Power's emerging industry companies, and some chief scientists, to release of sci-tech innovation achievements.

XYZ Storage Technology released the smart digital twin energy storage and control operation platform, which will open up a new era of unmanned operation in the energy storage industry, and has first realized unified modeling of the whole equipment life cycle of energy storage stations, cross-network safety penetration of massive characteristic data of energy storage stations, digital twin simulation of energy storage stations based on AI big data computing, and active safety warning and assessment of storage power stations in all scenarios. These will enable the development of the new energy storage industry and help accelerate the building of new power systems.

Colorfullead Power released the innovation and application of full-color PV functional materials. The original full-color micro-painting technology uses color processing to produce various types of PV modules, can realize the adaptation of different application scenarios, and is used to produce a series of products, such as full-color cadmium telluride thin-film modules, full-color crystalline silicon modules, and full-color lightweight flexible modules, which will help improve the integration of architecture and PV power, the integration of environment and PV power, and reuse of decommissioned PV modules.

Qiyuan Core Power released the key technology and solutions for transportation and energy integration, creating the "Energy Cube" and technological solutions, a standardized battery system for electric vehicles and energy storage, which is compatible with more than 95% of the battery swap stations and 92 brands of electric vehicles, cover more than 85% power-switched heavy truck models on the market, and can realize battery cluster management, full-life cycle monitoring, vehicle-network and station-network interaction, charging and battery swap mechanism optimization, and create a transportation and energy integration community.

In response to the current safety problems of electrochemical energy storage stations, Sinopower New Materials Technology released the fire extinguishing agent for electrochemical energy storage stations and high-security fire-fighting coolant technology, which can quickly block the combustion of energy storage stations, effectively manage cells thermally, provide all-round and full-time guarding for batteries in energy storage stations and realize intrinsic safety of cells.

Xinyuan Guochen released the new power distribution system with photovoltaic, energy storage, direct current and flexibility (PEDF), which solves the problems existing in the traditional distributed PV power systems in terms of grid stability, power quality, line loss, capacity expansion and solar power curtailment, makes distributed PV power systems observable, measurable, controllable and adjustable, realizes mutual power aid between transformers, improves power distribution equipment utilization and power supply reliability, creates a new paradigm of power supply in various fields including transportation, construction, industry, urban and rural areas, promotes the transformation and upgrading of social and economic structure, brings about fundamental changes in the way of production and use of energy in life, and enables a zero-carbon future.

AI promotes intelligent safe operation and maintenance of energy systems. CLP Yu Chong released robot products for the "high hazard, high pollution and high difficulty" manual operation scenarios in the power industry, and the robots can be used for intelligent inspection of HV cabinets, inspection of the strong magnetic high-temperature environment under the electrolysis tank, intelligent underwater operations and exploration, inspection of ultra-low temperature coal conveyor trestles, intelligent scheduling and control of refuse storage. The robots can dig data value in depth, so that operations are more accurate, more efficient and safer, AI enables the transformation and upgrading of traditional production methods.

In the roundtable exchange session, Mr. Li Peng, Executive Director of China Renewable Energy Society, Ms. Li Tong, Executive President of BOC International Holdings Limited, Mr. Gao Wujun, Vice Mayor of Fangshan District of Beijing, Mr. Hui Dong, Chief Expert of China Electric Power Research Institute, Mr. Shou Rufeng, Vice President of China Power, and Mr. Liu Kai, Chief Scientist of Sinopower New Materials Technology, had an in-depth discussion on the theme of "Collaborative innovation among government, industry, academia and research institutions to guide the future development of energy", provided insight and inspiration for energy and power to build an innovation industry chain integrating government, industry, academia and research.

During the launch event, friends from Chile, Mexico, Brazil, Australia and Pakistan congratulated the success of the event and expressed their hope for deepening cooperation and exchanges in the field of energy sci-tech innovation with China Power.

The launch event was broadcast live online to the whole world, with more than 1.7 million viewers. Guests on the site said that the shocking appearance of the advanced sci-tech achievements of China Power's emerging industrial enterprises has opened up a whole new horizon of innovation-driven and future-oriented development for all of us.

China Power also has a number of advanced sci-tech innovations that are representative of the industry, such as continuous charging and supercharging solutions, safe development and efficient utilization of geothermal energy. At the same time, the technology to solve the world-class "necklace" problem will soon be industrialized, so everyone is full of more expectations for science and technology and innovation.