PTTX actively adheres to the Carbon Neutrality Initiative and endeavors to improve its transformer core manufacturing technology

With climate change having become a common issue for the mankind, carbon emission has become the focus of attention around the world. In 2020, China set the goal of "Carbon Peak by 2030 and Carbon Neutral by 2060".

Photo: PTTX

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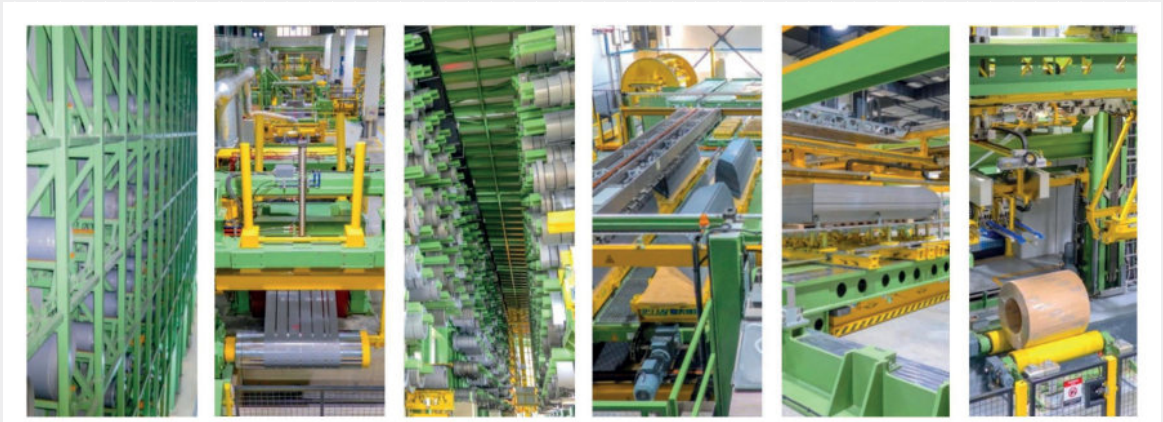
PTTX has been actively adhering to Carbon Neutrality and assuming Carbon Responsibility. PTTX has been taking the lead in low-carbon emission and carbon reduction intelligent manufacturing from various perspectives, such as harmless raw material, clean production, reclamation of wastes, low carbon energy source, and other aspects. PTTX is credited as the "Green Factory of Jiangsu Province" and "Wuxi Smart Factory" by the Chinese government.



PTTX – Innovation in multiple aspects, the pioneer of Green Smart Manufacturing

1. R&D and new patents

(1) PTTX provides the clients with Eco-design scheme of transformer cores. Through the application of the new materials of PTTX, with the structure design and new processing technology such as multi-step overlapping joints, transformer core products have achieved the low-noise-and-low-iron-loss requirement. It has been test proven that the power loss of the transformer could be reduced by 10%.

(2) In 2021, a total of 32 new patents were applied by PTTX, including 15 invention patents and 17 utility model patents.

PTTX has successively formed strategic partners with reputable scientific research institutions like Wuhan University of Science and Technology (ranking top 103 in China), Xi'an Jiaotong University (ranking top 10 in China), and large state-owned enterprises such as Beijing Shougang Co., Ltd (ranking top 5 by market share in China). The company has also built a postgraduate training base with Xi'an Jiaotong University, a joint laboratory with Beijing Shougang Co., Ltd on electrical steel application technology, and a provincial-level high-voltage special transformer core engineering technology research center. These R&D infrastructures enable PTTX to provide clients with green and low-carbon products that meet the standards of various countries.

2. Factory management system building

PTTX has met GB/T 19001 requirements and passed the GB/T 19001-2016 certification. Since June 2020, the company has established a relatively complete GB/T 23331 energy system document. In June 2021 PTTX officially completed RB/T 119-2015 energy management system certification audit.

3. Equipment operation and control

(2) PTTX has been strengthening the standardization building of the factory, such as the improvement of the standardization of vertical and horizontal shear tool, tool storage, transportation, inspection, and the standardization of table setting, assembly, horizontal shear punching die, track.

PTTX has been conducting equipment upgrading and technological innovation. It has achieved a variety of phased achievements, such as a 3% increase in the utilization rate of silicon steel materials, a 5% reduction in the process coefficient of each grade of electrical steel, and a 5% increase in energy efficiency. In particular, the research on the utilization rate of electrical steel coil, through the transformation of equipment control, will reduce the waste of materials, making contributions to carbon neutral initiatives.

4. Green production and smart manufacturing

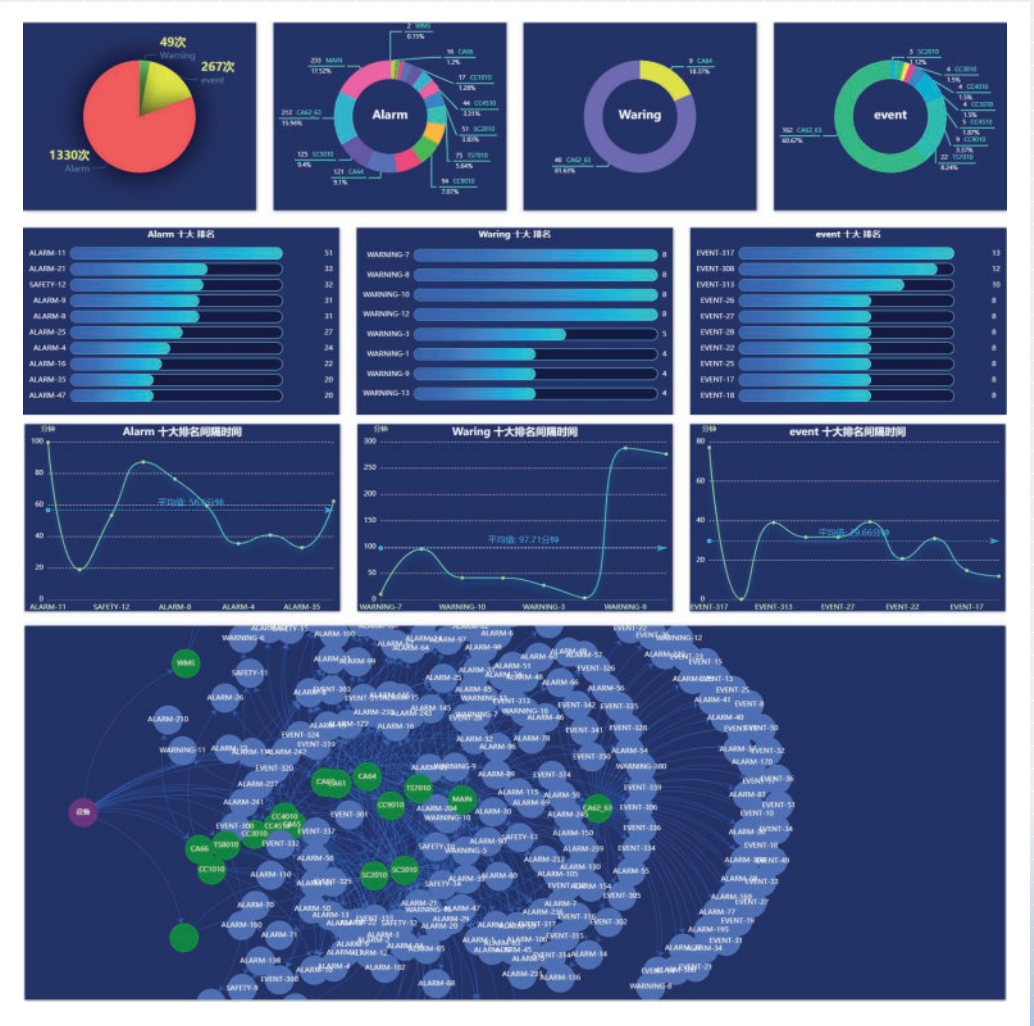
(1) PTTX pays great attention to the research of the application of environmental-friendly water-borne paint in different voltage levels of transformer core. Through independent research and the development of water-soluble paint instead of solvent-based paint, the painting operation will be safer and more environment friendly.

For product packaging, transportation, and application, PTTX applies vacuum packaging to replace the rust-proof oil coating products. This eliminates the pollution and impact on transformer performance caused by rust-proof oil.

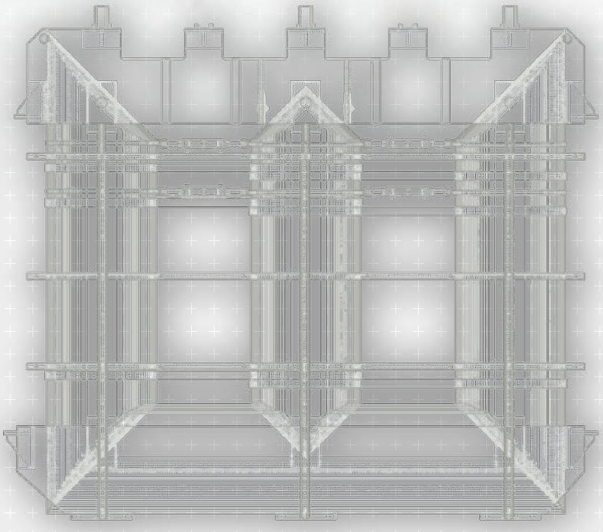
(2) PTTX adheres to smart manufacturing. By adopting advanced integrated RFID technology, and establishing enterprise resource management system, including Enterprise Resource Planning (ERP), Manufacturing Execution System (MES), Product Data Management (PDM), Supervisory Control and Data Acquisition (SCADA), Distributed Control System (DCS), Enterprise Command Center (ECC), Office Automation (OA), Advanced Planning and Scheduling (APS), Customer Relationship Management (CRM), Warehouse Management System (WMS), enterprise cloud construction, etc., it ensures an intelligent, digital, and automatic enterprise management and production.

(3) Establishment of an intelligent digital equipment model. PTTX has established a complete set of intelligent digital equipment model to realize the digital management and automation of the whole life cycle management of equipment, tools, molds, and spare parts. The system also realizes the real-time online feedback of equipment maintenance and automatic rolling scheduling of equipment maintenance. It continuously improves equipment support capacity, reduces equipment failure rate, prolongs the service life of equipment and equipment stability.

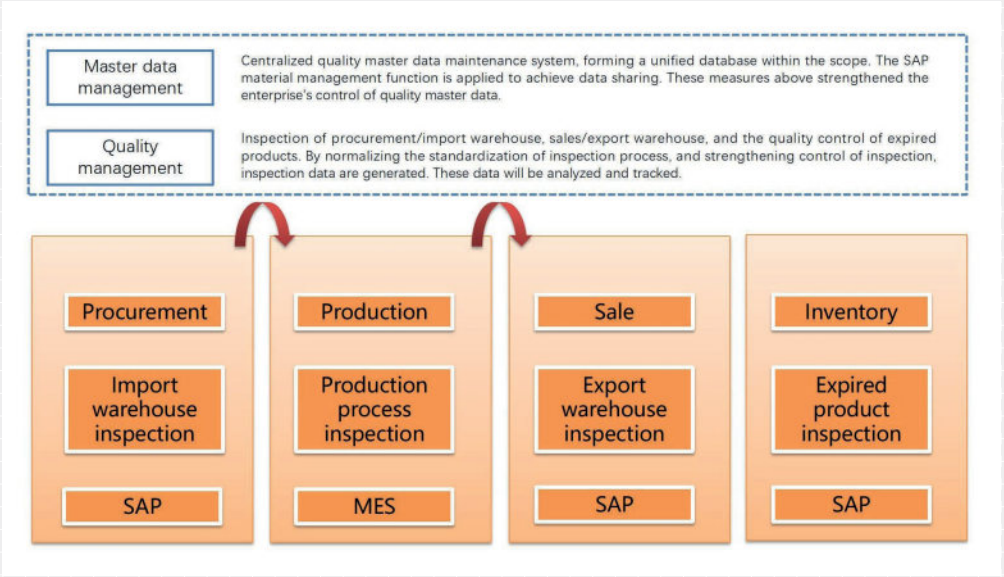
(4) PTTX has introduced an automatic docking big data platform. For each process, a quality digital model was established. By collecting the quality data of each process, the model automatically collates, summarizes, and analyzes the inspection data, monitoring product quality in real-time. The platform can find unqualified products in time and give production feedback accordingly. It reduces the production and outflow of defective products and improves the controllability and stability of the overall quality of products.



Digital model of intelligent equipment



The model of transformer core



Intelligent digital quality model

Propel a green development

(1) With the full implementation of the new version of China's "Power Transformer Energy Efficiency Limit value and Energy Efficiency Grade" (GB 20052-2020) standard, PTTX will continue to promote the R&D of raw materials and material application, increase the investment in R&D of high grade oriented electrical steel, and steadily improve the performance and quality of oriented electrical steel of PTTX.

(2) The transition from old to new energy systems has placed focus of many countries on the stability and reliability of their energy systems and energy supply. Facing the market opportunities supported by the international policies, PTTX pays very close attention to the market demand overseas. It has obtained the recognition of overseas clients from Europe, the Middle East, South America, North Africa, Southeast Asia, etc. with its high-performance products. In the future, PTTX will accelerate the internationalization of enterprise standards. It will endeavor to build its overseas marketing network and continue to expand the influence of the PTTX brand image globally.

(3) PTTX will continuously implement the green development strategy. With the value of innovation as the first development force, PTTX will vigorously promote the transformer core application technology to a new level. By adhering to intelligent production and efficient production, PTTX strives to promote the intelligent trans-formation of the whole industry.