

Light Up the Land Where Solar and Hydro Meet at the World's Largest Hydro-Solar Hybrid Power Plant

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Hydro-Solar Hybrid Enhances Energy Sources

What appears to be a "PV sea" is actually the Kela PV Plant Phase 1, the world's largest, highest-altitude, and first GW hydro-solar hybrid power plant, with a total installed capacity of 1 GW and covering an area of 16 km².

50 kilometers away from the Kela PV Plant, the 295 m high Lianghekou Dam stands on the Yalong River, serving for hydropower generation and flood control. This hydropower plant has an installed capacity of 3 million kW and a total water storage capacity of 10.8 billion m³, making critical contributions to renewable energy development in the basin. The Kela PV Plant is connected to the Lianghekou Hydropower Plant through the 500 kV power transmission lines, realizing hydro-solar hybrid transmission.

Digital and Intelligent Technologies Build a Benchmark Project

The Kela PV Plant is located in a cold and high-altitude area with great temperature fluctuations between day and night. According to the staff involved in the construction, the extreme temperature in winter can reach -30.6°C , and winds with gale force 8 or 9 often occur, making it difficult to walk. If the traditional PV plant O&M model is used, it is difficult for employees to handle the O&M of such large scale of plant. Therefore, the Kela PV Plant has chosen the digital and intelligent solution provided by Huawei FusionSolar and established an integrated O&M platform, building a benchmark for high-altitude hydro-solar hybrid smart PV plants.

More than 5300 Huawei smart string inverters serve as the "heart" of the PV plant with a high protection rating of IP66, ensuring stable and reliable operations in extreme cold environments on plateaus. FusionSolar's unique patented Smart String-level Disconnection (SSLD) technology can intelligently identify DC side faults and implement automatic disconnection to avoid fire risks and ensure plant safety. The Smart I-V Curve Diagnosis can perform remote, online, and full-scanning health inspection to quickly locate faults. The smart CV diagnosis system checks more than 2 million PV modules onsite, identifies problems such as shading, hot spots, and microcracks. The Smart Co-Diagnosis System provides diagnosis reports for the plant, making O&M intelligent and accurate.