



# Macao smart grid power system

Can Smart Grid technology improve Macau's power supply?

"Using smart grid technologies, we've improved the stability and quality of Macau's power supply," says Evan Liu, the Director of Power and Networks Dispatch for Companhia de Electricidade de Macau (CEM).

Why does Macau need a power supply system?

As an international city, Macau has very high requirements for power supply quality and service quality. CEM needs advanced technologies to provide users with high-quality power and services and meet its commitment to sustainable development. CEM began automating its distribution network in 2000, completing the project in 2005.

What is the new energy ecosystem in Macau?

CEM believes that adequate stability, affordability, and clean efficiency are the three core elements of the new energy ecosystem. Given Macau's high cost of land and mature economy, the SAR Government formulated an energy supply strategy with CSG as the main supplier, supplemented by local power generation.

How many kV power lines are there in Guangdong & Macau?

CEM's network comprises 1,078 km high-voltage (220kV, 110kV and 66kV), 2,729 km 11kV medium-voltage and 1,042 km low-voltage cables. The power interconnection between Guangdong and Macau started in 1984 with the transmission of electricity to Macau through 110 kV transmission lines.

Is Macau a smart city?

Imbued with a unique and vibrant mix of Chinese and Portuguese culture, Macau enjoys a rich 450 years of history and remains a popular tourist destination. Today, its power industry continues to make an outstanding contribution to the city's prosperity and will form a key aspect of its transition into a smart city.

What is CEM doing in Macau?

In Macau's Dawan District, CEM is currently involved in constructing renewable energy sources such as offshore wind power and solar photovoltaic power generation. It's also involved in building hydropower renewable energy, such as pumped storage and natural gas combined-cycle power generation projects.

As of March 2024, Macau has 9 solar PV systems connected to the network, with a total installed capacity of 3,223 kWp, producing over four million kWh of green energy. It is anticipated that ...

As one of the leading companies in China's energy industry, China Southern Power Grid has strong industrial and R&D capabilities in the field of carbon-neutral smart power and energy systems. The China Southern Power Grid - University of Macau Joint Laboratory of Smart Power and Energy for Carbon Neutrality was officially unveiled in ...



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CEM develops the Smart Grid roadmap to cope with Macao's sustainable growth. Important Notice. CEM eService. Contact Us. Download Area. FAQ. ... Smart Living Smart Living Electric Vehicle (EV) Charge in Public or Private Locations ... Smart City Smart Meters Smart Streetlight Photovoltaic System (PV) Introduction Application Procedure Feed-in ...

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Local scientist and smart energy expert Zhang Hongcai says Macao can transition to a more sustainable and inclusive energy future - and solar is the way forward.

The smart grid is an innovative power system based on information and communication technology. It realizes real-time monitoring, intelligent scheduling, and optimal management of the power system through smart sensors, communication networks, and computer technology.

The Smart Grid is generally seen as the ultimate solution to enhance power supply reliability, empower customers' energy decision, optimize capital and operational efficiency, reduce emissions and improve social productivity and economic growth.

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With the Macau grid connecting to the China Southern Power Grid (CSG), CEM is a public utility company with the exclusive rights to transmit, distribute, and sell electricity in Macau. Covering just 32 square meters, Macau has a very high load density, exceeding 1 million kilowatts.

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