univers

Univers Deploys Cambodia's First Centralized Grid Control System

CMCS delivering grid stability, tie-line control, and centralized renewable energy management

2,000 MW	14+ Stations	1st Overseas	Tie-Line Control
Total Capacity	PV, BESS & Wind	CMCS Deployment	Standout Feature

Project Overview

A leading national utility responsible for the generation, transmission, and distribution of energy across Cambodia is spearheading the country's transition to renewable energy. With a rapidly growing portfolio of solar, wind, and storage assets causing supply-demand imbalances and grid instability, the Customer needed a unified command centre. Univers was selected to deploy its Centralized Monitoring and Control System (CMCS) — the first of its kind in Cambodia — connecting a total capacity of 2,000 MW across 4 BESS stations, 10 PV stations, and wind farms.

Challenges → Solutions

Grid instability & outages:

The CMCS provides centralized monitoring across all 14+ renewable stations, balancing intermittent solar and wind output to reduce supply-demand imbalances and prevent large-scale outages.

Cross-border dependency:

A dedicated Tie-Line Control module monitors the 250 MW interconnection with a neighbouring country, ensuring imports stay within limits and preventing reverse power flow — securing the critical cross-border link.

Lack of grid intelligence:

A Unified Data Platform integrates real-time generation data with frequency and voltage regulation, providing operators with a centralized dashboard for predictive maintenance and informed decisions.

Tie-Line Control: The Game Changer

Cambodia depends on a 250 MW interconnection with a neighbouring country for grid frequency stability. The CMCS Tie-Line Control module monitors and manages power flow in real time — automatically keeping imports within the agreed limit and preventing reverse feed. If the connection trips, the Frequency Control module maintains grid stability independently, significantly reducing the risk of cascading blackouts.



Outcomes:

Grid resilience:

Reduced risk of large-scale blackouts by balancing 2,000 MW of intermittent renewables with grid demand through centralized control.

Secure energy imports:

Automated Tie-Line management ensures stable, compliant power imports from a neighbouring country within the 250 MW cap.

Scalable architecture:

A future-proof foundation designed to expand alongside Cambodia's rapidly growing renewable energy capacity.