

Strengthening Kazakhstan's Energy Investment Climate through Grid Resilience and Modernization

The United States Energy Association improved Kazakhstan's grid stability through a FACTS project that reduced reliance on the Russian grid and addressed regional imbalances. This initiative reduced investment risk, enhanced renewable energy integration, and laid the groundwork for a more stable, transparent, and investor-ready energy sector.



The U.S. Energy Association (USEA), in partnership with the Kazakhstan Electricity Grid Operating Company (KEGOC), advanced the reliability and resilience of Kazakhstan's power system through the deployment of Flexible Alternating Current Transmission System (FACTS) technologies. This effort plays a critical role in de-risking the country's energy investment climate by addressing long-standing technical and operational vulnerabilities that have historically deterred private and foreign investment.

USEA provided customized engineering solutions and a phased implementation roadmap to enable KEGOC to stabilize voltage fluctuations, improve reactive power control, and increase the efficiency and

flexibility of the national transmission system.

These upgrades significantly enhance the grid's capacity to absorb renewable energy, manage variable power flows, and respond to regional imbalances.

Kazakhstan's grid has faced chronic challenges due to its deep interconnection with Russia and uncoordinated regional power exchange across Central Asia. These conditions have led to erratic voltage behavior, overloading of transmission corridors, and frequent risks of system instability. By helping KEGOC overcome these systemic issues, the program reduced operational risks and built a more predictable environment for investors and developers,

particularly in renewable energy. USEA's engagement has therefore contributed not only to technical modernization but also to broader energy sector reform by improving the transparency, stability, and investment-readiness of Kazakhstan's grid infrastructure. This foundation supports Kazakhstan's clean energy ambitions and fosters greater investor confidence in the country's evolving energy landscape.

Ultimately, this collaboration has improved the security and performance of Kazakhstan's power system, supported regional energy cooperation, and helped create the enabling conditions for future private-sector participation in grid expansion and decarbonization efforts.