

Enhancing Grid Resilience in Kazakhstan While Creating Opportunities for U.S. Energy Companies

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. The initiative enhanced power control and efficiency, supported renewable energy integration, showcased U.S. technologies, opened markets for U.S. firms, and bolstered U.S.–Central Asia energy cooperation.



The U.S. Energy Association (USEA) improved grid reliability and resilience in Kazakhstan and opened a new market for advanced U.S. transmission control technologies through a cutting-edge Flexible Alternating Current Transmission System (FACTS) project with the Kazakhstan Electricity Grid Operating Company (KEGOC).

By deploying FACTS technologies, USEA delivered tailored engineering solutions and a practical, phased roadmap that enables KEGOC to stabilize voltage, enhance reactive power control, and improve the efficiency and adaptability of Kazakhstan's national transmission system. These upgrades lay the foundation for more reliable

electricity delivery and the seamless integration of renewable energy sources.

The initiative directly addressed long-standing technical challenges stemming from Kazakhstan's interconnectedness with the Russian Grid and regional power imbalances. Fluctuating transit flows from Russia and uncoordinated regional dispatch across Central Asia had led to frequent voltage instability, overloaded transmission lines, and an increased risk of system separation – particularly in Northern Kazakhstan.

USEA's engagement not only offered engineering solutions to mitigate these issues but also elevated the visibility of

U.S. grid modernization technologies. By demonstrating the effectiveness of advanced American systems and design expertise, the program positioned U.S. firms as trusted partners in Kazakhstan's energy transformation.

As KEGOC proceeds with implementation, U.S. energy technology providers and engineering firms are well-placed to deliver additional services and solutions, reinforcing long-term commercial and strategic ties. Ultimately, this collaboration not only strengthened Kazakhstan's energy infrastructure but also deepened energy sector cooperation between the United States and Central Asia.