

From Crisis to Energy Security: A Six Point Agenda for Ukrainian/American Partnership

OVERVIEW

Ukraine's energy system has become a frontline in its fight for sovereignty. Russian strikes have decimated centralized infrastructure, exposing a critical vulnerability: conventional generation assets and transmission nodes are easy targets. The next phase of Ukraine's recovery demands a diversified energy architecture that blends resilient centralized capacity with flexible, distributed systems.

This challenge is also an opportunity for American industry.

The United States is uniquely positioned to lead Ukraine's energy recovery through:

- Deployment of U.S. LNG as a scalable, secure fuel source;
- Export of U.S.-made turbines, grid technologies, and digital controls;
- Integration of U.S. cybersecurity solutions to ensure operational continuity;
- Opening new commercial markets for U.S. energy firms in a transforming regional landscape.

Since 2014, the United States Energy Association (USEA) has served as a key technical partner in Ukraine's transition from post-Soviet isolation to modern energy integration. In collaboration with the U.S. Department of State and Ukrainian grid operator Ukrenergo, USEA led preparatory efforts for Ukraine's successful synchronization with the European Network of Transmission System Operators for Electricity (ENTSO-E). Between 2018 and 2021, USEA facilitated system modeling, simulation training, and grid stability testing that ultimately accelerated Ukraine and Moldova's full integration with the European grid by at least one year.

The United States Energy Association's (USEA) forward looking **Energy Security and Prosperity for America and its Allies (ESP2A)** initiative builds on USEA's 30-year partnership with Ukraine by aligning U.S. policy with implementation: securing the Ukrainian energy sector and driving growth for American energy companies.

I. A HYBRID APPROACH TO STRENGTHENING UKRAINE'S ENERGY SECURITY

The war in Ukraine has revealed the fragility of centralized energy infrastructure in active conflict zones. Centralized power plants and transmission nodes remain high-value targets.

To withstand these threats, Ukraine must shift toward an adaptive energy system built on a **dual foundation**:

- **Modernized centralized generation** for baseline capacity and industrial demand.
- **Distributed generation** (such as mobile gas turbines and microgrids) offering rapid deployment, flexibility, redundancy, and local control.

U.S. LNG, delivered through regional pipelines and virtual supply chains, is critical to both. It can power large turbines and feed smaller generation units that anchor hospitals, factories, and reconstructed cities. When coupled with **U.S.-developed digital controls**, these systems form **resilient grids** that maintain operations independent of vulnerable long-distance transmission corridors.

II. U.S. COMMERCIAL ADVANTAGE: LNG, TECHNOLOGY, AND INVESTMENT

Ukraine's urgent energy needs align with areas of American industrial strength. By partnering with Ukraine, the U.S. can enter new markets, expand its LNG footprint, and showcase the global competitiveness of its energy technology and engineering sectors.

Strategic commercial opportunities include:

- Long-term demand for **U.S. LNG exports**, with Ukraine serving as an anchor customer and employing its ample gas storage capacity to improve European energy security;
- Market expansion for **U.S.-manufactured gas turbines, compressors, and metering systems**;
- Scalable deployment of **U.S. grid-enhancing technologies (GETs)** to modernize transmission and distribution networks;
- Growth of **U.S. cybersecurity and digital grid platforms** in high-risk, high-visibility environments.

III. A SIX-POINT AGENDA FOR U.S. ACTION

The **ESP2A** framework outlines a practical pathway for converting these opportunities into measurable outcomes, linking U.S. energy exports to Ukraine's recovery through targeted investment, technical support, and policy coordination.

1. Expand U.S. LNG Supply and Delivery Infrastructure

Objective: Position U.S. LNG as a cornerstone of Ukraine's energy reconstruction and European energy security.

Actions:

- Deliver U.S. LNG through the **Vertical Gas Corridor** in cooperation with regional partners in Greece, Bulgaria, Romania, and Moldova
- Support buildout of LNG storage, regasification, and distribution nodes;
- Promote long-term commercial agreements between U.S. LNG exporters and Ukrainian buyers;
- Leverage U.S. development finance tools to underwrite gas infrastructure projects.

2. Deploy U.S. Turbines, Batteries and Distributed Generation Units

Objective: Deliver flexible, fuel-efficient power capacity across Ukraine.

Actions:

- Finance mobile turbines and modular microgrids via DFC, EXIM, and private-sector channels;
- Prioritize high-impact zones: industrial hubs, border towns, and reconstructed municipalities;
- Combine with solar, battery storage, and U.S. digital controls for hybrid energy resilience;
- Embed U.S. operations and maintenance (O&M) support to create local jobs and ensure system uptime.

3. Embed Grid-Enhancing Technologies (GETs) in Transmission and Distribution

Objective: Upgrade legacy grid infrastructure to enable modern power flow and reduce congestion.

Actions:

- Assess deployment potential with USEA technical teams and the Ukrainian TSOs and DSOs;
- Develop bankable cost-recovery mechanisms with Ukraine's energy regulator;
- Integrate advanced battery energy storage systems (BESS) as a complementary grid-enhancing measure to improve system flexibility, stabilize frequency, and provide reserve capacity;
- Pilot **flagship GET corridors** to showcase U.S. technology in live environments.

4. Strengthen Regional Interconnections with U.S. Equipment

Objective: Ensure Ukraine's grid can trade power and stabilize frequency with its neighbors.

Projects of Interest:

- **Increase the Capacity of the Rzeszów–Khmelnyskyi (Poland–Ukraine) Transmission Corridor:** Using

- American topology optimization and grid control technologies;
- **Suceava–Chernivtsi (Romania–Ukraine):** Reinforce a key southern interconnection for export and import flexibility;
- Equip these links with U.S. automation, relay protection, and digital monitoring platforms.

5. Enable U.S. Firms in Ukraine to Trade Energy Freely with Europe

Objective: Clear regulatory and technical hurdles to integrating Ukrainian gas and electricity markets with wholesale markets in Europe.

Actions:

- Establish a U.S. led **Project Management Office (PMO)** in Kyiv to coordinate market integration initiatives with Ukraine's neighbors;
- Conduct a comprehensive **market integration Gap Assessment** with Ukraine's transmission system and market operators;
- Align grid and market protocols with EU frameworks to lower the cost and complexity of cross-border energy trade for U.S. firms operating in Ukraine.

6. Reinforce Cybersecurity and Operational Resilience

Objective: Protect digital grid infrastructure and ensure continuity under threat conditions.

Actions:

- Partner with Ukrainian cyber firms to embed U.S.-developed cybersecurity hardware and software in critical control systems;
- Train Ukrainian operators in operational technology (OT) best practices;
- Establish a **regional threat intelligence hub** (Ukraine, Moldova, Romania) using ESP2A's architecture and American cyber tools.

IV. CONCLUSION: U.S. ENERGY LEADERSHIP, U.S. MARKET GROWTH

Ukraine's recovery is a test of resilience and an opportunity for commercial partnership. By supplying LNG, deploying technologies, and shaping energy systems, the United States can lock in long-term economic returns while advancing stability in one of the world's most strategically contested regions.

Through the **ESP2A framework**, the U.S. can:

- **Expand LNG exports** and establish Ukraine as a downstream anchor;
- **Open commercial markets** for American engineering, gas turbines, grid technologies, batteries, and cybersecurity;
- **Strengthen U.S. supply chains** through on-the-ground deployment in a real-world stress environment.

This is an energy policy that delivers for Ukraine and for American workers, exporters, and innovators.



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Founded in 1924, the United States Energy Association (USEA) is a nonprofit, nonpartisan, and non-lobbying organization that serves as a neutral forum for dialogue across the global energy sector. USEA's mission rests on two pillars: first, convening stakeholders to exchange insights on policy, regulation, science, technology and finance to advance reliable, affordable energy for economic growth and prosperity; and second, partnering with the U.S. Government, members, and international allies to expand access to U.S. energy resources and technology to strengthen energy security worldwide.

With over 100 member organizations, USEA's members include government agencies, utilities, architect and engineering firms, nonprofits, think tanks, academic institutions, Fortune 500 companies, and leading engineering consultancies that span the breadth of energy sources and technology. As an industry convener, USEA provides a trusted, nonpartisan, and technology-neutral forum to inform policy discussions, highlight innovation, and chart pathways for strengthening U.S. energy leadership. USEA also hosts flagship events, webinars, briefings, and workshops to advance dialogue on emerging energy issues.

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