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Dushanbe, Tajikistan. Cover photo by Galiya Damyarova for the USAID Power Central Asia Activity

The USAID Power Central Asia Activity

ANNUAL REPORT 2022 ⚡

Activity Year Two



The USAID Power Central Asia Activity

The USAID Power Central Asia Activity supports the five Central Asian countries of **Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan** to implement energy sector reforms and achieve their clean energy goals, promoting integration of renewable energy generation, improving energy efficiency, and advancing the regional electricity market to allow for smooth cross-border and regional power trade. Taken together, these activities improve energy system resiliency and promote economic growth and social development in Central Asia.

Bishkek, the Kyrgyz Republic



IMPLEMENTATION PERIOD

October 2020 - September 2025



BUDGET

\$39 million



CONTACTS

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EXECUTIVE SUMMARY

RESULTS



16 policies proposed, with 3 adopted and implemented by the governments



\$1 billion in investment committed by developers



37 megawatt (MW) (renewable energy) and 1,167 mw (gas) contracted



3.5 million tons of carbon dioxide (CO₂) reduced/ avoided



41 institutions supported



952 energy specialists trained

In its second year (October 2021 – September 2022), the USAID Power Central Asia Activity coordinated closely with the USAID-funded Power the Future and Central Asia Regional Electricity Market (CAREM) Activities, particularly as the latter activities closed in May 2022 with selected tasks transitioned to Power Central Asia. The USAID Power Central Asia Activity also coordinates with the broader USAID/Central Asia regional energy portfolio, including partnerships with the U.S. Energy Association (USEA), the National Association of Regulatory Utility Commissioners, and the USAID Regional Water and Vulnerable Environment Activity. Power Central Asia has established close cooperation with International Financial Institutions, such as the World Bank, European Bank for Reconstruction and Development, and Asian Development Bank to advance market reforms and leverage investments in the electricity sector. Power Central Asia also expanded its work in environmental compliance and integration of Gender Equality and Social Inclusion across all project activities.

Working in these five countries of **Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan**, Power Central Asia has three main objectives and **crossing cutting areas**, where the activity implements.

- **NATIONAL MARKET LIBERALIZATION REFORMS.** Support the Central Asian countries to update their national energy strategies and develop optimal market design, including legal, institutional, regulatory (LIR), and technical frameworks. USAID also works to establish cost reflective tariff methodologies and promote utility modernization and cybersecurity.
- **CLEAN ENERGY.** Support efforts by the Central Asian governments to scale up clean and renewable energy in the region by developing strategies and providing assistance to integrate clean energy and energy efficiency into energy planning. USAID promotes private sector investment in clean and renewable energy.
- **REGIONAL POWER MARKET.** Build on USAID's long-term support for regional energy cooperation by enabling cross-border electricity trade and open access to generation and transmission networks. The Activity also works to develop a regional electricity market model, harmonizing technical and market frameworks.
- **CROSS-CUTTING.** Training and education, increasing private sector investment, utilizing the expertise of local entities, and ensuring gender equality and inclusivity.

KAZAKHSTAN

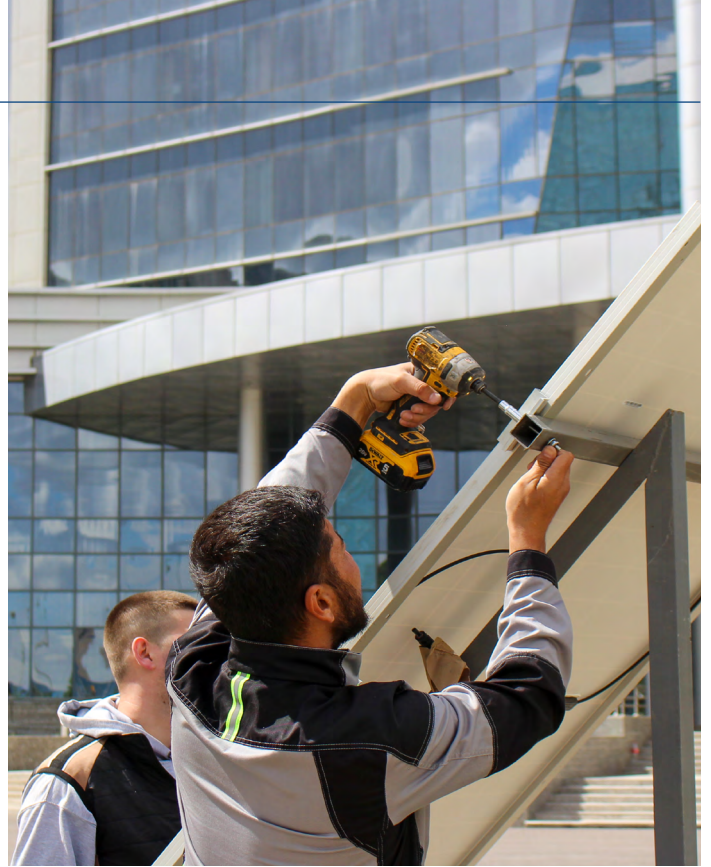
26.5M tCO_2
projected greenhouse gas emissions
reduced or avoided



428 energy
specialists trained



15 institutions
supported



KEGOC, Astana, Kazakhstan



Kapchagay, Kazakhstan
Objective 1



Almaty University of Power Engineering and Telecommunications, Almaty, Kazakhstan

National market liberalization reforms

Draft Concept of Kazakhstan Power Sector Development

The USAID Power Central Asia Activity improved the regulatory framework for the energy sector through completion of the legal, institutional, and regulatory review report and Electricity Market Council Study and incorporation of their recommendations by the government in the draft Concept of Kazakhstan Power Sector Development until 2035.

Automatic metering control system for distribution companies

To enhance distribution companies' operations, completed a comprehensive assessment of an automatic metering control system that will reduce system losses, a priority area for improving distribution companies' operational and financial performance.

Support to Committee for Regulation of Natural Monopolies

Improved the capacity of the regulator, the Committee for Regulation of Natural Monopolies, on priority topics in market regulation, including the tariff framework, consumer protection, and public-private partnerships.

Objective 2

Clean energy

Renewable Energy technical assistance, auction preparations, tariffs and battery energy storage system

Provided extensive technical assistance to the Ministry of Energy and other stakeholders to advance renewable energy development, including renewable energy auction pre-qualification requirements, renewable energy tariff indexation, and battery energy storage systems; promoting investment in renewable energy zones; and strengthening the hydropower legal and regulatory framework.

Corporate Low Carbon Strategies

Supported low carbon strategies implementation for key players (Samruk Energy, KEGOC and Mangystau Regional Electricity Network Company) by providing tailored technical expertise through consultations, workshops, and studies. This assistance helped Samruk Energy to prepare its energy transition plan.

Rooftop Solar Power

Launched a rooftop solar pilot project in Almaty and a battery energy storage system pilot with Samruk Energy to demonstrate new technologies contributing to a low-carbon path.

Demand Response Program

Finalized a Demand Response Program study with Heidelberg Cement and Irtys Karaganda Water Channel Company and presented its findings to KEGOC.

Renewable Energy Auctions

Improved **renewable energy policies** and regulations to leverage an estimated US\$1,031 million of new investment by developers in Kazakhstan through 2021 renewable energy auctions and 2022 auctions for flexible capacity.

The auctions for **flexible generation** resulted in 1,166.5 megawatt (MW), while the 2022 **renewable energy auctions** resulted in 440 MW of renewable energy.

The implementation of these renewable energy projects is expected to **reduce greenhouse gas emissions** by at least 26.5 million tons of CO₂ over a 15-year period.

\$1,031 million

estimated in new investments

1,166.5 MW

flexible generation auctioned

440 MW

renewable energy auctioned in 2022

2022 Auctions Results

10 projects selected:



400 MW



40 MW

Reduced wind power project costs by up to **42.5%**

KYRGYZ REPUBLIC

Objective 1

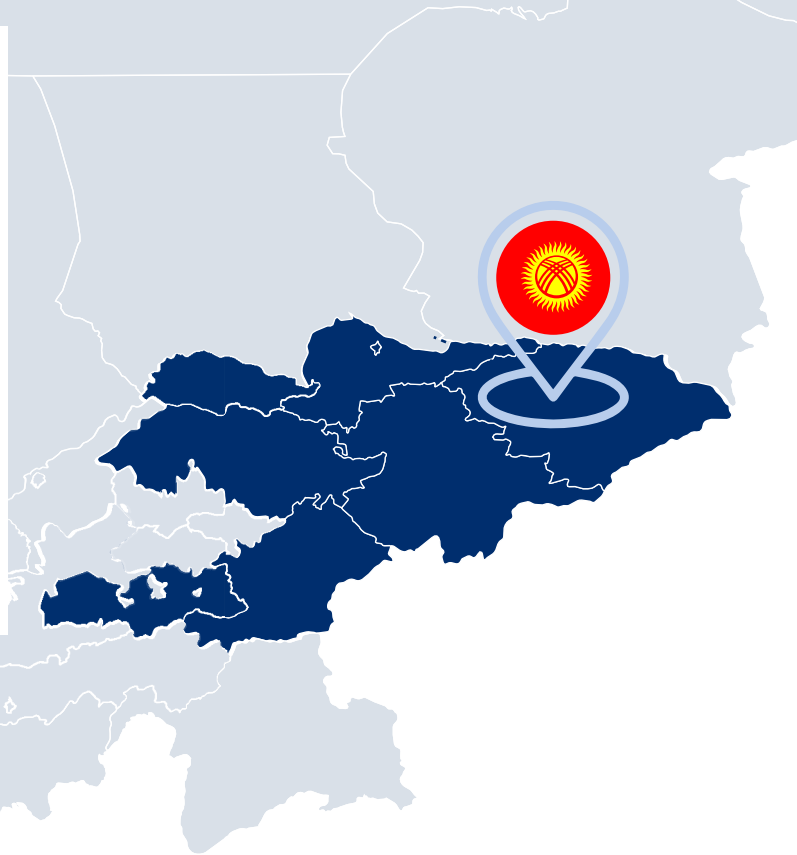
National market liberalization reforms

Support to Kyrgyz energy sector Regulator

USAID Power Central Asia improved the legal framework and capacity of the Regulator on licensing regulation and regulatory reporting and supported the development of their website to improve the transparency of energy sector regulation.

Metering infrastructure improvement

Supported the Kyrgyz Electricity Settlement Centre (KESC) by procuring 103 meters to improve metering infrastructure, and updated the rules and regulations to establish a market operator.



Objective 2

Clean energy

Renewable Energy Investment Support

Worked with stakeholders to develop the required technical tools and legal, regulatory, and market frameworks to attract private investment for renewable energy development and to enable the competitive procurement of renewable energy. Further created an assessment of renewable energy zones with a local working group, organized the first-national renewable energy procurement, prepared for potential small-scale on-grid photovoltaic projects, and enabled Kyrgyz hydropower plants to trade balancing and ancillary services with Kazakhstan and Uzbekistan. USAID's assistance directly contributed to the government's capacity and it expressed an interest in conducting negotiations with international companies and investors to build an estimated 1,700 MW of variable renewable energy projects.

Rooftop Solar Power

Worked with local partners, such as the Kyrgyz State Technical University, to procure and install an 80-kilowatt (kW) on-grid rooftop solar system to investigate alternative solutions for generating variable renewable energy.



191



energy specialists trained

7



institutions supported

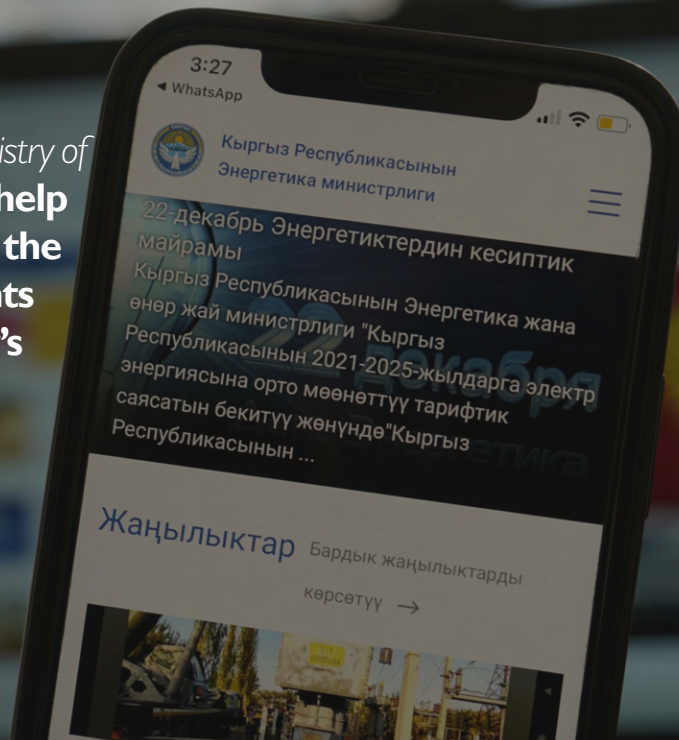
Establishing a Gender Council at the Ministry

In August 2022, the Ministry of Energy of the Kyrgyz Republic requested USAID Power Central Asia's assistance to establish a Gender Council under the Ministry. This institutional body will help govern activities aimed at empowering women and promoting gender equality in the energy sector. USAID is proud to support the launch of this initiative with the representatives of the Kyrgyz energy sector stakeholders moving forward.

“

The official website [of the Ministry of Energy of the Kyrgyz Republic] will help inform and communicate to the public about the achievements and prospects in the country's energy industry.

*Acting Minister of Energy
S.U. Sultanbekov
December 2022*



New websites for the Ministry of Energy

In December 2022, USAID and the Ministry of Energy of the Kyrgyz Republic launched two new websites for the Ministry and the Department for Regulation of the Fuel and Energy Complex. This tool will help communicate and share the news, updates, and key energy sector developments with the public.


minenergo.gov.kg

regultek.gov.kg

USAID's Power Central Asia Activity has fully supported the Ministry in developing both websites and training specialists on the websites' administration.

TAJIKISTAN



**127 energy
specialists** trained



8 institutions
supported

Nurek Hydropower Plant, Tajikistan
Objective 1

National market liberalization reforms

Commercial Agreements development for utilities

USAID Power Central Asia developed three key commercial agreements among the utilities:

1. the transmission service agreement,
2. the electricity supply agreement, and
3. a service level agreement between the transmission and the distribution companies.

These agreements will improve the market operation and enhance performance, and coordination among companies. Built the capacity of the utilities on financial management and prepared a corporate finance capital budgeting model for Barki Tojik.

Grid Code improvement for Ministry of Energy and Water Resources (MEWR)

Provided capacity-building to the Transmission Grid Code Working Group that resulted in the revision and improvement of the Grid Code, with the Ministry of Energy and Water Resources' concurrence.

Anti-Monopoly Service in energy market regulation

Increased the Anti-Monopoly Service's competencies in energy market regulation and IT infrastructure, and developed technical rules, regulations, and standards for energy sector governance.

Updated energy legislation

Initiated an update of the Long-term Network Development Plan (which is part of the Power Sector Master Plan) and related energy legislation.

Installed communication infrastructure for electronic document management system

Procured and installed the IT and communication infrastructure for an electronic document management system at the Ministry of Energy and Water Resources to help it communicate and interface with energy utilities and critical stakeholders to be able to supervise the ongoing transformation of the energy sector.

The aim of this technology is to automate the Ministry's business processes.

Objective 2

Clean energy



Renewable Energy for MEWR (solar and wind projects)

Built the Ministry of Energy and Water Resources' capacity on a competitive procurement approach to renewable energy and helped to set up 700MW goals for new solar and wind projects in the North of the country.

Assisted in the review and update of the legal and regulatory framework for renewable energy projects and prepared a draft Power Purchase Agreement for negotiations with private investors. Supported the identification of renewable energy sites and zones and helped with studies on renewable energy integration.



Energy loss reduction support

Supported the Ministry of Energy and Water Resources and a distribution company in diagnosing technical and commercial losses in Dushanbe city. Prepared a loss reduction plan and started implementation of pilot loss reduction measures that resulted in substantial improvement at a district-wide substation in a nine-month period (serving 70,000 customers).



Solar Power and Battery Energy Storage System Access for off-grid communities

Supported the Ministry of Energy and Water Resources and Pamir Energy to provide off-grid communities in the Pamir region with clean, affordable, and secure access to electricity by providing technical assistance for designing the expansion of the Murghab Solar Power Plant and a battery energy storage system. Further preparations are underway on a concept for a new Khorog Solar Power Plant and battery energy storage system pilot.



Association of Renewable Energy of Tajikistan, Dushanbe, Tajikistan



Firdawsi district, Dushanbe, Tajikistan



First Renewable Energy Conference, Dushanbe, Tajikistan

TURKMENISTAN

Objective 2

Clean energy

Methane Emissions Reduction

USAID Power Central Asia launched a methane emissions reduction program with a focus on the oil and gas sector and gained the attention of key government stakeholders who expressed a strong interest in methane emissions' reduction. This assistance will support the government to assess the requirements and commitments for joining the Global Methane Pledge.

Renewable Energy studies and potential sites

Prepared technical studies on renewable energy technologies and prices and potential sites for renewable energy. Built the technical knowledge and competencies of stakeholders on renewable energy by organizing online workshops.



Tashkent State Technical University, Tashkent, Uzbekistan



Cholpon-Ata, the Kyrgyz Republic

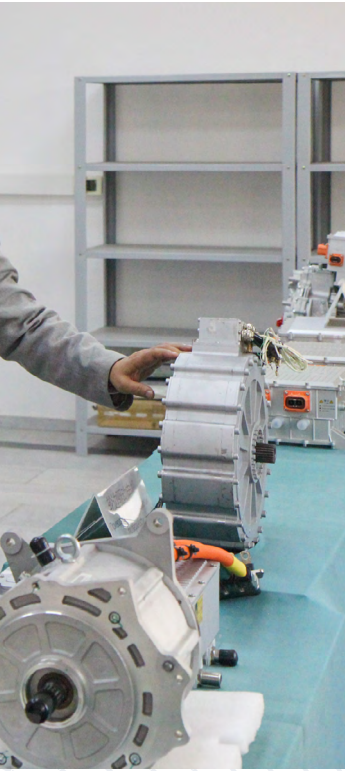


12 energy
specialists trained



4 institutions
supported

UZBEKISTAN



Objective 1

National market liberalization reforms

Energy Sector Governance

USAID Power Central Asia enhanced energy sector governance and built the competencies of the Anti-Monopoly Committee to establish an independent regulator, including developing a roadmap, and providing training to increase understanding of electricity markets principles.

Objective 2

Clean energy

Renewable Energy Regulations and Standards

Supported the Ministry of Energy to safely enable the increased development of renewable energy by reviewing and providing recommendations on the updated technical regulations and standards, renewable energy interconnection requirements of Variable Renewable Energy and Battery Energy Storage Systems plants, and technical standards for renewable energy equipment and operation.

Renewable Energy Investor's Guide and Green Hydrogen University Course

Created an environment attractive to private investment in renewable energy projects by drafting a Renewable Energy Investor's Guide that provides potential investors with an overview of the power sector, renewable energy developments, the main processes for renewable energy procurement, concluding a Power Purchase Agreement, and the requirements and implementation stages of renewable energy projects.

Collaborated with the Ministry of Innovative Development to design a modern green hydrogen course, to be delivered by Tashkent State Technical University. Utilizing the American Innovation Center for Central Asia platform, the USAID Power Central Asia identified the U.S.-based University of Delaware to develop and implement this new course.

Rooftop Solar Power

Supported the Ministry of Energy with assessing barriers and preparing concepts for grid-connected rooftop solar pilots that contribute to Uzbekistan's Presidential Initiatives on low-carbon development path.



180 energy
specialists trained



7 institutions
supported

REGIONAL WORK



Kapchagay Solar Power Plant, Konayev, Kazakhstan

American Innovation Center for Central Asia (AICCA)

Launched the American Innovation Center for Central Asia to promote the transfer of U.S. technologies to Central Asia. Further contracted two U.S. entities to advance **grid resilience and green hydrogen strategy** themes.



Regional Cooperation

Advanced regional cooperation between the utilities and conducted a regional workshop in August 2022, bringing together **65 representatives** from Central Asian distribution companies to share experiences and knowledge **on improving network planning and operational performance.**

Built **regional cooperation and knowledge transfer** between energy sector regulators in Central Asia and the Southern Caucasus on international best practices on **regulatory reforms**, including a joint USAID Power Central Asia - NARUC Workshop and Study Tour in Tbilisi, Georgia.

Worked with Central Asian partners to identify technical studies and national benefits for regional trade to advance regional cooperation on viable **regional electricity market (CAREM).**



Climate Change Mitigation

Facilitated the signing of a Memorandum of Understanding between USAID and the European Bank for Reconstruction and Development in support of Central Asian countries meeting climate mitigation targets.



Almaty University of Power Engineering and Telecommunications, Almaty, Kazakhstan



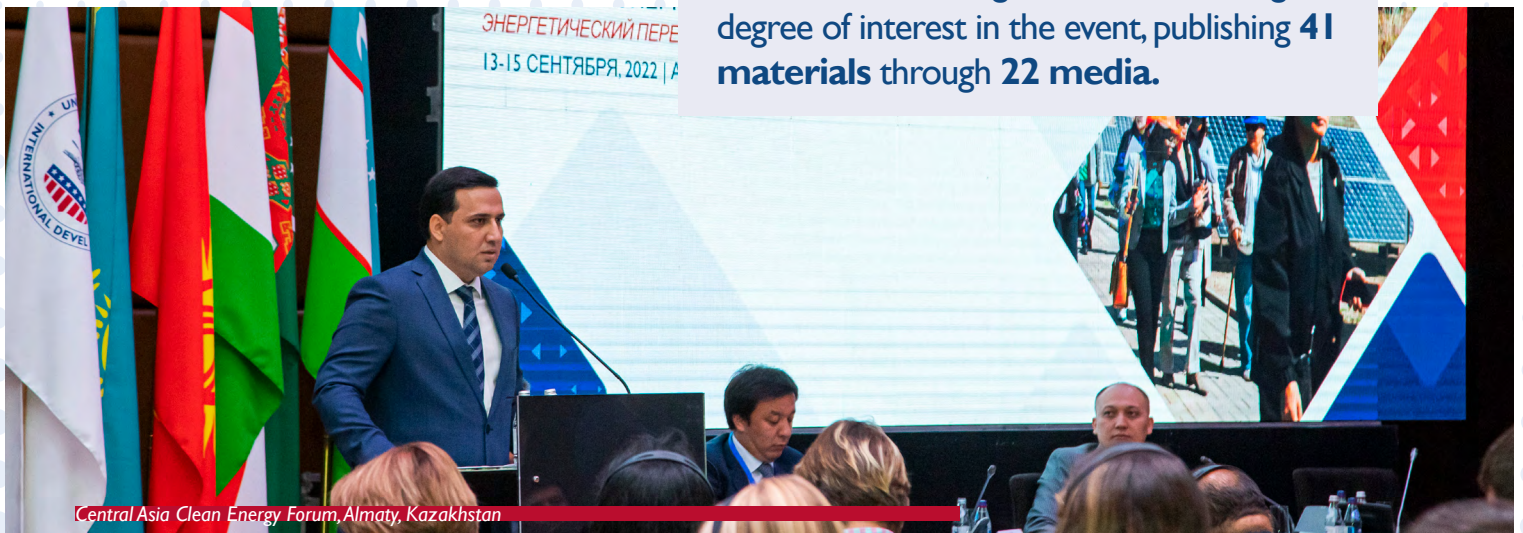
Tashkent State Technical University, Tashkent, Uzbekistan



300 participants
50 speakers

Central Asia Clean Energy Forum

The event brought together nearly **300 participants** from Central Asia and globally, including **50 speakers** from the region, the U.S., India, Saudi Arabia, Ukraine, Austria, and France. Media agencies showed a high degree of interest in the event, publishing **41 materials** through **22 media**.



Central Asia Clean Energy Forum, Almaty, Kazakhstan

CROSS-CUTTING THEMES

USAID Power Central Asia collaborated with USAID Missions, partner USAID-supported projects, International Financial Institutions, and counterparts to further the impact of its cross-cutting activities. Through these cross-cutting tasks, USAID Power Central Asia shares international best practices, including American innovation, with Central Asian stakeholders to achieve the needs and objectives of the U.S. Government, USAID, and the Central Asian governments more effectively.

Private investment

Supported the 2021 Renewable Energy Auctions and the 2021 and 2022 auctions for flexible capacity in Kazakhstan, leveraging an estimated US \$1,031 billion (bln) of new investment by developers in the country.

Environmental compliance

The environmental specialist monitored compliance according to the Environmental Mitigation and Monitoring Plan (EMMP) for Year Two activities. This plan recommended environmental determinations and identified activities for impact mitigation and monitoring to ensure that activities did not negatively impact the environment. The plan set the reporting requirements and schedules, as well as responsibilities, for ensuring environmental performance were at USAID standards.

Training and education

Helped build the capacities of the regional energy sector stakeholders by conducting targeted technical trainings for 952 energy specialists and 41 institutions. The Activity provided full scholarships to ten students from four Central Asian countries to participate in Central Asia's first-ever master's degree in the strategic management of renewable energy and energy efficiency through the Kazakh-German University.





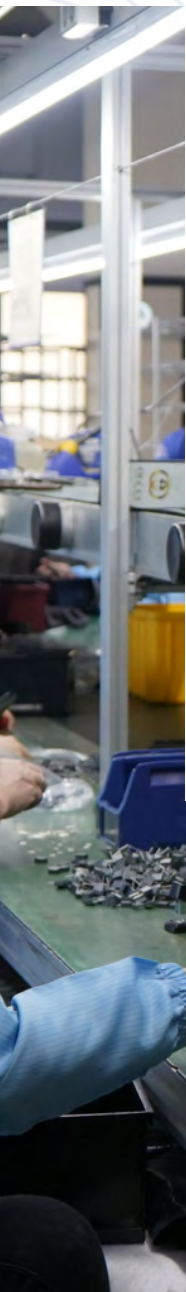
Kazakh-German University, Almaty, Kazakhstan

GENDER EQUALITY AND SOCIAL INCLUSION

Power Central Asia implemented a new Gender Equality and Social Inclusion (GESI) Action Plan and raised the awareness energy sector gender issues at regional technical workshop. The team also organized and participated in standalone events on women's empowerment and gender inclusion.

Women and Youth Mentorship

Power Central Asia is launching a six-month Women and Youth Mentorship Network program. Using a developmental approach, the Activity strives to foster trusting relationships by connecting 40 young professionals and students with experienced mentors from the energy industry. The mentors will provide personal guidance and advice on different fields of study and work relevant to the energy sector. In this way, the program will gather professionals and young people to share knowledge and experience, improve their capacities, and search for internship opportunities.





USAID
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 Kazakhstan



Kyrgyz Republic 

 Turkmenistan

Tajikistan 

 Uzbekistan



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