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The USAID Power Central Asia Activity

ANNUAL REPORT 2023

Cover photo by Yegor Zbrodko for the USAID Power Central Asia Activity.

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.

Tashkent, Uzbekistan

IMPLEMENTATION PERIOD

October 2020 - September 2025

BUDGET

$39 million

CONTACTS

Patrick Meyer, Energy Advisor
Activity Contracting Officer Representative (COR)
USAID Central Asia Mission, Almaty, Kazakhstan
pmeyer@usaid.gov

powercentralasia@tetratech.com
www.powercentralasia.org

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EXECUTIVE SUMMARY

In its third year of implementation (October 1, 2022 – September 30, 2023), the USAID Power Central Asia Activity **achieved several key results** across Central Asia. The Activity continued to coordinate with the broader USAID/ Central Asia regional energy portfolio and established close cooperation with International Financial Institutions (IFIs), 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. The Activity also expanded its work to integrate Gender and Social Inclusion across all project activities. The Activity works in the five Central Asian countries to advance progress towards the following three main objectives and crossing cutting areas.

- **NATIONAL MARKET LIBERALIZATION REFORMS.** Supports Central Asian countries to update their national energy strategies and develop optimal market designs, including legal, institutional, regulatory, and technical frameworks. The Activity also works to establish cost reflective tariff methodologies and promote utility modernization and cybersecurity.
- **CLEAN ENERGY.** Supports Central Asian governments' efforts to scale up renewable energy in the region by developing strategies, demonstrating the viability of technologies, facilitating private sector investment, and enabling the expansion and integration of renewable energy and energy efficiency in the region's power systems. Work includes methane emissions reduction and climate change initiatives.
- **REGIONAL POWER MARKET.** Builds on USAID's long-term support for regional energy cooperation by helping facilitate cross-border electricity trade and open access to generation and transmission networks. The Activity is helping establish a regional electricity market, including 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.

KEY RESULTS

15 policies proposed,with 3 adopted by the governments

2,056 megawatts (MW) clean energy contracted
(400 MW wind, 1,637 MW solar, and 19 MW hydropower)

45 institutions supported

$2.4 billion mobilized for clean energy

8.4 million tons of carbon dioxide (tCO_2) reduced / avoided

657 specialists trained
(483 male, 174 female)

HIGHLIGHTS

The USAID Power Central Asia Activity was recognized in two C5+1 statements:

C5+1 Leaders' Joint Statement

The New York Declaration: C5+1 Resilience through Security, Economic, and Energy Partnership

Enhancing Energy Security and Combating the Effects of Climate Change

> To enhance Central Asia's energy security, we remain committed to integrating regional energy systems to diversify and expand new energy export routes and reliably supply global markets. We also commit to redoubling efforts to increase clean energy production, methane mitigation projects, development of sustainable hydropower capacity, and energy efficiency, particularly by mobilizing public and private financing aimed at energy transition. **Through C5+1 programs such as USAID Power Central Asia, the United States and Central Asian states will unlock the economic benefits of regional, clean energy trade and a clean economy future.** We are committed to deepening cooperation to develop the capacity to meet growing global clean energy demands, including by potentially providing the world with safe, secure, and sustainable nuclear fuel supplies.

New York, The United States

September 21, 2023

By the presidents of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan, the United States of America, and the Republic of Uzbekistan.

C5+1 Regional Connectivity Ministerial in Samarkand

On October 24, U.S. Agency for International Development (USAID) Administrator Samantha Power and Ministers from the Republic of Uzbekistan, Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, and Turkmenistan met in Samarkand, Uzbekistan under the auspices of the C5+1 regional diplomatic platform.

During the C5+1 Ministerial, participants:

> Shared a desire to advance collective and country commitments to address the climate crisis, including through the increased use of renewable energy sources, implementing energy efficient technologies, rapidly reducing methane from fossil energy and other sectors, and developing "green" economies, taking into account the national circumstances and available resources of states;
>
> **Commended USAID's ongoing Power Central Asia initiative, which supports the C5 governments' national and regional priorities in energy security, clean energy development, and regional integration of energy systems** [...]

October 30, 2023

KAZAKHSTAN

In Kazakhstan, the USAID Power Central Asia Activity supported renewable energy initiatives such as renewable energy auctions, held in 2022 and 2023, and the commissioning of **26 renewable energy projects,** which together are expected to reduce or avoid greenhouse gas emissions by **4.9 million tons of CO_2.** Key activities include the following:

177 energy specialists trained

15 institutions supported

3 three policies developed (and one adopted)

Objective 1

National market liberalization reforms

Market Council Reforms

Advanced Market Council Reforms, which will help establish transparent sector rules and regulations and reduce state intervention, thereby helping attract private investment. After consultations with KZ Electricity and Power Market Operator (KOREM), the KZ Electricity Association (KEA), the Agency on Competition Protection, and other key stakeholders, the Activity finalized a Market Council report that reviewed the power sector's legal, institutional, and regulatory framework.

A high-level presentation was made to the Minister of Energy in September 2023. The proposed reforms are now included in the "Concept for the Development of KZ Power Sector for 2023-2029," a strategic document that will guide policy development and decision-making in the sector.

Supported KOREM with developing **a trading platform** for a new market model, launched in July 2023, with average trading volumes exceeding targets. Concurrently working on establishing a modern, cybersecurity-focused platform to optimize authentication processes and enhance bidder participation.

Loss Reduction Support

Assessed the technical losses of the Astana Distribution Company on the 0.4-220 kilovolt (kV) grid network to improve its operational performance and power system resilience. Collected data on the utility's distribution networks, transformers, cables, overhead lines, reactive power devices, peak and average loads, and feeder load rating. This information will be used to assess current levels of technical losses, identify their causes, and inform the development of a loss reduction strategy, including intelligent engineering solutions and low-cost budget initiatives.

Retail Market Reforms

Prepared recommendations for amending KZ retail market legislation and submitted this to the Committee for Regulation of Natural Monopolies for review. In addition, KEA requested assistance with developing recommendations for reforming the retail market based on the findings of the Activity's workshop on improving retail market regulation.

Moynak Hydropower Plant, Almaty, Kazakhstan

Objective 2

Clean energy

Renewable Energy Auctions

The Activity facilitated renewable energy auctions that, in 2022, led to the selection of **ten projects with a total capacity of 440 Megawatt** (MW) of renewable energy, leveraging $565.2 million of new investment in Kazakhstan. The Activity collaborated extensively with the Ministry of Energy, Financial Settlement Center, KOREM, and KZ Electricity Grid Operating Company (KEGOC) to complete the following: RE integration studies, improvements to RE policies and regulations, development of the RE Investors Guide and an RE Auctions Report, participation in auctions as observers, as well as capacity building and workshops for potential RE investors.

Total capacity procured through the auctions included **400 MW of wind and 40 MW of solar power**, and, in 2023, the selection of seven hydropower projects, totaling **19.3 MW.** This work was formally recognized by the Qazaq Green Association through an award and from KOREM through a letter of appreciation.

Following the conclusion of the 2022 RE auctions, prepared the **Renewable Energy Auctions Report 2018-2022**. The report describes the results of all RE auctions conducted in Kazakhstan from 2018 to 2022, presenting the latest development statistics, auctions procedures, and list of auctions winners and winning auction prices. Stakeholders welcomed the report, publishing it on their websites to inform potential investors.

Study tour for a delegation from Nepal, Astana, Kazakhstan

Presenting education materials for the Kazakh British Technical University, Almaty, Kazakhstan

Discussion with the stakeholders, Astana, Kazakhstan

Provided Technical Support for Renewable Energy Integration

Provided recommendations to KEGOC and other stakeholders on enhancing the power system to accommodate the operational impacts of planned variable RE generation. Developed and presented the study results of RE integration in the Mangystau Regional Electricity Network JSC (MRENC) grid to MRENC and other stakeholders.

Supported 1-Gigawatt Wind Farm Development and Investment

Provided technical and legal advice to the Ministry of Energy, Financial Settlement Center, and KEGOC on the development of a 1-Gigawatt wind farm with an energy storage system, resulting in a signed investment agreement and Power Purchase Agreement worth $1.65 billion, once closed.

Designed a Demand Response Program

Designed and started implementation of a time-of-use Demand Response Program (DRP) pilot at Satpayev Water Channel Company (SWCC). This company supplies water to industrial and agricultural sites in Central Kazakhstan by operating a 458 km water channel from the Irtysh River. The DRP includes installation of water metering equipment that will improve water and energy management and help balance the electricity grid.

Designed Rooftop Solar Power Pilot Projects

Designed two pilot rooftop solar (RTS) projects for two institutions in Almaty: Talud and the Regional Diagnostic Center medical facility. The Activity began procurement of the 52.32-kilowatt RTS system equipment for Talud.

Development and Implementation of Corporate Low Carbon Strategies

Supported implementation of low carbon strategies for key corporate players (Samruk Energy, KEGOC and MRENC) by providing tailored technical expertise through consultations, workshops, and studies.

Led Samruk Energy in developing a low carbon strategy. Provided additional support to Samruk-Energy by conducting 12 comprehensive workshops for 26 employees on low carbon development and Environment, Social, Governance (ESG) practices for corporate management.

Mangystau renewable energy integration study, Aktau, Kazakhstan

Methane emissions field measurement, Turkmenistan

Methane Emissions Reduction Initiatives

Supported the Methane Emissions Reduction Working Group of the Ministry of Energy, Ministry of Environment, and energy companies by preparing a comprehensive action plan to assess methane emissions in the oil and gas sector. This work informed the Kazakhstan's Government decision to join the Global Methane Pledge in 2023.

KYRGYZ REPUBLIC

138 energy specialists trained

8 institutions supported

6 six policies developed (and one adopted)

Objective 1

National market liberalization reforms

National Grid Code Development

Developed a comprehensive draft national Grid Code and technical rules on electricity installation, in collaboration with a Grid Code Working Group, established by the Activity and comprised of industry representatives and experts. The working group met weekly to develop a national Grid Code that establishes effective principles and procedures defining the technical relationships between the grid users, in line with national rules and legislation. Presented the draft Grid Code to technical representatives of the National Energy Grid of Kyrgyzstan (NEGK) and Ministry of Energy for feedback.

Metering Infrastructure of the Kyrgyz Electricity Settlement Center

Transferred 128 meters and 104 internet modems and IT equipment to the Kyrgyz Electricity Settlement Center (KESC) to improve their metering infrastructure. Delivered equipment through a formal handover ceremony, conducted with the Ministry of Energy. In addition, the Activity updated the rules and regulations to establish a market operator.

Amendments to Improve Kyrgyz Laws on Licensing and Electricity Industry

Completed a thorough legal analysis and prepared a draft law *"On Amendments to the Law on Licensing and the Law on Electric Power Industry,"* based on proposed amendments to: 1) the Law on Licensing and Permits, and 2) the Law on Electricity Industry.

At the request of the regulator, presented the proposed amendments to the key government ministries and stakeholders to deepen their understanding of the proposed licensing regime and legal amendments. As a result, the ministries supported making the proposed amendments to improve licensing in the Kyrgyz power sector. The Chairman of the Cabinet of Ministers submitted the amendments for consideration by the Jogorku Kenesh.

Loss Reduction Opportunities for Kochkor District Electricity Networks

Conducted a commercial loss assessment for the Kochkor District Electricity Networks (KDEN) and developed a Transformation Plan and Capacity Building Plan. The Plan aims to address losses caused by an absence of revenue protection measures, inefficient performance tracking, lack of standard operating procedures, imprecise energy balancing, billing inaccuracies, data reporting challenges, inefficient meter reading, limited access to meters, and insufficient training in revenue protection.

New metering equipment for KESC, Bishkek, the Kyrgyz Republic

Rooftop solar system for KSTU, Bishkek, the Kyrgyz Republic

Prime Minister and U.S. Ambassador visiting KSTU, Bishkek, the Kyrgyz Republic

Renewable energy zones field trip, the Kyrgyz Republic

Objective 2

Clean energy

Enabling Environment for Renewable Energy

Continued to strengthen the enabling environment for renewable energy investment and development through multiple activities. Assessed and advised on RE regulatory improvements, developed a bankable draft Power Purchase Agreement, and built the capacity of the Ministry of Energy and other power sector stakeholders. Completed and presented RE site assessment reports to the Ministry of Energy, power companies, developers, and other key stakeholders. Simulated the Kyrgyz power system for 2025 and 2030 scenarios for RE integration, presenting the results to the Ministry of Energy and International Financial Institutes.

Rooftop Solar Power for Kyrgyz State Technical University

Finalized the design, provision, and installation of an 80-kilowatt on-grid RTS for a local partner, Kyrgyz State Technical University (KSTU), the first-ever solar system of its kind in the Kyrgyz Republic. A formal handover to KSTU, attended by the Prime Minister, took place at the end of the year. The system will be used as an educational platform for the university and for demonstrating the viability of RTS to other universities and organizations. The Activity is preparing a manual as a guide for RTS development in the country.

Climate Change Impacts on Hydropower Generation

Analyzed data received on the Toktogul and Kambarata hydropower plants and reservoirs to develop a model and scenarios to assess climate change impacts of diminishing water flows and supplies for hydropower generation. Prepared a draft final report for presentation to stakeholders.

Gender Council under the Ministry of Energy.

At the Ministry of Energy's request, supported its efforts to establish a Gender Council as a Ministry Unit that will help govern activities aimed at empowering women and promoting gender equality in the energy sector. Supported preparation of the Gender and Social Inclusion (GESI) Implementation Action Plan.

TAJIKISTAN

Minister of Energy and the U.S. Ambassador, Dushanbe, Tajikistan

Objective 1

National market liberalization reforms

Commercial Agreements for Transmission and Distribution Utilities

Developed and finalized with stakeholders three key commercial agreements:

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 market operations and enhance performance and coordination among companies.

Supervisory Control and Data Acquisition Training for the System Operator and Utility

This SCADA training will improve their operations and distribution system planning.

Grid Code and Electricity Market Code

Completed and presented these to the Ministry of Energy and Water (MEWR) and other stakeholders. Provided capacity-building to the Transmission Grid Code Working Group that resulted in the revision and improvement of the Grid Code, with MEWR concurrence.

Draft Transmission Network Development Plan and Updated Associated Energy Legislation

After data collection and extensive consultation with stakeholders, prepared the draft Transmission Network Development Plan, which is part of the Power Sector Master Plan, and related energy legislation.

Technical Operation Rules

Completed preparation of (1) Draft Proposals for Technical Operation Rules, and (2) Rules for Technical Operation of Power Plants and Networks. Presented these documents in a public format for use for public hearings, in accordance with the Law of the Republic of Tajikistan on legal acts. Continued facilitating stakeholder agreement on these documents and harmonizing these with the Grid Code and regulatory requirements.

Tariff Methodologies for the Anti-Monopoly Service

Strengthened the regulatory functions of the Anti-Monopoly Service/Energy Regulation Department (AMS/ERD) by developing a Methodology for Calculation of Average Tariff and a Methodology for Calculation of Tariffs for End-users by Category and handed over the former to the AMS/ERD for government approval. Provided training to the AMS/ERD and utilities on the methodologies, including several dry run sessions to equip the utilities to prepare tariff applications and the regulator to review them. Translated the Methodology for Calculation of Average Tariff into Tajik and developed reporting forms and associated instructions.

Electronic Document Management System for the Ministry of Energy and Water Resources.

The electronic document management system (e-DMS) will improve, automate, and formalize the ministry's business processes. Prior to this, installed the IT and communication infrastructure for the e-DMS at MEWR.

Objective 2

Clean energy

Renewable Energy Zones and a 50 MW Solar Project

Finalized a revised report identifying RE zones and sites and submitted it to the MEWR. This work, conducted with a national association, on "Identification of RE Zones and Sites" was selected by the Association of Energy Engineers for the 2023 Former Soviet Union Region Energy Project of the Year, which was awarded in October 2023. At the Ministry's request, selected a site for a 50 MW solar project and initiated a pre-feasibility study to assess the project's viability.

Equipment handover ceremony, Dushanbe, Tajikistan

Tariff dry run with stakeholders, Dushanbe, Tajikistan

Power Equipment to the Ministry of Energy and Water Resources and the transmission company

Facilitated transfer and formally handed over electricity equipment worth $4.5 million to the MEWR and the transmission company. This equipment will be installed at key substations to help reduce technical losses caused by overloaded transmission lines.

Renewable Energy Legal Framework and Prepared Draft Power Purchase Agreement

Assisted in the review and update of the legal and regulatory framework for RE projects and prepared a draft Power Purchase Agreement for negotiations with private investors. This work was conducted by reviewing international Power Purchase Agreement requirements and preparing a draft agreement for stakeholder discussion. As previously noted, the Activity identified RE sites and zones and prepared studies on RE integration to further support investment opportunities.

86 energy specialists trained

7 institutions supported

4 four policies developed (and one adopted)

TURKMENISTAN

21 energy specialists trained

4 institutions supported

Objective 2

Clean energy

Methane Emissions Reduction Roadmap

Advanced development of an Implementation Action Plan and a Roadmap for methane emissions reduction through multiple working group discussions with key stakeholders. Started data collection with national oil and gas companies, Turkmenoil and Turkmengas. This assistance directly informed and supported the government in its assessment of the requirements and commitments for joining the Global Methane Pledge, for announcement at the 28th United Nations Climate Change Conference (COP28).

International Scientific Conference

Delivered a presentation at the International Scientific Conference in 2023, with the theme "Energy Perspectives, New Technologies, and Environmental Aspects in the Development of Hydrocarbon Resources." The conference served as a platform to emphasize Turkmenistan's dedication to conducting comprehensive research on methane emissions across the energy sector. Laid the Groundwork for Development of a Low Carbon Development Strategy. Finalized an inception report for the development of a Low Carbon Development Strategy that focuses on the Turkmenistan energy sector but also considers other high greenhouse gas-emitting sectors such as transport, industry, mining, and hydrogen, among others. Based on this report, the Activity began assessing decarbonization pathways and modeling scenarios.

Renewable Energy (RE) Regulatory Framework

Prepared an analysis and made recommendations for improving the RE legal and regulatory framework to attract private investment in the RE sector. Began preparations for an on-line RE Legal and Regulatory Framework workshop for stakeholders.

Low Carbon Development Strategy

Finalized an inception report for the development of a Low Carbon Development Strategy that focuses on the Turkmenistan energy sector but also considers other high greenhouse gas-emitting sectors such as transport, industry, mining, and hydrogen, among others. Based on this report, the Activity began assessing decarbonization pathways and modeling scenarios.

Methane emissions field measurement, Turkmenistan

UZBEKISTAN

In Uzbekistan, USAID Power Central Asia supported renewable energy initiatives that are expected to reduce greenhouse gas emissions by **3.5 million tons of CO_2** through commissioning a 100 MW solar plant in Samarkand in May 2022, as well as through investments and Power Purchase Agreements signed for 1,596.6 MW of solar projects. The Activity supported the following key initiatives:

Objective 1

National market liberalization reforms

Electricity Market Regulation and Electricity Law Revisions

Analyzed the draft law "On Electricity" and submitted a new draft with recommendations to the Ministry of Energy. Held workshops for the Ministry of Energy and the Antimonopoly Committee on market regulation and shared two white papers on independent regulators and key performance indicators to enhance sector governance.

Analyses and Plans to Improve Utility Performance in Asaka District

Completed a comprehensive diagnostic report of the utility's performance, including its commercial losses, in the pilot district of Asaka, which informed a Transformation Plan and a Capacity Building Plan to improve the utility's operational performance. The Capacity Building Plan also drew from the findings of a skills assessment and includes a roadmap of capacity-building activities for Asaka district staff to enhance their knowledge, skills and performance.

235 energy specialists trained

11 institutions supported

2 policies developed and proposed

Study Tour for Central Asian professionals, Tashkent, Uzbekistan

Objective 2

Clean energy

System Adequacy and RE Integration Study

Provided extensive training for key stakeholders on PLEXOS software modeling for RE grid integration through weekly online coordination and training sessions, held since November 2022. This collaboration led to developing an up-to-date power system model in PLEXOS that shows the effects of future increases in load and in renewable energy that meet the latest government targets as well as measures required to accommodate this increase.

Tashkent State Technical University, Tashkent, Uzbekistan

Renewable Energy Investors' Guide

Finalized a Renewable Energy Investors' Guide, available in English, incorporating comments from the Ministry of Energy and other stakeholders. The Guide will help attract private investment in RE projects by providing an overview for potential investors of the power sector, RE developments, the main processes for RE procurement, including concluding a Power Purchase Agreement, and the requirements and implementation stages for RE project development.

Wind Measurement Campaign

Arranged for the installation of two Light Detection and Ranging (LiDAR) units at two renewable energy sites in the Kashkadarya region for a 12-month wind measurement campaign. Also conducted training for local energy specialists on LiDAR assembly and data transfer.

Grid Code Amendments

Prepared recommendations to amend Uzbekistan's Grid Code to facilitate renewable energy integration.

Rooftop Solar and Battery Energy Storage Pilots

Selected the Pediatric Department of the Kitab District Medical Facility building for installation of RTS and battery energy storage systems. Completed the technical and financial evaluations, prepared design documents, and engaged a service provider to implement this pilot. In addition, selected the Izboskan Medical Facility for a RTS pilot and completed a detailed design for a 72 kilowatt on-grid RTS system. Currently preparing a Scope of Work for its engineering, installation, and commissioning as well as drafting an outline of a manual for RTS project developers. These projects support the Ministry of Energy in piloting the viability of grid-connected RTS pilots that will contribute to Uzbekistan's Presidential Initiatives on low-carbon development.

American Innovation Center for Central Asia (AICCA)

The USAID Power Central Asia Activity supported knowledge sharing and the transfer of U.S. technologies to Central Asia under USAID's AICCA, by contracting a U.S. university and a U.S. company to build capacity on green hydrogen development and strengthen grid resilience in Uzbekistan, respectively.

Improved Grid Efficiency and Resilience

Funded the provision of a General Electric (GE) regional Supervisory Control and Data Acquisition (SCADA) video-wall and a Wide-Area Monitoring System (WAMS) for the Coordinating Dispatch Center Energia (CDC) in Tashkent. This represents $1.4 million worth of modern energy sector management equipment and software that will enhance CDC Energia's operational capabilities, facilitate regional electricity trade, and significantly enhance the region's ability to manage and monitor its electricity grid.

Green Hydrogen Course Curriculum for Tashkent State Technical University

At the request of the Agency for Innovative Development, facilitated a partnership between Uzbekistan's TSTU and the University of Delaware in the United States to develop a new curriculum for a university course focused on green hydrogen development as a modern renewable energy solution. The Activity funded experts from the University of Delaware to develop the course, in collaboration with TSTU faculty members and energy experts. In May 2023, the course curriculum and materials were delivered to TSTU at a formal transfer ceremony, with participation from the Ministry of Energy and the Ministry of Education, Science, and Innovations. The Activity continues to assist TSTU with its efforts to integrate the course into their curriculum for the 2023 fall semester.

REGIONAL WORK

Coordinating Dispatch Center Energia, Tashkent, Uzbekistan

Support the establishment of a Regional Electricity Market

The USAID Power Central Asia Activity worked with Central Asian partners to implement the following activities to advance the development of the Central Asia Regional Electricity Market (CAREM).

Meeting with stakeholders, Tashkent, Uzbekistan

National Strategies for Participation in CAREM

Conducted high-level, in-person meetings with stakeholders from Kazakhstan, the Kyrgyz Republic, Tajikistan, and Uzbekistan and collected relevant information and data to customize national strategies. Prepared initial draft National Strategies for the four countries in consultation with counterparts, which will advance national efforts and regional cooperation for establishing a viable regional electricity market.

Regional Power System Studies

Upon multiple consultations with counterparts in four Central Asian countries, identified priority focal areas for the technical studies required to help establish CAREM, and developed their Scopes of Work. These studies will focus on (1) regional flexibility needs and (2) the impact of RE integration on the regional transmission system and transmission system investment criteria. The Activity hired a dedicated Data Collection Coordinator, developed a data request questionnaire, and began data collection and modeling.

CROSS-CUTTING THEMES

The USAID Power Central Asia Activity collaborated with USAID Missions, partner USAID-supported projects, International Financial Institutions (IFIs), and counterparts to further the impact of its cross-cutting activities. As detailed below, the Activity shared international best practices, including American innovations, with Central Asian stakeholders to build their capacity for RE development.

Private Investment

As a result of the Activity's efforts to strengthen the enabling environment for increased private investment in renewable energy in the region, as detailed in the sections above, the following economic and clean energy gains were achieved.

Kazakhstan: Facilitated investments of $565 million for 459 MW of renewable energy and a potential **$1.4 billion** for a 1 GW wind and battery energy storage systems project.

Kyrgyz Republic and Tajikistan: Masdar, a leading private RE developer and investor, and the respective Ministries of Energy signed agreements to develop a 200 MW solar power plant in each country, which will potentially lead to an investment of $200 million.

Uzbekistan: The Government of Uzbekistan signed investment and Power Purchase Agreements for 1,596 MW of solar projects, which will potentially lead to an investment of $1.4 billion.

Training and Education

Built the capacities of the regional energy sector stakeholders through targeted technical trainings for **45 institutions and 657 energy specialists** (483 male, 174 female).

TOTAL

657 energy specialists trained

45 institutions supported

Training on roofrop solar system, Bishkek, The Kyrgyz Republic

First graduation for USAID Power Central Asia scholars at Kazakh-German University, Almaty, Kazakhstan

EDUCATION

Renewable Energy and Strategic Energy Management Scholarships

Funded six scholars who were awarded master's degrees in Central Asia's first-ever master's degree in the strategic management of renewable energy and strategic energy management at the Kazakh-German University (DKU).

Supporting a second cohort (ten scholars) and a third cohort (four scholars) currently studying under the DKU master's program.

Higher Education Partnerships

Facilitated a partnership between Kazakhstan's Almaty University of Power Engineering and Telecommunications (AUPET) and the Tajikistan Institute of Renewable Energy, to implement a RE curriculum. Furthermore, the Activity shared educational materials with Kazakh-British Technical University (KBTU) to promote RE education in Kazakhstan. In Uzbekistan, in partnership with the University of Delaware, developed a modern course on green hydrogen and presented it to the TSTU faculty.

GENDER EQUALITY AND SOCIAL INCLUSION

Promoted the integration of GESI in the region through training and mentorship. In total and as further detailed below, the Activity trained **82 people** (76 female, 6 male) working in public and private sector organizations across Central Asian countries to advance outcomes in gender equality or female empowerment.

Almaty University of Power Engineering and Telecommunications, Almaty, Kazakhstan

Participants from Tajikistan and Turkmenistan during Summer Camp event

Women and Youth Mentorship Network in Central Asia

Established and supported the mentorship, enabling 41 women and youth from all five countries to be mentored by energy sector professionals. This fostered collaboration between professionals and women and youth to share knowledge and experience, improve their capacities, and search for internship opportunities.

The mentors, from diverse backgrounds in academia, the private sector and public sector, provided guidance and advice on different fields of study and work relevant to the energy sector.

Summer Camp: Role of Women in the Energy Transition

Organized this highly publicized networking event in Almaty, attended by 41 female energy sector experts in the region.

TESTIMONIALS

The USAID Power Central Asia Activity published several success stories to highlight prominent activities:

Women of Central Asia Unite for a Greener Future

In the pursuit of building a stronger community for women in the energy sector, USAID's Power Central Asia hosted a four-day event in Almaty-themed "The Role of Women in the Energy Transition in Central Asia."

"Every day, as we got to know each other more and more, we understood how much we are similar and how much we are different. It was an unforgettable experience. We learned a lot about the energy sector in the region, including additional topics about staff motivation in the workplace, green energy, and the operation of the energy sector in other countries. We also discussed gender equality and the priority of electrical energy education among the population according to statistics".

Zhadyra Soltanova

Head of Human Resources at the Combined Heat and Power Plant-2 of the "Almaty Power Plants" JSC

Walking a Sustainable Path

In 2021, USAID established a foundation for a meaningful partnership with Samruk Energy, Kazakhstan's largest energy company, helping pave the way for the country to position itself as a green champion in Central Asia.

"This training was conducted, among other things, to deepen our knowledge. We are trying to raise the awareness of our employees about new principles, trends, and tools to reduce our carbon footprint. It is important to understand that each employee's contribution, even if very small at first glance, can significantly contribute to low-carbon development on the scale of the company".

Merey Adilbekuly

Head of the Production Efficiency Department at Samruk Energy

"Green" Hydrogen curriculum in Uzbekistan

What does one of the oldest universities in the U.S. and one of the oldest universities in Central Asia have in common? An agreement to use cutting edge technology to forge a renewable energy path together. The University of Delaware and Tashkent State Technical University worked together to introduce a new curriculum on green hydrogen.

"The training was extremely valuable for us as university professors. Ismat Shah shared his research on 'green' hydrogen conducted at the University of Delaware and provided us with invaluable experience that will help us implement such a course at our university".

Dilnoza Pulatova

Associate Professor at the Department of Alternative Energy Sources at Tashkent State Technical University

Power of Licenses to Improve the Kyrgyz Energy Sector

While water is one of the cleaner energy sources, such reliance on the single source of energy creates some challenges for the power system. What can be done to make sure all Kyrgyz citizens have lights in their homes? That would be regulation. The regulator is responsible for overseeing and preserving the energy sector's stability and protecting the consumers.

"[The] training sessions significantly improved our draft Temporary Regulation on Licensing and Permits. We gained a thorough understanding of licensing requirements and the roles of energy market players. Through practical examples from our companies, [USAID's consultant] demonstrated effective regulation of energy market activities while safeguarding consumer interests".

Aibek Abakirov

Head of the Licensing Department at the Kyrgyz Fuel and Energy Complex Regulation Department

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