CENTRAL ASIA ENERGY WATER DEVELOPMENT PROGRAM

Working for Energy and Water Security

PROGRESS REPORT 2013
Executive Summary

This Annual Report describes the Central Asia Energy Water Development Program (CAEWDP) activities, accomplishments and management for the period of January 1st to December 31st, 2013.

CAEWDP Objectives

CAEWDP was formally established as a trust fund in 2010 by the Government of Switzerland and the World Bank. The Program supports the Central Asian countries and the World Bank twin goals to reduce poverty and ensure shared prosperity through long-term economic growth and sustainability. By balancing donor support with national and regional objectives, CAEWDP is able to enhance cooperation and promotion of integrated energy and water development initiatives at the regional as well as national levels. The Program activities address challenges of energy development, water productivity, and energy-water linkages by supporting diagnostics and analysis, preparing investments, and strengthening national and regional institutions.

Regional Context

CAEWDP’s role is particularly important given the geographical and institutional complexities of the Central Asian energy-water linkages. Surface water resources are concentrated in two major rivers—the Syr Darya and Amu Darya—which are key drivers of regional economic growth and development, but which contain complex hydrological characteristics and are increasingly vulnerable to the effects of climate change. Upstream countries, generally endowed with rich water sources, typically give priority to hydropower energy generation in winter to supply domestic and industrial users (however winter energy deficits still remain), while downstream countries are particularly reliant on summer flows for agricultural and other purposes. The regional uneven distribution of water is compounded by a highly fragmented institutional system and difficulty in attaining consensus over resource management. In turn, this has led to significant losses in economic welfare, periods of water shortages and related tensions, as well as continuous environmental degradation. Hence, addressing energy and water linkages is a critical component in achieving regional security and stability, as well as promoting economic growth and shared prosperity.

Summary of CAEWDP’s 2013 Activities & Accomplishments

A 2013 CAEWDP roadmap and work plan was agreed with national government and international donor stakeholders. The Program’s 2013 contributions are categorized into Energy, Water and the Energy-Water linkages, and outlined below.

ENERGY AND DEVELOPMENT

Central Asia relies heavily on fossil fuel resources and is the most energy-inefficient region globally. Energy shortages are common for domestic, commercial

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1 Also referred to as ‘The Program’.
2 The information in this report is current as of December 31, 2013, however, the document was publicly circulated in 2014.
3 Central Asian countries refer to Afghanistan, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan.
and industrial users and emerging national aspirations and competition among stakeholders have reduced incentives for a cooperative regional approach to address such energy deficits.

CAEWDP’s Energy Development Pillar seeks to ensure energy security, efficiency, and economic growth across the region by stimulating trade in power supplies, identifying alternative sources, planning strategic infrastructure development, promoting institutional improvements and encouraging investments. The Program is putting substantial effort into establishing the foundation for sustainable energy sectors in upstream countries, and promoting dialogue and intra- and inter-regional trade in electricity both within Central Asia and between Central Asia and South Asia. Specifically in 2013, CAEWDP facilitated:

- Increased national energy sector dialogue in Tajikistan to reduce winter energy shortages and improve the performance of the national power monopoly;
- Assessments of heating and energy efficiency, particularly in the urban building sector in the Kyrgyz Republic and Tajikistan; and
- Exploration of electricity supply and demand alternatives for Tajikistan’s winter energy deficit.
- Continued facilitation of regional dialogue on energy sector cooperation, co-chairing the Energy Sector Coordinating Committee with the ADB.

**WATER RESOURCES FOR DEVELOPMENT**

Despite various studies confirming that integrated regional management of water resources would be the optimal solution for all countries, recent trends in water resources management have followed those described for energy resources, becoming managed more nationally.

CAEWDP’s Water Productivity Pillar seeks to address strategic infrastructure and management opportunities to increase the productivity and efficiency of water use in the agriculture and the energy sectors. Specifically in 2013, CAEWDP facilitated:

- Investigations into irrigation efficiency in Tajikistan, to help guide national investment preparations;
- Analyses addressing costs of operations and maintenance in the irrigation sector in Tajikistan;
- Studies assessing factors influencing local irrigation water management practices in Uzbekistan;
- Studies promoting consumer engagement and evidence-based research for equitable access to water supply and sanitation services in Uzbekistan.

**THE ENERGY-WATER LINKAGES**

A major legacy of the Soviet era in Central Asia was the energy-water linkages, whereby upstream energy generation from hydropower resources was holistically coordinated with the water needs of downstream countries. Since independence, this has not been the case, and has created tensions over water and energy use. These tensions are being compounded by an increasing frequency of extreme climate conditions. As such, regional water and energy security necessitates a platform for an analysis and evidence-based dialogue on potential investments with transboundary implications.

CAEWDP’s Energy-Water Linkages Pillar seeks to improve understanding of the interconnections between water and energy at national and regional levels by providing transparent, reliable and accessible data focused on decision support, riparian dialogue and climate change. It also provides support to the other pillars. Specifically in 2013, CAEWDP facilitated:

- Economic sector analysis on climate change in Central Asia (including modelling of glacial melting on future water and energy availability);
- A regional study on reducing climate vulnerability and moving towards resilient energy and water development;
- Riparian information sharing and consultation on the assessment studies for the proposed Rogun Hydropower project in Tajikistan, aimed at a productive, evidenced-based dialogue on the proposed project;
- Development of a roadmap for the strengthening of analysis for regional integrated water resources management, developed among water specialists from all five countries of Central Asia, and Afghanistan.

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Strategic Role, Partnerships and Finances

CAEWDP’s 2013 activities and accomplishments illustrate its comprehensive and strategic approach for facilitating and leveraging action on the major energy and water challenges in Central Asia. This approach has proven adaptable enough to integrate work on new sectors (e.g. water supply and sanitation) whilst also balancing national and regional agendas (e.g. specific focus on Tajikistan sustainable energy development with synergistic benefits for other countries in the region). Feedback from stakeholders on CAEWDP’s critical facilitating and leveraging roles has been positive. The risks to the Program are regularly monitored, as is the ongoing validity of the objectives, results framework and program structure.

CAEWDP’s approach has also garnered support from an increasing number of development partnerships and collaborations, which have been instrumental in leveraging knowledge and resources for results achieved to date. Notably, in December 2012, the European Commission (EC) joined the United Kingdom’s Department for International Development (DFID) and the Swiss State Secretariat for Economic Affairs (SECO) in expanding the multi-donor trust fund (MDTF), consolidating partner support and leading to a significant scaling of contributions. Furthermore, at the November 2013 Donors Advisory Committee meeting, discussions focused on extending the MDTF to January 2017 to enable full implementation of strategic activities. As such, the MDTF is in active discussions with prospective donors such as the United States, Japan and Russia.

In terms of current finances, cumulative contributions to CAEWDP came from DFID (US$3.6 million), SECO (seed pledge of US$1 million), and the EC (US$0.7 million), totaling US$ 5.3 million as at December 2013. The graph below depicts the pledged amount in USD per development partner versus the funds received as at December 2013.

Funds contributed by development partners in the MDTF represent approximately 51 percent of the total US$10.3 million pledged over four years (up to 2015). Grants from the MDTF chiefly comprised Energy-Water Linkages Pillar activities (US$2.4 million) and Energy Development Pillar activities (US$1.2 million) (as at December 2013). In terms of growth, Program activities have increased more than four-fold between the first contribution in 2011 and the end of 2013. The following graph

Beyond 2013

Looking forward, CAEWDP offers a transformational vision for Central Asia that will help countries prosper through more sustainable management of shared energy and water resources. CAEWDP will solicit additional support from current and prospective donors, strengthen partnerships and expand its activities to meet countries’ demands.

Program management over the next few months will be dominated by the Call for Funds, extension of the Multi-Donor Trust Fund, and formalizing the Program’s internal processes. This must all be achieved in the context of a fragile political
economy, where tensions around energy and water issues remain at the forefront of national concerns. Over the next two years, CAEWDP is expected to:

I. complete the preparation of the Central Asia South Asia 1000 (CASA 1000) regional energy exchange project (noting Uzbekistan’s formal objection),

II. consolidate support for a set of investment projects for irrigation efficiency and water supply rehabilitation (following completion of the World Bank’s Central Asia Water Management Study),

III. complete an assessment of the impacts of glacial melting on regional hydrology to inform a climate resilience program at a joint workshop with the United Nations Regional Centre for Preventive Diplomacy for Central Asia (UNRCCA) in the fall of 2014,

IV. implementing agreed initiatives to strengthen analysis and the knowledge platform for water resources management; and

V. conclude the riparian consultations on the Assessment Studies for the proposed Rogun Hydropower Project. With regard to policy, CAEWDP will focus on a systematic approach to managing the social impacts of water and energy scarcity, and on easing market constraints to regional energy trade within Central Asia.

To support the program in achieving these ends, CAEWDP intends to develop a communications strategy and work plan to support program delivery, more strongly promote the energy-water linkages and boost impact-focused outreach activities. To ensure the program can sustain and implement the strategy, it is recommended that a dedicated communications officer be added to the existing core team over this period.

In the longer term, CAEWDP will continue to bring attention to the crucial infrastructure needs to solve regional development challenges. In so doing, different modalities may be needed to mobilize more funding, strengthen partnerships and engage in longer-term activities for greater impacts. The CAEWDP team has begun addressing this challenge, with a focus on exploring regional projects and initial discussions on an associated investment facility.
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I. Energy and Water Security: A Regional Approach

Central Asia is well endowed with significant natural resources in water and energy. Water, as a shared resource, ties the countries together and provides much of the region’s energy. The Amu Darya River begins in the Pamir Mountains in Tajikistan and flows 1,500 miles. The Syr Darya River begins in the Tien Shan Mountains in the Kyrgyz Republic, and flows 1,380 miles. Fed by glacier melt, the two rivers flow through Uzbekistan, Kazakhstan, and Turkmenistan and drain into the Aral Sea.

ENERGY
The Kyrgyz Republic and Tajikistan, as the upstream countries of the Amu Darya and Syr Darya river basins, enjoy noteworthy hydropower potential. Thermal resources are concentrated in the downstream countries of Uzbekistan, Turkmenistan, and Kazakhstan. Hydropower can provide energy security and system stability and reservoirs, through annual and year-over-year management, and ancillary services such as power frequency regulation and reserve capacity.

In addition, Kazakhstan has substantial reserves of oil, gas, and coal. Uzbekistan and Turkmenistan have gas reserves and some oil. If fully exploited, these resources would exceed the domestic demand of each country and could provide key development opportunities through expanded exports.

A well-functioning, interconnected energy system could enable the region to manage across differing cost and demand patterns, fuel mixes, and risk profiles, with cost and reliability benefits, as well as potential positive environmental impacts. However, the distribution of these energy resources is highly skewed across the region and within each country.

WATER
The demand for water for energy and other uses presents the region with significant challenges. Allocating water among different uses and users requires evaluating, choices and tradeoffs as well as opportunities and synergies. Of particular concern is agriculture’s demand for irrigation water during the summer growing season. Furthermore, poor irrigation systems are exacerbating the problems; almost 50 percent of irrigated lands are affected by salinization and waterlogging. In addition, generating hydropower in upstream countries to address energy deficits in the winter can compromise the availability of irrigation water and contribute to regional water use conflicts.

CLIMATE CHANGE
Climate change is expected to increase pressures on Central Asia’s water and energy resources, with overall reductions in volume and continuing changes over time. In the near term, increasing glacial melt could lead to greater flows and flooding, but, as the glaciers disappear, long-term reductions will dominate. Upstream regions will experience more precipitation, but rising temperatures and reduced precipitation in the downstream regions will contribute to the disappearance of the Southern Aral Sea.

ADDRESSING THE LINKAGES
Given this abundance of natural resources and the threat posed by climate change, the need to address the energy and water agenda in a comprehensive way is as great as ever for the region’s stability and growth. Shortages of winter heat and power are common realities for two million households. Overall,
the benefits of around $1.5 billion in economic productivity are foregone from a 90 percent reduction in power transfer in the region since 1990 and one percent loss in gross domestic product (GDP) is caused every year by weather-related disasters in Tajikistan and Kyrgyz Republic. And yet, Central Asia still lacks the systems, institutions, and infrastructure to manage joint energy and water resources which are needed to prevent further deterioration in regional cooperation, and increases in winter energy shortages and summer water, with possible consequences for long-term regional development. Other challenges to energy and water sustainability include:

- Weak financial and commercial principles to finance energy trades.
- Dependence on high water-consuming crops.
- Lack of investment in energy and irrigation technologies, resulting in energy generation deficits and land degradation.
- Strong economic growth, which has increased energy demand.

### Building Regional Energy and Water Security

The Central Asia Energy-Water Development Program (CAEWDP) was designed to support the long-term effort to build energy and water security for the region through informed analysis and dialogue on energy-water management. By establishing sound energy-water diagnostics and analytical tools, identifying high priority infrastructure investments, and strengthening regional institutions, the Program’s long-term goals are to eliminate winter energy shortages, enhance water productivity, and increase electricity trade within and outside the region.

Under each area, the Program focuses on three outcomes: (i) institutional strengthening, (ii) analytical foundations, and (iii) investment preparation. The Program supports efforts by the countries to take advantage of their natural resources while respecting national priorities and safeguarding regional stability. It fosters dialogue across borders in order to reap

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### PILLARS, OUTCOMES, AND RESULTS

The Program is based on three Pillars:

1. **Energy Development** to promote highest value energy investments and management. This includes infrastructure planning, winter energy security, energy trade, energy accountability, and institutional development.

2. **Water Productivity** to enhance the productivity and efficiency of water use in the agricultural and energy sectors. This includes capacity strengthening, the Third Aral Sea Basin Management Program, national action plans for water productivity, and rehabilitation of infrastructure.

3. **Energy-Water Linkages** to strengthen the analytical tools for integrated water resources management and improve the understanding of linkages between water and energy at the national and regional levels. This includes energy-water modeling, regional hydrometeorology, climate vulnerability, and energy-water dialogue.

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### Three Pillars

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<th>Energy Development</th>
<th>Water Productivity</th>
<th>Energy-Water Linkages</th>
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<td>Support policy and investments decisions for the highest value mix of resources</td>
<td>Increase productivity and efficiency of water use in both agriculture and energy sectors</td>
<td>Improve understanding of linkages between water and energy and facilitate regional dialogue</td>
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### Three Outcomes

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<th>Investment Preparation</th>
<th>Regional Institutions</th>
<th>Diagnostics and Analysis</th>
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<td>Expanded water and energy infrastructure investments, with early results</td>
<td>Strong physical, intellectual and management hubs for regional cooperation and dialogue</td>
<td>Better identify the costs, benefits, opportunities and risks of cooperation to national interests</td>
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the benefits of regional coordination and cooperation. Priorities include addressing severe shortages of energy in upstream countries and reducing the vulnerability to hydrological variability in downstream countries.

To achieve these outcomes, the Program developed a comprehensive Results Framework, with four overall objectives:

- At least three investment or policy options (two of which are targeted at Tajikistan and the Kyrgyz Republic) to strengthen the stability and predictability of power supplies.
- At least two investment decisions on national level water or energy projects including a clear understanding of their transboundary implications.
- A multi donor trust fund (MTDF) to coordinate Program activities.
- Sustainable institutions for improved water dialogue across Central Asian stakeholders.

**ACHIEVEMENTS**

CAEWDP combines nationally focused initiatives with regional implications and national benefits. At the national level, the Program has completed an assessment of the energy crisis in Tajikistan that yielded an action plan and catalyzed commitment of the development community. The Program also identified climate risks and adaptation options for Uzbekistan in the agriculture and energy sectors. This has stimulated comparable studies in the four other countries’ national energy sectors as well as a perspective on regional cooperation.

The Program’s activities complement the Bank’s lending portfolio of over 30 investments projects and two development policy operations, such as a transboundary irrigation project in Uzbekistan and Turkmenistan, a second project to restore a portion of the Aral Sea in Kazakhstan, and a joint venture with the Swiss Agency for Development and Cooperation (SDC) to upgrade the water management data system in the Kyrgyz Republic.

Additionally, the Program regularly convenes representatives from the Central Asian countries for dialogue on pressing regional issues, supplementing the ongoing investment projects on CASA 1000 and the Regional Hydrometeorology Modernization Project. These efforts have resulted in several regional initiatives taking place for the first time, such as the following:

- **Regional consultations and diagnostics on energy-water analysis.** Extensive consultations culminated in the six-country workshop on strengthening tools and data for adaptive water resources management, which took place for the first time in July 2012. The workshop established a new paradigm for regional and national knowledge management, with consensus on greater consultation and national perspectives, adoption of state-of-the-art public domain remote sensing data and analytics, and rebuilding of the cadre of sector specialists across the countries. At the end of 2013, the Program finalized a comprehensive Roadmap to support the new paradigm, to be operationalized through a multi-donor work program for 2013–2015.

- **Regional Forum on climate change policy.** Consistent with its global concern and the building on the energy studies, the Bank hosted the first regional Forum on climate change policy in June 2013. Forum participants confirmed their desire to accelerate climate change adaptation and regional cooperation, and to repeat the Forum as a vehicle for knowledge exchange and dialogue.

- **Riparian consultations on the Rogun Hydropower Assessment Studies.** The consultations are ensuring transparency and quality, while facilitating exchange of information among stakeholders. These consultations, which represent a significant advance in meeting international standards in Central Asia, have benefitted from input from governments, civil society organizations and diplomatic communities in the five Central Asian countries. It is setting the stage for a productive, evidenced-based dialogue on the proposed project.
The Road Ahead

In 2013, the Program added new activities to achieve energy savings in Tajikistan and the Kyrgyz Republic, to develop a regional level pilot program on climate resilience, and to build a comprehensive, long-term regional program on energy-water knowledge management. In the next two years, the Program is expected to complete the preparation of the CASA 1000 project, consolidate support for a set of investment projects for irrigation efficiency and water supply rehabilitation, and conclude the riparian consultations on the Assessment Studies for the proposed Rogun Hydropower Project. On the policy side, the focus will be on a systematic approach to managing the social impacts of water and energy scarcity, and easing the market constraints to regional energy trade within Central Asia.

In the long term, the Program will bring greater opportunities to handle bigger challenges as crucial infrastructure needs to solve development challenges are identified and evaluated. In so doing, different modalities may be needed to mobilize more funding, strengthen partnerships and engage in longer-term activities for more impacts. The team has begun addressing this challenge, with a focus on exploring regional projects and initial discussions for an associated investment facility.
II. Energy and Development

Challenges and Benefits

With fossil fuels as the prime source of energy production, Central Asia remains the most energy-inefficient region in the world in terms of both production and consumption. Yet, energy demand in the region is expected to rise by 2030. To ensure continued provision of basic services to the public and industry, the Central Asian governments need to understand the inherent vulnerabilities in their energy sectors and the benefits of access to energy.

The region’s people, industries and agricultural producers are subject to number challenges and vulnerabilities. Climate change will increase pressure on the region’s natural resources, increasing the frequency of extreme events, such as floods and drought. Energy shortages increase costs and reduce the ability of households, industry and government to conduct their affairs. Emerging national aspirations and competition among stakeholders have reduced incentives for a cooperative regional approach. Demographic change and economic growth will increase demand for energy over time.

If the region’s governments can address these challenges, the benefits to greater access to energy will be felt by all their citizens. Access to energy can help eradicate poverty, reduce infant mortality, improve health and education, reduce gender inequality, improve environmental sustainability and, in the end, accelerate economic growth and prosperity. Families can light and heat their homes in winter. Businesses can invest in new technologies and improve their productivity. Public institutions, such as hospitals, schools, and government offices, can improve the quality of their services.

The Energy Development Pillar seeks to ensure energy security, efficiency and economic growth across the region by stimulating trade in power supplies, identifying alternatives, ensuring infrastructure planning, promoting institutional development and encouraging investments. The Program is putting substantial effort in promoting dialogue on intra and inter-regional trade in electricity within Central Asia and between Central Asia and South Asia.

Activities

The 2013 CAEWDP activities of the Energy Development Pillar are described below.

ACHIEVING RESULTS THROUGH INFORMATION AND DIALOGUE

Tajikistan Energy Sector Dialogue: Support to Tajikistan in reducing winter energy shortages and improving performance of the national power monopoly

Barki Tajik (BT), Tajikistan’s national integrated power company, operates the Nurek Hydroelectric Power Plant, the largest station in Central Asia with an installed generation capacity of 3 gigawatts (GW), producing over 75 percent of Tajikistan’s electricity. Barki Tajik is a multipurpose company comprising several functions including power generation and irrigation supply for Uzbekistan and Turkmenistan. The company struggles to provide quality service to its customers as it faces the challenges of shortages of power to meet winter needs, unsustainable tariffs,
consumer debt, theft, and the inability to maintain properly the system due to shortage of funds. Transparency, accountability and governance in the energy sector are other major areas of concern for the public, the government and development partners.

Transparency of operations through financial management is basic for improved accountability and governance. To enhance transparency and accountability, the World Bank supported the international audit of Barki Tajik’s financial statements and the implementation of a Financial Management Improvement Program (FMIP) under the Tajikistan Energy Loss Reduction Project.

This support will help the company further implement International Financial Reporting Standards (IFRS) and address the issues that prevented the auditor from issuing an opinion for the company’s 2011 and 2012 financial statements. The audit for 2013 should show progress, compared to the previous two years.

The Bank approved the activity in 2013. Out of four supported components, progress was made under the first component, Support to Barki Tajik on Financial Management. A consultant visited the offices of Barki Tajik, reviewed financial management documents and practices and delivered the following:

- Recommendation of priority financial management areas.
- Comments on the draft accounting policy.
- Comments on draft terms of reference for Barki Tajik’s evaluation of accounts payable and receivable.
- Draft Terms of Reference for (i) the development and introduction of the unified system of documentation and documentation flow and (ii) the development and introduction of a revenue accounting system.

These contributions will support Barki Tajik’s efforts to improve its financial management; however, given the time it takes to implement financial management improvements and obtain results, the expected improvements are unlikely to be achieved before the end of 2014.

The World Bank collaborated with the Asian Development Bank (ADB) and the European Bank for Reconstruction and Development (EBRD) in its support for Barki Tajik’s financial management reforms. This strong partnership among such key development partners was recognized in 2013 by the Electricity Governance Initiative (EGI) in an article titled “Tajikistan Makes Progress: Barki Tajik is Partnering with Civil Society to Improve Service for Consumers.” The article credited the World Bank’s work on governance reform with producing tangible and observable changes in transparency and consumer engagement.

Regular meetings of the Energy Sector Donor Coordination Committee help stakeholders agree on priorities and division of assistance, as well as coordinate investments and analytical work.

**POWER SUPPLY OPTIONS STUDY FOR TAJIKISTAN**

**Electricity Supply and Demand Alternatives for Tajikistan’s Winter Energy Crisis**

Approximately 70 percent of the Tajik people suffer from extended shortages of electricity during the winter. These shortages, estimated at about 2,700 gigawatt hours (GWh), or about a quarter of winter electricity demand, impose economic losses estimated at over US$200 million per year, or 3 percent of GDP. In addition to the financial costs of inadequate electricity, the Tajik people suffer the social costs, including indoor air pollution from burning wood and coal in homes and health impacts from extreme winters. Tajikistan’s electricity shortages are caused by a combination of insufficient winter hydropower output when river flows are low and demand for heat is high.

The Power Supply Options Study assisted the government of Tajikistan in identifying ways to overcome the current electricity shortages and establish a sound basis for meeting the growing demand. The study focused on the investments and policy reforms needed between now and 2020 to strengthen the financial, technical, and institutional capacity of the Tajik power sector and prepare the government to undertake a major expansion of power supply capacity. The study explored a range of supply and demand alternatives (e.g., thermal, run-of-river

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The study developed an action plan to reduce winter power deficits by 2016 through a combination of (i) ambitious energy efficiency plans to reduce uneconomic power usage, (ii) new dual-fired thermal power supply to complement the existing hydropower supply during winter, and (iii) increased energy imports to leverage surplus electricity supply in neighboring countries. The study excluded from the action plan the construction of large hydropower plants with storage because of their complexity and the inevitable delays in their implementation. However, the study’s recommendations are relevant and its proposed actions are of highest urgency in the next four to five years to address the country’s winter energy crisis and establish a base for long term energy security. The recommended actions were:

- Address the industrial sector and buildings and scale up the loss reduction program with ambitious energy efficiency improvements.
- Switch the maintenance schedule of the country’s aluminum company, TALCO, from summer to winter and implement financially attractive investments to reduce its energy consumption.
- Increase electricity prices to encourage residential customers to ration their use of energy and implement an improved targeted social safety net and a related energy efficiency program.
- Revitalize regional power trade to provide substantial and affordable relief during winter energy shortages.
- Invest in dual-fired thermal power supply to complement hydropower during winter.

The study generated several follow-on activities: (i) An Energy Sector Dialogue, in which the World Bank convened various development partners in a dialogue on energy policy issues with the government of Tajikistan, (ii) A Heating Assessment in Tajikistan and the Kyrgyz Republic to identify opportunities to offload heating needs from the overstretched electric power system, and (iii) An Overview of Energy Vulnerability, including a closer look at the potential impact of tariff increases on vulnerable groups. The study has subsequently been used in long term least-cost planning assessments and technical assistance to strengthen regional energy trade. The study was catalytic in getting a government decree to direct TALCO to accelerate implementation of energy efficiency measures, which would provide immediate benefits by additional power supply to other consumers in winters from the energy efficiency savings. Government also accelerated the work on setting up a new 100 MW CHP plant to meet the winter demand.

**HEATING AND ENERGY EFFICIENCY ASSESSMENT**

**Support for the Urban Building Sector in the Kyrgyz Republic and Tajikistan**

The reliability and service quality of heat and electricity supply in the Kyrgyz Republic and Tajikistan are deteriorating and are not able to meet the higher demand during the cold winter months. Due to low electricity tariffs and unavailable or unreliable heat supply, the population is increasingly relying on electricity for heating, which results in overloaded power networks and increases the number of power outages. These shortages have severe repercussions on the living and working conditions of the population and economic activities of local industries. Identifying viable heating options and related energy efficiency measures in urban buildings could help the two countries to meet their heating needs and address winter power shortages.

The Program conducted a diagnostic analysis of the heating and building sectors in the Kyrgyz Republic and Tajikistan to identify the main issues challenging improvements in the reliability and efficiency of heating supply and demand in residential buildings and public facilities (e.g. schools, kindergartens, hospitals). In addition, based on detailed assessments in two representative cities for each country, the assessment identified a long list of measures that could help to improve the reliability and efficiency of the existing heating systems and reduce heat losses. The assessments analyzed the heating supply and demand structures to identify a mix of measures that would help the two countries improve the reliability of heating supply during winter months.

To that end, the assessment included:

- An overview of the urban areas.
- A detailed analysis of two representative cities for each country.
- An assessment of viable heating options for the four target cities.
- Specific investment options and policy recommendations to implement selected heating and energy efficiency measures.

To ensure ownership and commitment by the counterparts and to inform stakeholders and seek their feedback on progress achieved, the assessment is also accompanied by roundtables.

In 2013, the assessment achieved the following:

- Stakeholder roundtables in the Kyrgyz Republic and Tajikistan to launch the activity, get stakeholder feedback, and ensure that final recommendations will be in line with government priorities.

- Analysis of the heating and building structures in both countries to identify the key issues challenging improvements on the demand side and supply side;

- Assessment of the heating and building situation in two representatives cities for both countries, including (i) energy audits in public and residential buildings, (ii) inspections of heating facilities, (iii) detailed data collection and analysis, (iv) heat demand forecasts, and (v) identification of key issues that need to be addressed to improve the current situation.

- Identification of a long list of measures that could help to improve the reliability of the heating supply and reduce heat losses in buildings.
III. Water Resources for Development

Water Productivity

While previous studies have indicated that proper management and efficient use of water resources in the region would benefit all countries in the region, since the collapse of the Soviet Union, the water management policies pursued by the various governments have become more nationalistic with increasing inefficiency. The Amu Darya and Syr Darya, which once had a combined flow equal to that of the Nile, are slowly shrinking.

The Water Productivity Pillar seeks to identify and promote infrastructure and management opportunities to increase the productivity and efficiency of water use in the agriculture and the energy sectors. The ways in which the Program envisions effecting change in this area is through:

- Identifying infrastructure and management opportunities to increase agricultural water productivity.
- Preparing national action plans for increasing agricultural water productivity.
- Including an understanding of regional water productivity reflected in the national plans, policies, and investments.
- Strengthening the capacity of the International Fund for Saving the Aral Sea (IFAS) and improving communication between national agricultural water specialists.

This ambitious plan began in 2011 with implementation of the “Promoting Irrigation Efficiency in Central Asia” activity. Three more activities were implemented under this area of focus in the latter half of 2013.

Activities

The 2013 CAEWP activities of the Water Productivity Pillar are described below.

STUDY ON WATER USE AND IMPROVEMENT IN EFFICIENCY

Promoting Irrigation Efficiency in Central Asia

Beginning in 2011, the activity supported a study in Tajikistan to improve understanding of the causes of inefficient water use and to identify opportunities to improve efficiency. Similar studies will be conducted in the other Central Asian countries, and a regional workshop will be organized to share findings, learn from experience, and define national and regional irrigation efficiency programs. The study provided a number of important findings:

- Irrigated areas are currently under-supplied. Improving irrigation efficiency will therefore not lead to reduced abstractions or reduced pumping costs. Rather, improving efficiency will lead to better irrigation and higher crop yields.
- One of the most important sources of inefficiency is pump outages as a result of unreliable electricity and excessive wear because of high silt loads.
- Efforts to transfer management responsibility to water users associations first need to ensure a reliable supply of water to the command area.
The implementation of the study included extensive consultations with the donor community in Tajikistan. Discussions with European Commission representatives and Swiss Agency for Development and Cooperation (SDC) focused on water sector reforms, which are currently under discussion, and how these can contribute to more efficient use of irrigation water. The final report identifies constraints and opportunities for improving irrigation efficiency in Tajikistan. Discussions are underway to roll out similar activities in Kazakhstan and Uzbekistan. Findings will be used in the design of future Bank-financed investment programs.

IRRIGATION STRATEGY IN TAJIKISTAN

*Addressing costs of operations and maintenance and their recovery*

The irrigation strategy responds to the recent reforms in Tajikistan’s water sector, to address some of the weaknesses, including the costs of operations and maintenance and their recovery. It aims to help the government of Tajikistan to identify and prioritize further analytical work and investments. The first mission in 2013 collected available data on the sector. A second mission will prepare and discuss an outline of the strategy, and will also conduct an irrigation public expenditure review in early 2014. The team is working in close consultation with stakeholders, including the government of Tajikistan, and the donor community, to identify priorities for future investments in irrigation.

STRENGTHENING IRRIGATION EFFICIENCY

*Assessment of Factors Influencing Good Quality Local Water Management Practices*

The objective of this study is to contribute to better irrigation water management in Central Asia by (i) identifying factors and innovative practices that positively affect performance of local irrigation water management institutions, (ii) preparing an associated diagnostic tool that will help design program interventions for ongoing or future irrigation operations,
and (iii) facilitating exchange of good practice experiences and knowledge of what works among relevant stakeholders across the region. The approach taken to address the challenges posed by weak distribution and management of irrigation water was to conduct systematic, in-depth case study research of water users associations, applying primarily qualitative research methods. The team, in partnership with the Uzbekistan Ministry of Agriculture and Water Resources, and with representatives of the International Water Management Institute (IWMI) in Tashkent and the Swiss Development Cooperation in Tashkent began defining the scope for the activities, which will be extrapolated and modified for the Kyrgyz Republic and Tajikistan in 2015. Thus far, analysis has focused on identifying good local water management practices (in terms of efficiency) across a range of land use types. Key research questions revolve around a series of hypotheses. These include the following:

- Incentives for better water management at the local level are linked to incentives for raising crop production.
- Water users associations in Uzbekistan are primarily accountable to the Hokimiyat and the public irrigation administrative system, and serve as an extended branch of the state.
- Dekhan farmers, whose kitchen garden production provides an important contribution to the agricultural economy, are struggling to meet their irrigation and drainage needs in spite of their rights to water through their membership in a water users association. Reasons include their limited political clout and low priority given to their needs by the Hokimiyat and the public irrigation administrative system.
- To reach cost recovery for the water users associations’ operations, the payments of the irrigation fee need to be better linked to actual water flows and consumption of water.

As of December 2013, the foundations for field research had been laid. The team is paying special attention to innovations that respond to emerging trends, such as land privatization and the shift towards high value crops. It is hoped that through case study research, the technical assistance will identify incentives behind these good practices and will also look at issues such as information flows, accountability and the potential for introducing Information and Communications Technology (ICT) tools. The work will inform the design of a diagnostic tool that enables assessment of the quality of current water management institutions and the extent to which internal and external factors and incentives for good functioning of local water management are present. Options for facilitating transfer of knowledge on good practices to other water users association and irrigation water management bodies will be explored.

**SOCIAL IMPACT ANALYSIS OF WATER SUPPLY AND SANITATION SERVICES**

*Promote the engagement of consumers and the use of evidence for equitable access to water supply and sanitation services*

The objective of this activity is to promote the engagement of consumers and the use of evidence in developing policies and plans for equitable access to water supply and sanitation services. The team is paying special attention to the development of policies and plans for equitable access to water supply and sanitation services, considering the social impact on different groups of people. The approach involves engaging consumers and using evidence to ensure that the services are accessible and affordable to all. This includes identifying and addressing the needs of marginalized communities and ensuring that the services are sustainable in the long term. The team is working closely with stakeholders at the local level to develop and implement effective strategies for equitable access to water supply and sanitation services. The work will inform the design of a diagnostic tool that enables assessment of the quality of current water management institutions and the extent to which internal and external factors and incentives for good functioning of local water management are present. Options for facilitating transfer of knowledge on good practices to other water users association and irrigation water management bodies will be explored.

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6 The Hokimiyat is an organ of executive power in Uzbekistan which exists at each level of the state administrative division—provincial, city, and district. The hokim, the highest authority in the hokimiyat, is appointed by the senior executive branch and approved by the relevant body of representative power. Provincial leaders and the mayor of the national capital of Tashkent city (both termed hokim) are appointed by the president of the republic and approved by the Oliy Majlis, the Supreme Parliament, and the senior legislative authority.
to water supply and sanitation (WSS) services. The activity is a complement to the Water Supply and Sanitation (WSS) Regional Strategy Study. At the end of December 2013, the activity collected key data from the urban areas, small towns and rural areas and across wealth groups on the following topics:

- Consumption patterns capturing water and sanitation availability and quality, water needs and usage and nature and quality of services provided by utilities.
- Costs and coping strategies capturing expenditure and costs incurred for WSS services, non-monetary impacts of poor service on health, earnings opportunities, livelihood among others and coping strategies.
- Households’ expectations of utility services and improvements and willingness to pay for WSS service improvements, tariff price increases, behavioral change and demand management options. This exercise also explored improvements households would like to see and conditions under which households would accept tariff increases.

Access to adequate WSS services in Central Asia is low, especially in rural areas, and the region is not on track to meet the Millennium Development Goals (MDGs). In urban areas, underpriced water services mean water utilities are severely under-funded and under-resourced. Tariff policies are “frozen in time” and generally do not reflect cost-recovery and investment needs. Tariff regulation practices, coupled with weak participatory and accountability mechanisms, perpetuate extremely low WSS tariffs disconnected from cost-recovery and sector development needs. Beyond financing and capacity limitations, poor institutional governance and social accountability also contribute to sector underperformance. Sanitation needs are seen as a lesser priority than water supply solutions. Current planning and policy making in the WSS sector in Central Asian countries cannot rely on evidence of customer needs and priorities, since systematic analysis of these issues is weak or nonexistent. Furthermore, consumers’ voices—especially those of women—are missing from policy discussions.

This activity consists of technical assistance and involves applying the Poverty and Social Impact Assessment (PSIA) methodology to assess the following:

- Impacts of current weak WSS services and the costs of policy inaction for different population subgroups, including by gender.
- Consumer perceptions around WSS access, quality, tariff structure, and affordability.
- Stakeholder views and positions on service modernization needs and reform options.

The PSIA is expected to add substantial value to the design process of WSS sector strategies by making consumer voices and needs heard by policy-makers. The scope of the proposed work has been discussed with the national body for communal services (Uzkummunizmat), the Ministry of the Economy, the Ministry of Finance and SDC. Collaboration with the Institute for Social Research (ISR) and the Institute for Forecasting and Macroeconomic Research (IFMR) in terms of organizing PSIA training for policy researchers is being explored. Work is scheduled to begin in early 2014.
IV. The Energy-Water Linkages

Energy-Water Linkages

A significant legacy of the Soviet era in Central Asia was the creation of an energy-water linkages, whereby the generation of electricity from hydro-power in upstream countries was inexorably linked to the water needs of the downstream countries. This system operated in the context of a common management system and shared energy arrangements through regional energy grids and networks. However, this system ended with the dissolution of the Soviet Union and the overnight emergence of international borders. The rise of national aspirations and development needs, the emergence of new and distinctive political cultures, as well as the drive for energy and water self-sufficiency has led to the breakdown of regional water and energy mechanisms inherited from Soviet times. These difficulties have promoted an increasingly inward looking rather than regional or transboundary perspective.

Although tensions over water allocation are at the forefront of regional concern, there is increasing worry over the increased frequency of extreme conditions and debilitating risks from floods, greater volatility from releases, and recurring drought, (i.e. most recently the drought of 2008 and the summer floods in 2010). As such, regional water and energy security necessitates a platform for a region-wide dialogue on potential investments with transboundary implications, while still considering sovereign interests. Water management, especially in the face of climate change, also links back to energy security and system stability through the annual and longer-term management of reservoirs for ancillary services such as power frequency regulation and reserve capacity.

The Energy-Water Linkages Pillar seeks to improve the understanding of linkages between water and energy at the national and regional levels by focusing on three interconnected areas:

- Decision support: Attend to the basics of data, analysis and knowledge sharing.
- Riparian dialogue: Facilitate transboundary consultations based on evidence and analysis.
- Climate change: Guide long-term issues that will shape energy and water issues.

The vision for effecting change in the region is to provide transparent reliable accessible data for dialogue, which will lay the foundations for all the other Pillars, both water productivity and energy development.

Activities

The 2013 CAEWDP activities of the Energy-Water Linkages Pillar are described below.

EUROPE AND CENTRAL ASIA DEEP DIVE TECHNICAL ASSISTANCE

Leveraging Turn Down the Heat III Economic Sector Work for Europe and Central Asia

The impacts of climate change in Central Asia, such as decreasing water availability, heat waves, and more frequent floods and droughts, are already being felt; and countries are taking actions through a variety of national strategies, policies, and programs. However, the issue does not yet receive adequate
priority given the level of awareness (e.g., low social demand and costs of inaction are not well known nor publicized), knowledge (e.g., lack of detailed assessment of sectoral impacts), and capacity gaps (e.g., training in climate-smart options) for designing cross-sectoral policies and programs.

The objective of the Europe and Central Asia Deep Dive Technical Assistance (ECA Deep Dive TA) is to help initiate and strengthen an evidence-based dialogue on climate action among key stakeholders, leveraging the latest scientific analysis provided at sub-regional levels by the Turn Down the Heat III (TDH III) report. While the main focus of TDH III will be on delivering a scientific diagnostic, drawing on the latest literature, the ECA Deep Dive TA will contribute background region-specific review, disseminate scientific findings from TDH III, and support institutional capacity building in the Western Balkans, Central Asia and Russia. The ECA Deep Dive TA will catalyze policy and operational dialogue on climate change by (i) improving understanding of climate vulnerabilities, (ii) supporting institutional capacity development, (iii) creating public demand for climate actions, and (iv) facilitating the identification of additional project and analytical work to be carried out to inform the region’s pipeline and country strategy design.

Because the activity began late in 2013, most of the activity completed by December 2013 was preparatory. This included preparations and discussions to identify options for climate-resilient low-emissions development that is cost-effective and robust in terms of long-term uncertainties on climate and development scenarios. The activity selected six sectors: water resources, energy, agriculture, forestry, transport and health. A strategy note included assessing the costs of inaction in Central Asia and outlined possible opportunities and priorities going forward (e.g., further analytical work on climate impacts or on institutional constraints and other barriers to the uptake of climate-smart options). This complements TDH III by building a stronger narrative on action to promote resilience in the region.
**CENTRAL ASIA CLIMATE CHANGE KNOWLEDGE FORUM**

*Reducing vulnerability and moving towards climate-resilient development*

Given their significant exposure to the impacts of climate change and low adaptive capacity, the Central Asian countries are among the most vulnerable nations in the world. In response, the countries are focusing on reducing vulnerability and moving towards climate-resilient development. However, the issue is not yet receiving adequate priority because of the gaps in knowledge and capacity to design cross-sectoral policies and programs at the national and regional levels. As climate change risks extend beyond national borders, due in part to the regional connectivity of the land and water systems, concerted regional action will help in the design and implementation of an effective and scaled-up response.

The Central Asia Climate Knowledge Forum aims to raise awareness on climate risks and the costs of inaction by (i) fostering knowledge and experience sharing on climate-smart options, (ii) building skills on tools and approaches for climate action, and (iii) encouraging dialogue and collaboration among the Central Asian countries and other stakeholders active in the region (such as Development Partners). It builds on the success of the inaugural Central Asia Climate Knowledge Forum, held in June 2013 in Almaty, Kazakhstan. The Forum concluded with a demand for greater collaboration for effective and scaled-up action and for establishing a platform to continue regional dialogue on climate change. The 2014 Forum, to be held in Almaty, Kazakhstan in May 2014, will feature some of the analytical work conducted under the Program and discuss the building blocks of a proposed Regional Program for Resilience. The Grant Funding Request was approved in mid-November 2013; activities focused on preparatory work, including outreach to countries (and other regional stakeholders). Two important milestones were achieved:

- The governments submitted nominations for cross-sectoral specialists to establish the Central Asia Technical Working Group on Climate Change (TWG). The TWG will help mobilize a durable network of experts from across Central Asia to work collegially across borders and sectors and provide advice and champion climate-smart solutions at the national and regional levels.
- Forum 2013 completed the preparation of the profiles summarizing the climate and development challenges in major sectors for each country. Forum 2013 also completed the activity map of Development Partners. Final drafts were handed over to government counterparts and Development Partners for review and comments.²

**CENTRAL ASIA ENERGY-WATER RIPARIAN DIALOGUE**

*Assessment Studies for the proposed Rogun Hydropower Project in Tajikistan*

Proposed during the Soviet era, the Rogun Hydropower project on the Amu Darya in Tajikistan would be the highest dam in the world. However, because the Amu Darya provides more than half of the available water to Uzbekistan and Turkmenistan, the unknown but potential risks for these downstream countries are causing regional tensions. At the same time, Tajikistan is experiencing significant lighting and heating deficits during the winter. There are no institutions or established practices to complete assessment studies in full transparency and with ongoing engagement of key stakeholders; nor are there any examples of how best to conduct transboundary consultations in the region. The challenge is reflected in one downstream country’s skepticism and reluctance to engage in multi-lateral information exchange.

Since 2008, the Central Asia Energy-Water Riparian Dialogue has engaged the governments of the Aral Sea Basin (Central Asia and Afghanistan), civil societies, and diplomatic and development agencies in a program to share information and shape the assessment studies of the proposed Rogun Hydropower project. The consultation process is unique and innovative for Central Asia and has vastly increased the transparency and scrutiny of the studies in a highly charged political environment. It demonstrates alternative, good practice approaches to energy-water dialogue.

In response to the countries’ concerns over the objectivity and rigor of the assessment studies, the dialogue process applies international good practice in consultation on transboundary projects. Beginning with the Terms of Reference in 2008, four additional consultation periods since 2011 have covered technical, social, and environmental aspects of the proposed project. At each key step in the studies, stakeholders are provided with information on the study findings, comments are invited, and face-to-face consultation are held across all six countries. The studies’ Bank-funded International Panels of Experts attend all consultations and are responsible for translating comments into formal recommendations to the government of Tajikistan. These comments are tracked through the process.

The results of the dialogue are measured in the terms of engagement, transparency, impacts on the studies, and political tensions. Stakeholders have repeatedly expressed appreciation for the process; previous sources of information were the country governments themselves based on outdated information and political interpretations. A large community of stakeholders (over 60 civil society organizations, all six riparian governments, and over 40 members of the development and diplomatic communities) are better informed of the studies (purpose, content, and timing) and are more knowledgeable about the potential benefits, impacts, and risks of the proposed project. All country governments have engaged, although Uzbekistan has only occasionally done so through exchange of letters. All information has been provided to the Government of Uzbekistan and the World Bank has ensured ongoing bilateral discussions through the process. The World Bank and the Panels of Experts have reviewed and responded to all comments, all of which are publicly available.

Specific topics raised by stakeholders were incorporated into the study, in particular related to dam safety and downstream flow impacts, and several project design aspects were changed.

The team convened two consultations in 2013. In February, the team discussed geology and hydrology, as well as a comparison of different project alternatives and explanation of the modeling of water management. In October, the team presented the first two of four draft final reports, addressing the key salt wedge (geologic) concern and an assessment of the quality of existing works. Stakeholders learned that the salt wedge, with specified management measures, poses no risk to dam safety. The assessment of existing works identified several required actions to ensure ongoing reliability and safety. Further consultations on the draft final Techno-Economic Assessment Study and the draft final Environmental and Social Impact Assessment are expected in 2014.

CENTRAL ASIA ENERGY SECTOR COORDINATING COMMITTEE 2009–2013

Regional Institutional Capacity Development
The uneven distribution of natural resources and inadequate infrastructure mean that most Central Asian countries face winter energy shortages. These shortages are expected to worsen in the coming years as demand grows and aging infrastructure needs to be replaced. The challenges in promoting regional energy coordination are reflected in the breakdown of grid services and power transfer by some 90 percent since the early 1990s. This decline is the result of persistent and, in some cases, growing energy shortages in almost all the Central Asian countries, coupled with an increased concern for national energy self-sufficiency. Aging transmission infrastructure and grid services and tensions between countries related to managing power flows and overdrews add to the challenge. Finally, internal tariffs and price signals undermine strong economic signals for a regional energy market.

Regional energy cooperation provides a vital opportunity for integration of energy markets to overcome the impact of uneven distribution of energy and water resources, optimize existing energy interrelationships, and develop least-cost solutions to energy constraints. The economic benefits become available by taking advantage of different energy types (thermal, hydropower) with different services and cost structures and different demand profiles.

The Energy Sector Coordinating Committee (ESCC) is a core forum in Central Asia, where the countries can discuss and explore options to strengthen energy cooperation in the region. It is unique because it not only brings together the five Central Asian countries, but also engages key potential energy partners, such as Afghanistan, Pakistan, Mongolia, China, and Azerbaijan. Such dialogue and information exchange related to possible benefits is critical to addressing the obstacles to cooperation. The ESCC continues to be guided by CAREC’s
Strategy for Regional Cooperation in the Energy Sector and agreed work programs.

The activity was focused on supporting international dialogue on regional investment, analysis and policy reform in Central Asia. The ESCC, co-chaired with the ADB, provides a critical forum to convene Central Asian energy experts, seek guidance on priorities, and share CAEWDP outputs. While the scope of the Program extends beyond the ESCC mandate, ESCC activities are synchronized with the Program’s work program. The ESCC followed an agreed work program between 2009 and 2012, which set the foundations for a subsequent 2013-2015 program (covered under a separate CAEWDP-funded activity).

The 2009–2012 program achieved the following:

- Estimation of economic benefits from regional energy coordination (about $1 billion per year) and identification of priority actions. These results were followed up by the USAID-funded RESET Program that focused on technical assistance and capacity building. Dialogue within ESCC led to an extended analysis of national level incentives and constraints to intra-Central Asia trade as part of the 2013–2015 work program.
- Dialogue forum for increased trade with South Asia, including the CASA 1000 project to construct a high voltage transmission line to evacuate excess summer power from Tajikistan and Kyrgyz Republic to Pakistan through Afghanistan. The ESCC was the only forum in which all interested parties (extending beyond the investing countries to other Central Asian countries) could discuss the project. Benefits from this investment are estimated at a benefit-cost ratio of 1.34 (for a discount rate of 10 percent) and an Economic Internal Rate of Return (EIRR) of 15.6 percent.
- ESCC also provides the main forum to discuss further possible energy integration among Central Asia and South Asia through exploration of a Turkmenistan-Uzbekistan-Tajikistan-Afghanistan-Pakistan (TUTAP) series of investments in energy trade. Through the ESCC, these ADB-led investments are being coordinated with the CASA 1000 project, with promise of lower costs and broader development impacts (involving an additional two counties compared to CASA 1000 alone).

CAEWDP—ENERGY WATER MODELING/DECISION SUPPORT SYSTEM PHASE I

Strengthening Analysis for Integrated Water Resources Management

At present, the knowledge base for an evidence-based dialogue on water and water-related energy management is fragmented, is not trusted by all parties, and does not assist individual countries in understanding their national situations or the national implications of regional actions and investments. As a result, there is poor understanding of possible choices, trade-offs, and benefits. The lack of a knowledge platform is exacerbated by wide variations in country capacity, access to and familiarity with existing tools. This is in part due to the historical focus on such analysis in the Scientific Information Centre of the Interstate Committee for Water Coordination (ICWC) located in Tashkent, Uzbekistan. Among the tools needed to understand

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9 Regional Energy Security, Efficiency and Trade Program (RESET) was launched in November 2010 to help the six participating countries put in place the enabling conditions that will (i) re-establish economic dispatch in Central Asia; (ii) attract the least-cost investment needed to assure a base-line of energy & water security in each country; and (iii) increase profitable energy trading within the region and open new markets to South Asia and beyond. RESET also interacts and collaborates with other existing international and regional organizations and initiatives that focus on establishing / facilitating a power market or fostering increased cooperation on energy-water issues in Central Asia.

10 In addition, the Program funded early feasibility studies.

better the options for integrated water resources management (IWRM) will be a collectively created modern and transparent knowledge base that takes full advantage of existing systems and capacity in the region, and maximizes the appropriate application of emerging technologies and tools.

The Energy-Water Modeling Activity (Phase I) initially aimed at developing a framework for a renewed decision support system that would be acceptable to and accessible by all Central Asia countries and institutions. However, it quickly became clear (through national consultations) that the basic foundations for such a sophisticated—and agreed upon—system did not exist. In response the activity focused on establishing a paradigm shift in the principles for future knowledge management, and in engaging each country on an equal footing. Part of the solution is to strengthen the accessibility and deployment of publicly available global data sets to augment highly fragmented and closely held local data on water management.

The singular achievement in 2013 for this activity was the completion of the Roadmap for Strengthening Analysis for Integrated Water Resources Management (IWRM). The Roadmap reflects a significant outcome; a paradigm shift for analysis of IWRM in Central Asia. Through the consultation process and knowledge forum, stakeholders stressed the importance of approaching the future challenges of water resources management in ways that are different from the past, and stated their intent to do so. They concluded with a confirmation of governing principles and the draft Roadmap to strengthen IWRM regional analysis. The Roadmap also, for the first time, explicitly identified the role of national level roadmaps as a critical base for the regional efforts. The Roadmap identified 12 key activities to be supported by the World Bank and its knowledge partners to promote a new knowledge platform, including for example, updated operations-based modeling (e.g., flood management), an institutional needs assessment that fully considers new tools, and communications opportunities, as well as a greater role for national IWRM institutions.

The Roadmap was the cumulative result of a consultative approach, beginning with experts from across Central Asia and followed by National cross-sectoral workshops. Consultations were augmented with various diagnostics and comparative analytics of models for water management, including the development of a state-of-the-art demonstration model public domain data and modeling platform. One result was the IWRM Knowledge Forum “Strengthening Analysis for Integrated and Adaptive Water Resources Management in Central Asia.”12 The Knowledge Forum brought together delegations of technical specialists from a range of sectors (including water and energy) from six countries to exchange information on cutting edge approaches to analysis for IWRM, as well as key initiatives in the region.

The Roadmap engaged the regional water institution, IFAS, and the energy forum, CAREC’s Energy Sector Coordinating Committee, leveraging and ensuring consistency with other CAEWDP activities. This activity specifically met results framework milestones related to expanding data management to enhance energy-water analysis. The activity also contributed to a third indicator related to strengthening IFAS by highlighting the modeling work of the Executive Committee, although progress was tempered by the delay in transition of the Executive Committee over 2012–2013. Looking forward, the Roadmap will identify specific actions for institutional strengthening to be implemented in the next phase.

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12 Pre-forum consultations (June 2012) and the Knowledge Forum (July 2012) included 64 participants from all six Central Asia countries 20 percent were women.

The Forum was the first time a cross-sectoral team from all countries of the Aral Sea Basin had convened on a framework for a regional-level IWRM decision support system.
V. Trust Fund Management

Program Administration

Because of CAEWDP’s ongoing effort to consolidate partnerships and establish activities that will deliver results, 2013 was a very active year. The Program hosted two Donor Advisory Committee (DAC) meetings in 2013. The in-person meeting of November 22 provided a platform for reviewing the effectiveness of the Program as well as an opportunity to share experiences and good practices. As a result of the DAC discussions, the Chair proposed extending the operational period for project implementation to January 1, 2017.

The Program continues to focus on deepening and expanding the partnership, to include a broad base of non-traditional partners. In addition to strengthening the relationship with traditional partners like USAID, the Program has strengthened partnerships with other organizations like the Japan International Cooperation Agency (JICA). For 2014, possible new partnerships with traditional implementing partners are envisaged, such as USAID.

Strengthening human resources has improved coordination efforts, accelerated activity initiation, and further strengthened cooperation between the Program and the World Bank’s internal work plan. The present team is led by a Program Manager and includes one Partnership Specialist (recruited in late 2013), three Pillar Leaders, and one Administrative Assistant. In 2013, the team continued to provide support to Central Asian activities in project formulation, implementation, monitoring and evaluation (M&E), as well as facilitating the undertaking of various other capacity-building activities.

OUTREACH AND COMMUNICATIONS

Strong and effective communication of results to the stakeholders of the complex goals and objectives of the Program is paramount to maintaining confidence and to boosting partners’ engagement and participation. In line with the Program’s focus on clear outcomes and results, the Program management team has focused on capturing and communicating results at the regional and national levels.

Going forward from an existing website, the Program will develop a communications strategy and work plan to support program delivery and to boost impact-focused outreach activities. Recruitment of a dedicated communications officer is, therefore, underway, with the objective to expanding energy-water outreach through publications and national press coverage, disseminating results and providing informal contributions at meetings and workshops.

CAEWDP’s communications strategy will focus on reaching out in an open partnership mode, to wider parts of the development community, the private sector, and other national stakeholders, donors and agencies, all of whom will be collectively responsible for the resources and programmatic partnership in the future. Supporting a wider stakeholder base is essential for the Program’s sustainability in the long run. The focus will be on a reinforced visibility of the Program and showcasing of relevance and results and strengthening CAEWDP’s presence at major events.
Current Funding

The table below presents the CAEWDP’s financial situation as of 31 December 2013, including contributions received, allocated funds, disbursements and funding available.

DONOR COMMITMENTS AND CONTRIBUTIONS RECEIVED

The funding target for the multi-donor trust fund (MDTF) amounts to US$40 million over ten years. Total funds pledged through a signed legal agreement by Program donors in the MDTF represent close to 26 percent of the total funding target. As of 31 December 2013, the MDTF has received pledges totaling US$10.3 million as per the detail below:

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ALLOCATIONS FOR CAEWDP ACTIVITIES

In 2013, allocations to CAEWDP activities totaled a little over US$4 million.

### 2. Statement of Funds Utilization

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<td>Central Asia Energy Sector Coordinating Committee</td>
<td>P123803</td>
<td>60,000</td>
</tr>
<tr>
<td>Social Impact Analysis of Water Supply and Sanitation Services in Central Asia</td>
<td>P147341</td>
<td>150,000</td>
</tr>
<tr>
<td>Kyrgyz Republic - Advisory Support for the Regional Trade Initiatives Project</td>
<td>P145054</td>
<td>300,000</td>
</tr>
<tr>
<td>Tajikistan - Advisory Support for the Regional Trade Initiatives Project</td>
<td>P145054</td>
<td>300,000</td>
</tr>
<tr>
<td>CAEWDP Riparian dialogue</td>
<td>P128898</td>
<td>600,000</td>
</tr>
<tr>
<td><strong>Total Grant Approved</strong></td>
<td></td>
<td>4,082,085</td>
</tr>
</tbody>
</table>

DISBURSEMENTS

Based on the allocations detailed above, the approved activities undertook disbursements as agreed in the respective legal agreements and payment calendars, for a total of US$1.18 million in 2013, representing 29 percent of total allocations.

### 2. Statement of Funds Utilization

<table>
<thead>
<tr>
<th>Activity</th>
<th>PID</th>
<th>Disbursement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of the Role of Glaciers in Stream Flow from the Pamir and Tien Shan Mountains</td>
<td>P145760</td>
<td>37,157</td>
</tr>
<tr>
<td>CAEWDP Riparian dialogue</td>
<td>P128898</td>
<td>209,719</td>
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<tr>
<td>Central Asia Climate Change Knowledge Forum</td>
<td>P147435</td>
<td>89,194</td>
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<tr>
<td>Central Asia Energy Sector Coordinating Committee</td>
<td>P123803</td>
<td>55,557</td>
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<tr>
<td>Central Asia Energy-Water Modeling</td>
<td>P123804</td>
<td>314,750</td>
</tr>
<tr>
<td>Central Asia Knowledge Network</td>
<td>P147959</td>
<td>-</td>
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<tr>
<td>Central Asia Water Management</td>
<td>P143874</td>
<td>199,458</td>
</tr>
<tr>
<td>ECA Deep Dive: Leveraging Turn Down the Heat III ESW for Europe And Central Asia</td>
<td>P148173</td>
<td>8,617</td>
</tr>
<tr>
<td>Heating and Energy Efficiency Assessment for the Building Sector of the Kyrgyz Republic and Tajikistan</td>
<td>P133058</td>
<td>26,232</td>
</tr>
<tr>
<td>Power supply options study (TAJ)</td>
<td>P128881</td>
<td>151,880</td>
</tr>
<tr>
<td>Promoting Irrigation Efficiency in Central Asia</td>
<td>P129682</td>
<td>-</td>
</tr>
<tr>
<td>Social Impact Analysis of Water Supply and Sanitation Services in Central Asia</td>
<td>P147341</td>
<td>12,995</td>
</tr>
<tr>
<td>Strengthening Irrigation Governance</td>
<td>P147203</td>
<td>32,839</td>
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<tr>
<td>Tajikistan Energy Sector Dialogue</td>
<td>P147022</td>
<td>46,688</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>1,185,085</td>
</tr>
</tbody>
</table>
AVAILABLE FUNDS AND FUNDING TARGET
Prospects for 2014 and beyond are positive since, as of 31 December 2013, the MDTF had US$6.1 million available for allocation to new activities. This is the difference between funds granted and funds received. The SECO contribution is expected early in 2014 allowing for more allocations and new activities to be initiated. While such prospects are good news, there is still a funding gap of US$30 million to reach the US$40 million target.
CENTRAL ASIA ENERGY WATER DEVELOPMENT PROGRAM

Working FOR Energy
AND Water Security

PROGRESS REPORT 2013