

Pillar 3: Energy Water Linkages

Summary from National Discussions with Energy and Water Stakeholder

Background. The Central Asia Regional Economic Cooperation (CAREC) Energy Sector Coordination Committee (ESCC) Central Asia Action Plan Pillar 3 identifies the need to analytically integrate two resources and model impacts of energy and water projects on a range of users across all countries in the Syr Darya and Amu Darya river basins¹. Subsequent meetings of the ESCC (followed by Senior Officials Meetings and Ministerial Conferences) supported a phased approach to strengthen cooperation through an analytical and mathematical modeling framework that integrates energy and water for the Central Asia region. Phase 1 of meeting this objective is to develop the analytical and mathematical modeling architecture or philosophy; and a Phase 2 will implement the findings of Phase I to adapt and/or formulate an agreed upon model and analytical base for integrated water-energy resource management. This background note reports on progress in Phase I.

Previous activities. Pillar 3 had its genesis in the priority actions identified and adopted at the CAREC-ESCC workshop in Almaty in September 2009. A reconnaissance-scoping consultations took place August 21 to September 21, 2010 with the objective to meet with individual national energy and water technical specialists and begin defining the technical and institutional baseline for an energy and water analytical and modeling framework, a decision support system (DSS) for which the consultation outcomes were reported to the ESCC at a workshop held in Bishkek on September 23, 2010. Among the key findings was the need to directly involve a wide range of experts at the national level in the design of the DSS's model architecture, this engagement requires ownership to ensure the national characteristic and priorities are taken into consideration. All national counterparts emphasized the need to build a comprehensive and transparent analytical tool to enable a clear exposition of the facts and alternatives, linkages, and tradeoffs upon which the countries can technically agree. Past efforts to model the Central Asia water system have been attempted, but existing basin models have not found common agreement or widespread use. The proposed approach, of national engagement in formulating a DSS through multi-sectoral national discussions in each country, was endorsed by the ESCC representatives at the Bishkek meeting, then later presented and approved at the CAREC Senior Officials Meeting (31 October, 2011) and later at the 9th Ministerial Conference of CAREC (2 November, 2010).

Energy-water linkages national discussions. The energy-water national discussions, in a workshop format, were held 22 February – 26 March 2011, in Kazakhstan, Kyrgyz Republic and Tajikistan, and a one-day discussion was held in Afghanistan. Discussions will be held in Turkmenistan and Uzbekistan at the disposition of each Government. The number of participants ranged from 19 in Kazakhstan to 29 in Tajikistan, 37 in Kyrgyz Republic and 40 in Afghanistan. The aim of these discussions was to bring together a multi-sectoral group of national technical experts. The participants included senior officials from the energy and water ministries as well as the technical institutes associated with these ministries, other concerned ministries and agencies, independent research institutes, academia and the Academy of Sciences, and NGOs; and included both young and senior professionals from diverse disciplines. The discussions focused on developing a DSS for energy and water. A DSS is an analytical tool and mathematical model that utilizes a class of computer-based information systems including knowledge-based systems that support decision-making activities. The model architecture of a DSS has three fundamental elements: (i) the data, a knowledge base and information system; (ii) the tools, a set of

analytical tools and mathematical models with which the data can be analyzed; and (iii) the user, an output-user interface to display the results in a form that informs and supports decision making. The objectives of the national discussions, in the context of the key parameters of a DSS, were to (i) identify and discuss, national priorities for water and energy in terms of key issues and identify criteria for the model architecture, and (ii) to review and discuss several case studies of DSS application to different planning problems. An additional day was designated for hands-on training on a hypothetical DSS developed by the World Bank Institute (*Basin IT*). It is important to note that these discussions were informal discussions with national technical energy and water experts, NGOs and civil society, and in no way reflected the official position of the Governments.

Main outcomes of the national discussion. The outcomes from the discussions were insightful and captured individual national concerns and issues. There was a remarkable common thread of issues on energy and water security, the environment and agriculture, and social concerns; and there was considerable agreement among the countries about the importance of these issues and the criteria by which objectives are defined and alternatives measured. Yet, there were also unique priorities, which varied from country to country; for example while both Kyrgyz Republic and Tajikistan are concerned about winter energy deficits and overall energy production, Tajikistan is also additionally focused on exports. Afghanistan's concerns are typical of a country of which the electricity system is very inadequate and every aspect has to be improved including achieving production levels sufficient to achieve self-sufficiency. All participating countries prioritized food security and achieving higher agricultural production and productivity, and priorities in domestic and industrial water supply are also very similar. Priority concern for the environment is present in all countries but it takes on a different dimension depending on the overriding issues. There are also social issues that on the surface seem distinct with each country, but would likely be found to be more common among the countries after more detailed discussions, linked by concerns of reducing poverty and increasing GDP and economic growth.

It is recognized that these outcomes from these national discussions are partial and a high priority is put on expanding the outcomes to include perspectives from Turkmenistan and Uzbekistan. These two countries are critical downstream riparian and are likely to express needs and priorities within their own national context.

From the discussions on future engagement, national participants acknowledged that individual national technical teams should be formed to include appropriate technical energy, water specialists. The composition varied, to the extent that Kyrgyz Republic participants expressed a desire to extend the engagement to a broader context to include representatives from civil society, legal community and other relevant specialists. In all countries, the participants stipulated that any technical team that is formed would require the involvement and support of senior government officials. Each country acknowledged the importance of a regional entity, there is value for a six-country Modeling and Decision Support Technical Sub-Committee, with the purpose to advise on and recommend refinements to energy-water DSS. However, it was agreed that the specifics on such a sub-committee would be discussed further as the national advisory groups were formulated and secured.

Other key messages from the discussions. The countries generally reiterated their key message from the August-September, 2010 scoping meetings; namely, that a new effort and approach is warranted to

understand water and energy issues in the basins, in the formation of a transparent analytical tool (DSS) for the basins. They welcomed the proposed initiative. At all the discussions, the participants endorsed the value in convening multi-sectoral professionals; this approach is extremely beneficial to better understand the differences and commonalities in the energy and water sector. The participants also valued these discussions as a networking opportunity. Participants stressed the importance of building confidence and trust among the countries encouraged this type of multi-sectoral engagement.

Other Issues. Recognizing the commonalities across the countries is valuable, but this initiative cannot ignore nor discount the differing concerns amongst the countries in the objectives of water and energy management in the two basins. Since independence in 1992, the Central Asia has become five independent sovereign states with different political systems and social and economic aspirations and goals. In this new context, priorities among varying Key issues shift to satisfy individual national demands in ways that make it difficult to meet the water regimes required by other riparians whose priorities are different. This is particularly true in the context of upstream and downstream riparian interests and priorities. Proposed energy water linkages discussions with Turkmenistan and Uzbekistan, the two downstream riparian countries are currently pending, would individually benefit these countries in identifying their national issues and priorities, as seen by the discussions with the other countries to date, and would be an indelible value to the individual downstream riparians and the basin as a whole.

Next steps. The World Bank has distributed to the participants at the national workshops, draft copies of the national consultation reports and the summary report for stakeholder comments. The World Bank will finalize each national report upon receiving input from national stakeholders. The World Bank looks forward to engaging in consultations in Uzbekistan and Turkmenistan at the disposition of the individual Governments. For Afghanistan, at the request of the Government, the Bank will support an additional effort to discuss transboundary principles and issues and DSS, to compensate for the reconnaissance-scoping consultation. The World Bank will continue an in-depth evaluation of existing basin models in preparation for a regional workshop. The World Bank will facilitate a regional workshop, to complete the Phase 1 energy-water linkages program. The workshop is tentatively scheduled for early September 2011 and would bring together national technical teams from the six countries to explore options for developing a framework for the regional DSS.

Endnotes

¹ The countries in the Amu Darya and Syr Darya river basins: Afghanistan, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan.