



Central Asia Regional Economic Cooperation Program

Reference Document
For Session 3 of the Senior Officials' Meeting
October 2013

Energy Sector Progress Report and Work Plan (October 2012–September 2013)

**Senior Officials' Meeting
Central Asia Regional Economic Cooperation
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Astana, Kazakhstan**

I. KEY DEVELOPMENTS IN THE ENERGY SECTOR

A. Sector Implementation

1. The coverage of this progress report includes activities undertaken since the Senior Officials' Meeting (SOM) and Ministerial Conference (MC) held in Wuhan, Peoples' Republic of China in October 2012. In the aforementioned meetings, the Energy Work Plan 2013-2015 (EWP) was endorsed and approved. The EWP 2013-2015 is envisioned to help achieve the goals of: (a) providing a roadmap for the translation of the vision articulated in the Energy Action Plan (EAP) Framework into reality; (b) providing a mechanism for identifying and developing projects and programs that have great potential for regional integration and trade; and (c) promoting the setting-up of national production facilities with the objective of exporting output to second and third countries.

2. Progress of work in the energy sector is reflected in the overall Central Asia Regional Economic Cooperation (CAREC) Results Framework 2011 by two indicators, i.e., (i) increased energy generation capacity (megawatt), and (ii) transmission lines installed or upgraded (kilometers). Three indicators were added in the September 2012 Energy Sector Coordinating Committee (ESCC) meeting to expand the monitoring scope of and fully capture activities in the energy sector; (i) rehabilitated generation capacity (megawatt), (ii) new substations (megavolt-ampere), and (iii) upgraded substations (megavolt-ampere). These indicators are intended to capture how CAREC's physical infrastructure expansion and rehabilitation operations contribute to energy security, energy efficiency, and the CAREC region's ability to enhance power trade as a result of completed projects.

3. The baseline year for the indicators is 2013 and will be included in the 2014 CAREC Development Effectiveness Review (DEfR) process. The energy sector output indicators for 2012 are presented in the following table:

Energy Sector Output Indicators

Indicator	2009 Baseline Value	2011	2012	Projected Outputs for 2013– 2015	Progress
Transmission lines installed or upgraded (km)	850	1,150	322	755	
Increased energy generation capacity (MW)	820	...

 The indicator value for the current DEfR has made progress and improved over the indicator value reflected in the previous DEfR cycle. Indicator is "on track".

B. Addressing Actions Proposed in the 2012 CAREC DEfR and Ongoing Key Issues

Priority Actions in the CAREC Program for the Energy Sector (Implementation of the EWP 2013-2015)

4. The EWP 2013-2015, formulated to ensure effective and timely achievement of the strategic objectives laid out in CAREC 2020, has six actionable elements to implement sector operational priorities. Implementation of the EWP 2013-2015 will be tracked and reported biannually, and reviewed at the SOMs and MCs.

Element 1: Developing the Central Asia – South Asia Energy Corridor

5. **Action Initiated:** At present, the implementation of Element 1 is supported by two complementary projects, namely: (i) Central Asia – South Asia Electricity Transmission and Trade Project (CASA-1000); and (ii) Turkmenistan, Uzbekistan, Tajikistan, Afghanistan, Pakistan (TUTAP).

6. CASA-1000 Project. The project commercial contract framework, model Power Purchase Agreement, Master Agreement, and Coordination Agreement have been developed. The project commercial structure has been finalized. The project participating countries are working towards reaching a financial closure in January 2014 and completing the ongoing negotiations on commercial agreements by March 2014.

7. TUTAP/Afghanistan Power Sector Master Plan. Investments have begun with the Turkmenistan/Afghanistan 500 kV interconnection, with Turkmenistan 500kV line under construction (to be completed in 2013) and bidding documents for Afghanistan component to be issued in November 2013. Within Afghanistan, the North-South 500kV project and the financing of the 1st 500MW high voltage direct current back to back station is for consideration by the ADB Board in November 2013 and Q3 2014, respectively. It is expected that an update and/or addendum to the Afghan Master Plan will incorporate the outcomes of the CASA 1000 review on optimization schedule and network planning, as well as identify opportunities to export via the Kabul convertor.

8. **Next Steps:** Asian Development Bank (ADB) and the World Bank will continue coordination between the CASA-1000 and TUTAP projects to maximize benefits for countries from both initiatives.

Element 2: Resolving Regional Energy Dispatch and Trade Issues

9. **Action Initiated:** Two studies completed under the ESCC Energy Action Plan Framework (2010-2012)¹ highlighted substantial potential benefits of enhancing the electricity trade among the Central Asian countries. However, numerous constraints² and concerns of countries have impeded exploitation of these opportunities leading to declining electricity trade. To address these constraints, two core activities—the United States Agency for International Development-Regional Energy Security, Efficiency and Trade (USAID-RESET) and Enhancing Central Asia Regional Power Trade and Cooperation Programs—have been adopted by the ESCC. Under the USAID-RESET program various seminars regarding energy information systems, security and integration for electric market support, as well as on automatic meter reading, and supervisory control and data acquisition systems, were completed and a full university level curriculum on the design and operation of power markets was commissioned and offered in fall semester 2013.

10. The World Bank program “Enhancing Central Asia Regional Power Trade and Cooperation” aims to promote energy and/or power trade and integration between Central Asia countries with a view to increase efficiency of their respective power systems, enhance reliability and security of electricity supply, reduce power shortages, and avoid greenhouse gas emissions. The program will be implemented in two phases: (i) phase 1—fact-finding and data analysis; and (ii) phase 2—implementation of specific activities identified in phase 1. Phase 1 is ongoing and will be completed by February 2014, while phase 2 will take place between March 2014 and June 2015.

11. **Next Steps:** The USAID will conduct more training seminars until the conclusion of the RESET program in September 30, 2014.

¹ “Load Dispatch and System Operation Study for Central Asian Power System” by Mercados, and Central Asia Regional Economic Cooperation: Power Sector Regional Master Plan” by Fichtner

² Suboptimal use of natural resources and power assets, suboptimal dispatch and winter shortages, among others

12. The World Bank will undertake consultations with national Ministries of Energy, dispatch centers, grid operators, utilities, and the Coordinating Dispatch Center which will be organized in the last quarter of 2013. It will also hold a Central Asia regional workshop in January or February 2014 to present the outcome of phase 1 of the Enhancing Central Asia Regional Power Trade and Cooperation program to agree on the priority activities for phase 2. The World Bank will present updates on the progress of the program at the next ESCC meeting.

Element 3: Managing Energy-Water Linkages

13. **Action Initiated:** The objective of this element is to improve understanding of the linkages between energy and water resources. A set of activities proposed by the World Bank to strengthen the key elements of a knowledge platform and decision support system, with the addition of topics on hydropower development, have been adopted by the ESCC. Several activities, including energy sector vulnerability to climate change, “Basin Economic Allocation” and AraIDIF demonstration models, and Central Asia energy water knowledge portal and network, are being initiated by the World Bank.

14. **Next Steps:** Additional activities as identified in the June 2013 ESCC meeting and updates on ongoing activities will be presented in subsequent meetings of the ESCC.

Element 4: Mobilizing Funds for Building Energy Assets

15. **Action Initiated:** The September 2013 ESCC meeting endorsed the proposed ADB technical assistance (TA) of the CAREC Power Sector Financing Roadmap and requested to expand it to all 10 CAREC member countries. The technical assistance aims to examine potential sources of finance for power sector development in CAREC countries, covering both national and cross-border projects, and identify projects with a public–private partnership potential. The TA will critically examine the enabling environment in each country for private investment in the power sector. Further, the TA will formulate recommendations for the establishment of project development facilities if the need of such entity will be identified.

16. The ESCC members requested the financing roadmap to be undertaken on an urgent basis, with due interaction with each country and focused on the financing possibilities. The inception report is expected in the second quarter of 2014.

17. **Next Steps:** A request for proposals for the proposed technical assistance will be issued by ADB after endorsement at the October 2013 SOM.

Element 5: Implementation of Energy Sector Priority Projects

18. **Actions Initiated:** Preparation of a medium term priority projects list for the energy sector was initiated in 2011 and several project selection criteria were discussed. The CAREC 2020 identified the Medium Term Priority Projects (MTPP) list as one of the key activities for all sectors and the commitment to formulate one was reaffirmed in the 11th Ministerial Conference held in Wuhan, Peoples’ Republic of China in October 2012. In line with the resolution of the ESCC meeting in June 2013, a draft MTPP list was circulated to member countries for review and comments. Each country updated the project list based on confirmation of national and regional priorities. Some member countries also expressed concerns on projects identified by other countries.

19. Projects included in the draft MTPP were required to satisfy the following criteria:

- (i) Projects located in CAREC countries with grids interconnected with other CAREC countries;
- (ii) With financing to be approved in 2013–2015; and

- (iii) Involving rehabilitation or installation of new generation (50 MW or above) or high voltage transmission (220 kV or above) assets.

20. The draft list together with the reservations expressed by some countries on projects of other member countries and additional comments from Uzbekistan, Kyrgyz Republic, and Tajikistan (received after September 2013 ESCC meeting) were discussed at the National Focal Points (NFP) meeting in Bangkok on 27–28 September 2013. However, unanimous agreement on the list could not be reached as some countries had reservations regarding certain projects in other countries.

21. **Next Steps:** Following the NFP meeting in Bangkok, the ESCC has been mandated to expeditiously settle the issues raised on the draft MTPP, ensure that no differentiation in due diligence requirements is applied to project selection in the formulation of the priority project list. The need to revisit how the CAREC consensus principle can be better applied in such situations was emphasized in the meeting. It was noted that the spirit of cooperation in CAREC needs to be kept in high standing, and amicable solutions should be found.

Element 6: Capacity Building and Knowledge Management

22. **Action Initiated:** Topics for the capacity building activities have been discussed at a number of ESCC Meetings and updated in June 2013. The ESCC meeting in June 2013 further discussed the list of activities and made additional suggestions. One of the capacity building topics requested by members was legal and regulatory implications of the regional power trade. Suggestions have been integrated into a revised plan for capacity building under the EWP (2013-2015) which is annexed to this progress report.

23. The Energy Charter Secretariat was invited to the June 2013 ESCC meeting to present the Energy Charter objectives, process and Treaty, and share its expertise on energy sector reforms in the context of the World Trade Organization.

24. Two activities took place in 2013 with support from the CAREC Institute (CI), i.e., site visit to the newly inaugurated Solar Power Station in Kapchagai, Almaty, Kazakhstan and the country presentations on renewable energy initiatives, both of which were conducted side by side with the 16th ESCC meeting in September 2013. The site visit to the newly inaugurated Solar Power Station in Kapchagai, Almaty capped the ESCC meeting in September 2013. This was a new element at the ESCC meeting, which was highly appreciated by the country representatives. It is intended that field visits will be pursued during future ESCC meetings.

25. Member countries (with the exception of Kazakhstan who was requested to present overall energy strategy) presented their respective government's current regime on renewable energy, i.e., programs and policies, strategies, activities and targets related to renewable energy. It was agreed that more specific country presentations will be requested from members in future ESCC meetings.

26. The September ESCC meeting endorsed the proposed energy sector capacity building and knowledge framework program for 2013–2015 under the umbrella of the CI, wherein a one substantial event is envisioned per year for 2014-2015. ADB also committed to implement improvements on the CAREC website energy page and transform the page into a platform for maintaining and disseminating available information on the energy sector.

27. **Next Steps:** The annexed approved list of topics will serve as a guide to capacity building activities for 2014–2015 under the CI and will be coordinated with similar activities of USAID. The ADB/CI will initiate implementation of the energy sector capacity building and knowledge framework program and preparations to hold two 3-day workshops tentatively scheduled in June 2014 and June

2015. The target participants for the workshops are officials from the Ministries of Finance and Energy, as well as utility companies.

28. ESCC will attempt at incorporating site visit and country presentation activities in future meetings to encourage information dissemination and sharing of best practices among member countries. At the next ESCC meeting, Kazakhstan is requested to present on the development of the country's electricity market.

29. ESCC will strengthen its cooperation with other energy entities such as Energy Charter, International Energy Agency, International Hydropower Association, etc. especially on improving capacity building and knowledge management events for CAREC countries.

Future Directions for the ESCC

30. The aim is to focus on ESCC's strategic content and activities including logistical/administrative arrangements for 2015-2020. Each country expressed initial thoughts and ideas on the objective with agreement on two specific actions prior to the next ESCC meeting:

- (i) ADB to prepare a position paper based on the ideas presented by the CAREC countries and circulate this position paper in a timely manner prior to the next ESCC meeting; and
- (ii) ESCC members to discuss and debate the future directions and activities of the ESCC, and ensure that they are prepared to discuss this topic in a detailed manner at the next ESCC meeting.

31. The ESCC membership list is outdated. The Members, except for Azerbaijan who has already submitted new appointments, are requested to nominate ESCC representatives in coordination with NFP. The following considerations should be taken into account while making new appointments:

- (i) Two appointments are required – a policymaker at Deputy Minister level, and a technical expert at energy company management level; and
- (ii) The appointees should be able to regularly attend ESCC meetings during implementation of EWP 2013–2015.

II. KEY ISSUES FOR GUIDANCE BY THE SOM

32. The World Bank program on Enhancing Central Asia Regional Power Trade and Cooperation under the element on Resolving Regional Energy Dispatch and Trade Issues is proposed for SOM endorsement.

33. The proposed technical assistance by ADB on the CAREC Power Sector Financing Roadmap under the EWP 2013–2015 element on Mobilizing Funds for Building Energy Assets is proposed for SOM endorsement.

III. CHANGES TO SECTOR ACTION PLAN

34. The name of Element 1 was changed to 'Developing the Central Asia – South Asia *Energy Corridor*' and of Element 2 to 'Resolving Energy Dispatch *and Trade Issues*.'

Planned Activities and Subject Areas under CAREC Institute Work Plan
(2013–2015)

Activities and/or Subject Areas Based on Sector Work Plans
Central Asia–South Asia Energy Corridor. Study of interconnection options; cost-effective solutions for efficient energy resource utilization; elimination of summer and/or winter deficit; meeting of energy demand
Design of legal and regulatory frameworks for energy trade in the CAREC region. An assessment of existing policies and institutions for promoting energy trade in the CAREC region and implications and issues for the design of a regional framework
Technical operation of regional dispatch systems and alternatives
National and regional grid codes
Energy-water management: issue-based regional analysis (e.g. flood management)
Renewable Energy Alternative energy sources; balancing CAREC's energy portfolio; renewable energy potentials in CAREC; successful renewable energy projects
Cross-border Metering and Control Regional energy dispatch issues; technical and financial principles; legal and institutional implications
Regional power trade models and case studies Power trade models; lessons for CAREC
Commercial operations of regional energy grids Negotiations, contracting, dispatch and systems control, tariff setting, utility accounting and audit, operational efficiency, regulatory framework
System Planning and Optimization Software. Software application for informed decisions on technical and commercial viability, as well as prioritization.
Regional Transmission Organizations Institutional implications of energy trade; institutional models in other regions; competencies needed for these organizations
Demand side management; energy efficiency; and energy conservation
Loss reduction methods in <i>transmission and distribution networks</i>
Modernization of combined heat and power systems
Governance, tariff adjustments and operational efficiency
Public–private partnerships in energy

Activities and/or Subject Areas Based on Sector Work Plans
Cross-border Clean Development Mechanism
Management of multipurpose water reservoirs
Hydropower development in international rivers
Database on Energy Expertise and Knowledge Products in the CAREC Region Data and information on expertise (experts) as well as knowledge products (studies, master plans, models (e.g. forecasting, optimization), and software)
Database of energy projects in the CAREC region
International experience in transboundary river management and protection
<u>Modern technologies for operation of hydro and thermal power plants</u>
<u>Study tours to national dispatch centers and modern generation units</u>

Note: New Capacity Building topics added at ESCC meeting in June 2013 are underlined.