

CAREC
Energy Sector Coordinating Committee Meeting
5 -7 July 2010, Ulaanbaatar, Mongolia

**REGIONAL DIAGNOSTICS STUDY
for Energy Demand/Supply Balance
and Infrastructure Constraints**

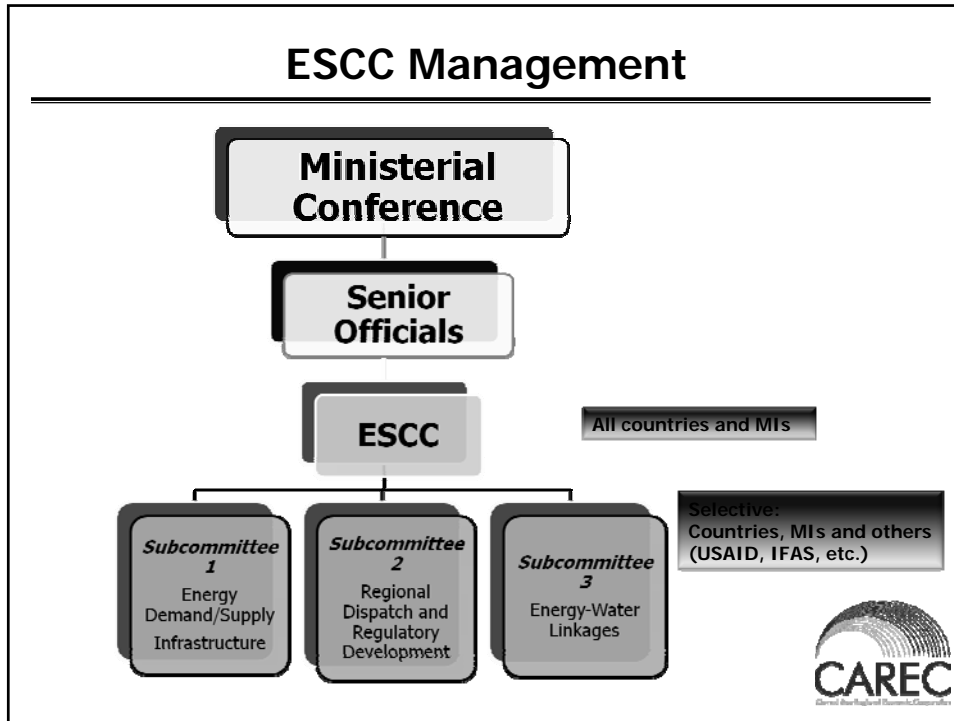
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Content of this presentation


- ESCC Management and CAREC documents
- Concept of the Energy Action Plan (EAP)
- Objectives of EAP
- Investment Projects
- Problems of Non-cooperation
- Conclusions and Next Steps



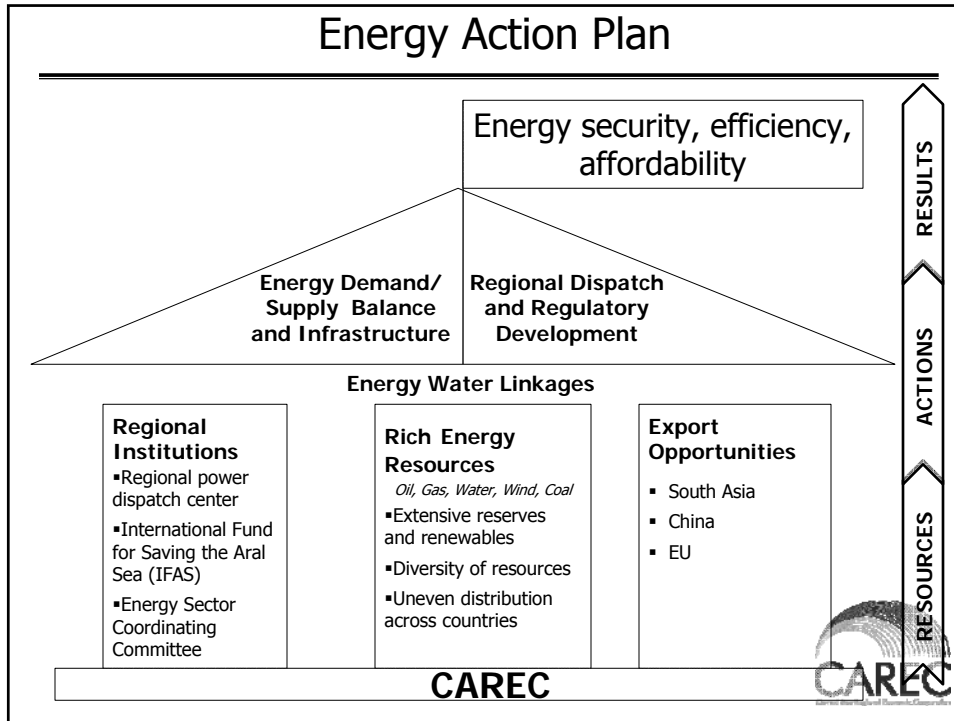


CAREC Events/Documents

Event	Date	Where	Document
7 th Ministerial Conference	19-21 Nov. 2008	Baku	Energy Strategy for Regional Cooperation
ESCC meeting	2-3 Sept. 2009	Almaty	
8 th Ministerial Conference	14-16 Oct. 2009	Ulaanbaatar	Energy Action Plan
ESCC meeting	25-26 Mar. 2010	Almaty	
<i>ESCC meeting</i>	<i>8-11 Sept. 2010</i>	<i>Issyk-Kul</i>	
<i>9th Ministerial Conference</i>	<i>31 Oct.-2 Nov. 2010</i>	<i>Cebu, Philippines</i>	Diagnostics Study

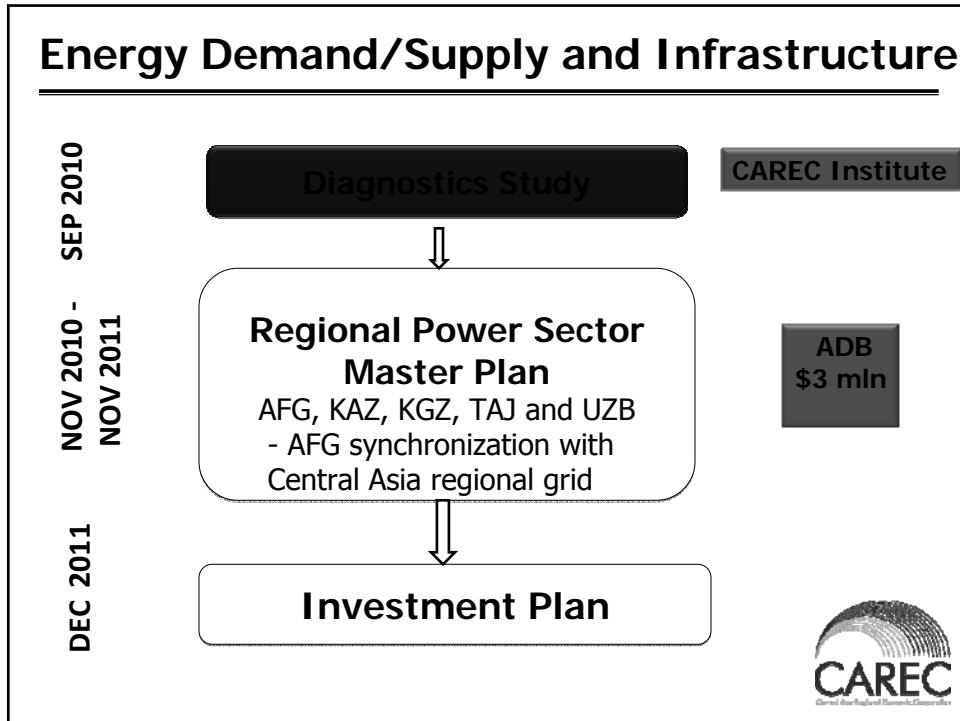



Central Asia Regional Economic Cooperation



Energy Demand/Supply and Infrastructure

	Objective	To promote regional trade by optimizing integrated transmission and generation expansion
Deliverables	Policy Area	Develop national generation and transmission plan; <i>Assess benefits of regional integration and develop integrated regional plan.</i>
	Capacity Building	Involve national /regional organizations in developing the model and execution of the plan.
	Investments	Promote/accelerate early-win grid strengthening and generation programs.



- ## Investment Projects
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- **Energy efficiency**
 - **Generation**
 - **Transmission**
 - **Operations and communications systems**
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- The CAREC logo is located at the bottom right of the slide.

Investment Projects, TA, other activities

- Completed in the energy sector during 2000 - 2010
- Ongoing
- Planned
- Gaps and Overlaps



Issues

– Technical

- Interconnectors
- Controls, Protection, SCADA/ACDA, Synchronicity, Dispatch
- Metering and Accuracies

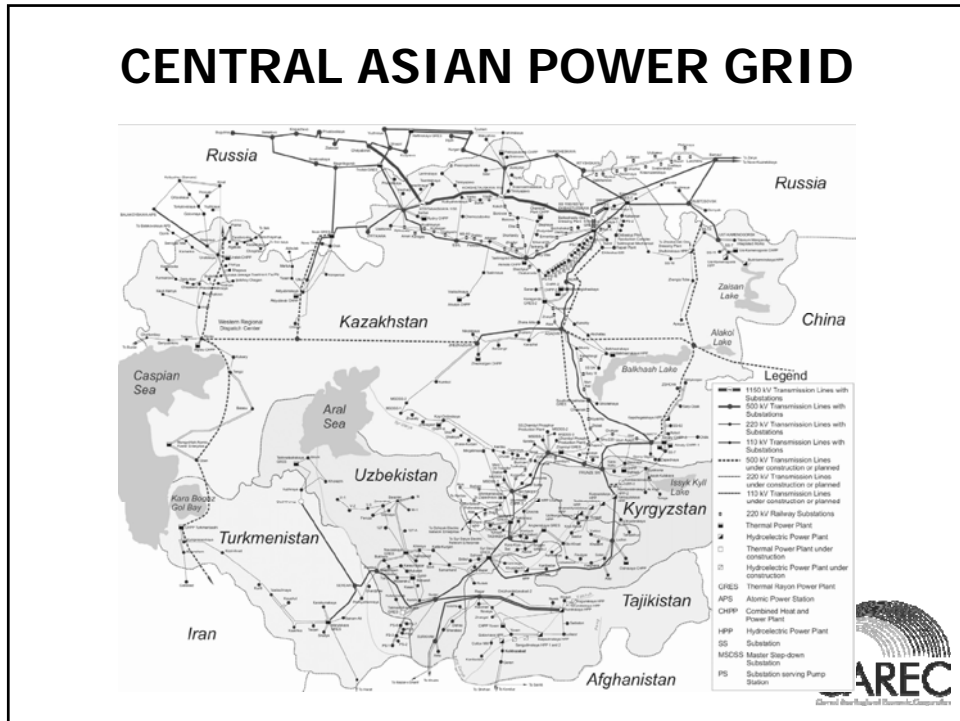
– Commercial

- Financing of the regional projects
- Cost sharing

– Political Willingness

- The Real Issue





Demand/Supply Balance *Optimal Use of Resources*

- Large water and energy resources in CA.
- Irrigated lands are mostly in downstream countries (UZB, KAZ)
- The large storage reservoirs are in upstream countries (KGZ, TAJ) to provide more regular water supply for irrigation and to generate hydropower.



Demand/Supply Balance *Winter/Summer extremes*

- Water releases and associated hydro-generation is highest during the summer growing season (April to Sept.)
- This surplus supplied to KAZ and UZB, and they, in turn, stepped down their thermal generation accordingly.
- KGZ and TAJ in return received oil and coal from KAZ and natural gas from UZB to meet their fuel needs during the winter months.



Demand/Supply Balance *United Energy System of Central Asia*

- UESCA was built based on a 500 kV transmission system
- UESCA connects KGZ, UZB and southern KAZ and includes inter-connecting lines into TAJ and TURM.
- UESCA is controlled by Coordination Dispatch Centre "Energia" in Tashkent.



Infrastructure Constraints ***UZB being 'independent' from CAIPS***

- July 2009: UZB commissioned the first unit of S/S 500 kV "Uzbekistanskaya". Further development of 500-220 kV grids
- UZB established its own internal 500 kV system to be able to break up from UESCA.
- TAJ, not being able to export its surplus electricity, is now releasing water at dams without producing electricity. Huge economic loss to the CA region.
- If UZB breaks up UESCA with KGZ, 70% of supply to southern KGZ and 30% of supply northern KGZ will be affected.



Infrastructure Constraints ***KAZ being 'independent' from CAIPS***

- Sept. 2009: KAZ completed its additional North-South 500 kV line, so that improving reliability of power supply to its South, including Almaty, by about 180 MW.
- This allows KAZ also to operate independently from UESCA.
- KGZ normally moves around UESCA from the Naryn Cascade to Frunzenskaya/ Shu/Almaty and then back into Bishkek and the rest of north.
- As a result of this, the deficit in the north could be about 30% of the demand.



Results of non-cooperation

- **Resources are not used efficiently**
- **Goods and services are more expensive**
- **Less economic growth**
- **Less job opportunities**
- **More poverty**
- **Social tensions and conflicts in the region**



Conclusions and Next Steps

- **Good understanding of potential benefits of regional cooperation seems to exist among experts, academia, utility companies**
- **However, great need for regional cooperation still remains an issue – mainly due to political reasons**
- **CA countries to be visited; Meet Institutions, ESCC participants, regulators, utilities**
- **Get detailed analysis on demand/supply balance and infra constraints;**



Next Steps (2)

- Develop project Matrix
- SWOT Analysis, Gaps, Overlaps
- Broad dissemination of the results of the study in order to push forward Energy Action Plan and regional cooperation
- Use IFI leverages to support and encourage cooperation



Thank you !

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