



CASA → 1000

**First phase of the
Central Asia South Asia Regional Electricity
Market (CASAREM)**

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Kyrgyz Republic and Tajikistan are endowed with vast hydropower potential...



...whereas Afghanistan and Pakistan face severe electricity shortages and rapidly increasing demand

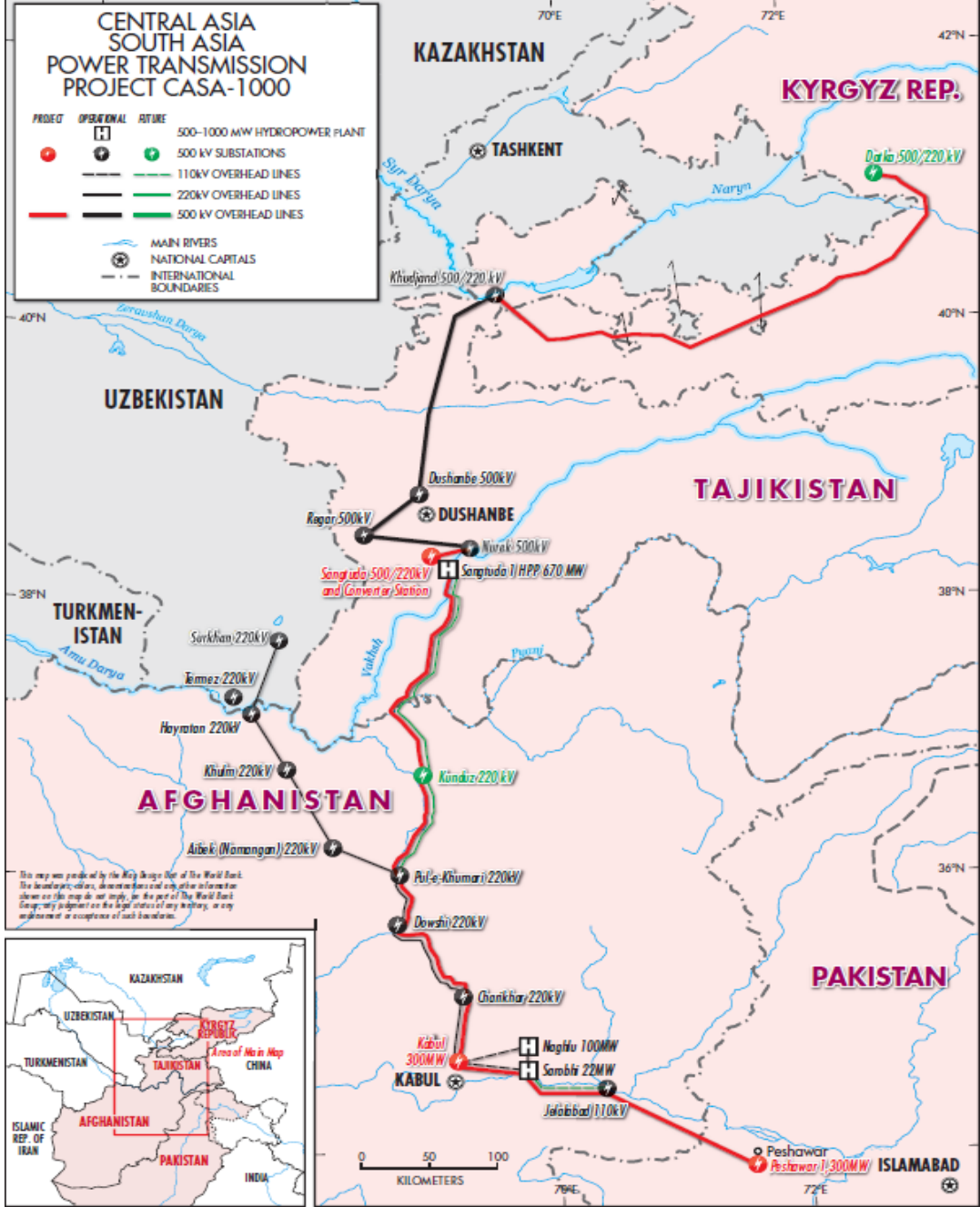
Country	Population Million	GNI per capita Current US\$	Per Capita Electricity Consumption (kWh/year)	Installed Capacity (GW)	Access Rate	Peak shortage (MW)
Afghanistan	29	310	31	0.5	13%	--
Pakistan	166	1000	413	19.8	84%	5,022



Power network in Kabul, Afghanistan
Kabulkarzaiblogspot photo



Electricity riots in Rawalpindi, Pakistan
Guardian photo



The proposed CASA-1000 transmission facilities would:

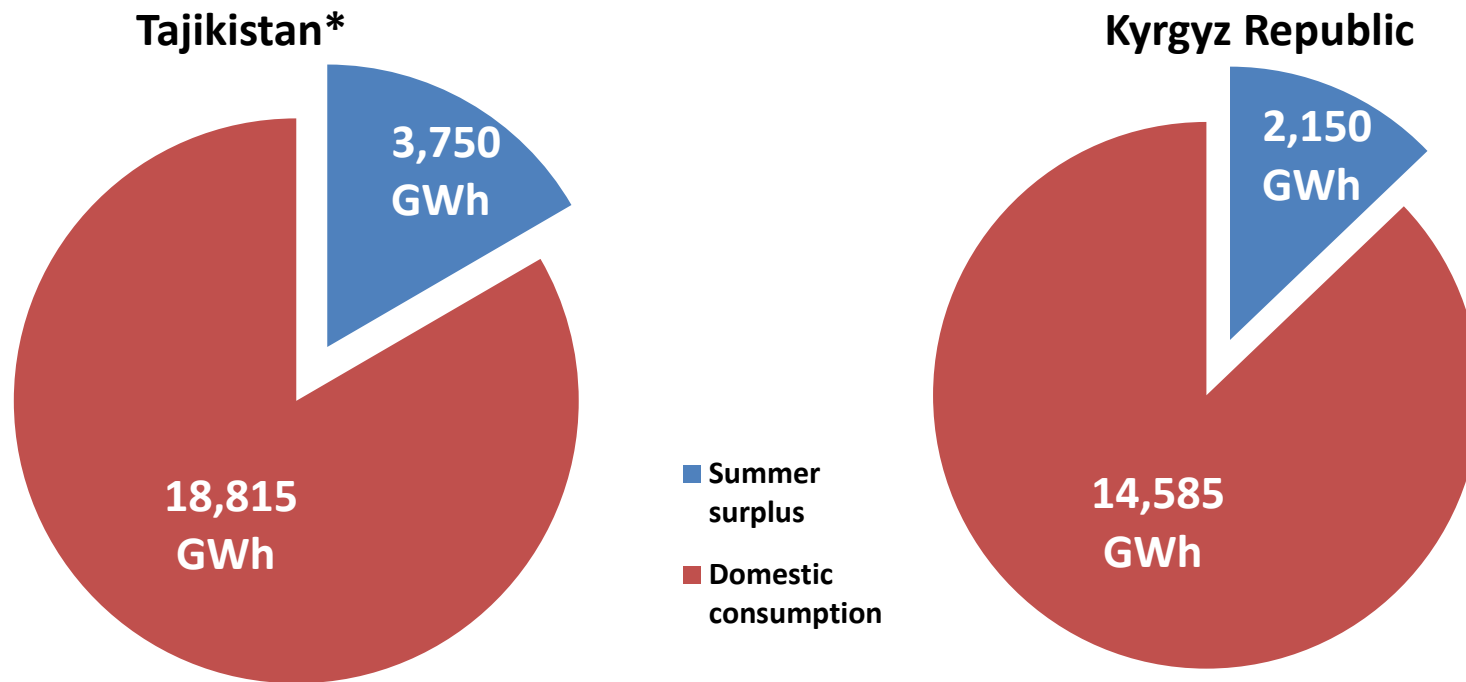
maximize the use of 1,300 MW renewable summer electricity surplus from existing plants in Central Asia (Kyrgyz Republic & Tajikistan)

and

provide electricity to consumers in electricity deficient South Asia (Afghanistan & Pakistan)

Even without new power generation, Kyrgyz Republic and Tajikistan have sufficient electricity surplus during summers to warrant CASA-1000

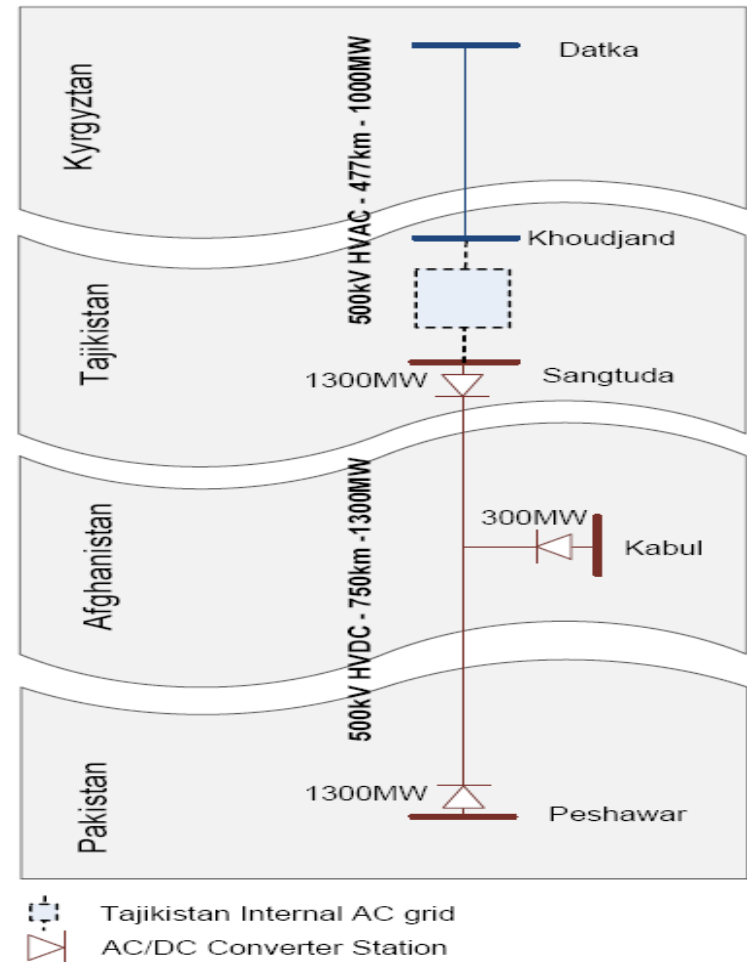
Power domestic consumption and summer surplus (est. 2016 based on feasibility report)



*Tajikistan spills water from its dams without generating electricity during the summer

The CASA-1000 project includes:

- 500 kV line Datka-Khujand (477 km), with Tajik network transferring Kyrgyz exports to Sangtuda.
- Tajikistan Grid Strengthening.
- 1300 MW AC-DC Converter Station at Sangtuda.
- 750 km HVDC line Sangtuda-Kabul-Peshawar.
- 300 MW Converter Station at Kabul (with both import & export capability).
- 1300 MW DC-AC Converter Station at Peshawar.



CASA-1000 benefits all four countries:

- Ensures a steady source of revenue from surplus hydropower exports for **Tajikistan** and **Kyrgyz Republic**, the weakest economies in Central Asia
- Uses excess summer electricity that is currently being spilled
- Alleviates electricity shortages in **Pakistan** during the peak summer season
- Replaces fuel-based power generation in **Afghanistan** and **Pakistan** with clean hydropower
- Establishes **Afghanistan** as a viable transit country, enhancing growth prospects
- Requires no new power generation investments

Project cost estimates per the feasibility study

Kyrgyz Republic	US\$ 200 million
Tajikistan	US\$ 270 million
Afghanistan	US\$ 300 million
<u>Pakistan</u>	<u>US\$ 200 million</u>
Total	US\$ 970 million

- US\$1 billion investment in countries with constrained borrowing capacity
- US State Department, AusAid, DFID, ADB, Islamic Development Bank, USAID, IFC and World Bank among the donors supporting pre-preparation activities

Project Status

- Preparation work is proceeding with Joint Working Group (JWG) through monthly VCs and face-to-face meetings.
- **IGC Secretariat strengthened** – Executive Director (ED) appointed; USAID funding additional Advisor to the ED; Secretariat accounts audited.
- **Project commercial structure finalized** – two options were reviewed (with and without setting up a separate project company.) The option of “Contractual JV” (without an SPV for CASA) is preferred by JWG; IGC resolution has been developed and endorsed by two countries (Afghanistan and Tajikistan).
- **Project commercial contract framework** and **Model PPA** developed and is under review/discussion by the countries.
- **IFC Agreement to support procurement of constructor/operator** signed by all. The Joint Working Group is working closely with the IFC to prepare bidding documents for procuring engineer/procure/construct/operate services for the project.
- CASA-1000 included in the **CAREC Energy Work Plan** (2013-15).
- **Communications** established online (www.casa-1000.org)

CASA-1000 – Completed Activities (by June 2012)

2006-09

2009-June 2011

July 2011-June 2012

Oct 2006

First Intergovernmental MoU signed.

January 2008

WB Concept Review

August 2008

Intergovernmental Agreement Signed – Intergovernmental Council (IGC) created and Secretariat established in Kabul (funded)

Early 2009

ADB suspends its support for the Project

May 2009

SAR+ECA decide to update feasibility study (earlier supported by ADB) and undertake separate ESIA (with US funding)

February 2011

- Feasibility study update completed.
- RVPs request political economy assessment
- GoR indicates strong interest in project

May 2011

- IsDB confirms their participation

June 2011

- Draft ESIA delivered – consultations planned

July /Aug 2011

- Political Assessment Study is carried

September 2011 (Annual Meetings)

- Intergovernmental Council (IGC) Meeting to confirm countries internal approvals and willingness to advance preparation is held in Bishkek

Sept- Dec 2011

- Country Working groups established
- Secretariat re-vitalized and its funding from USAID/countries secured and WG meetings
- Project overall ESIA finalized.

Jan- June 2012

- Avian Risk (completed)
- Project Implementation Structure draft discussed with countries.
- Shortlist of Executive Director for IGC Secretariat finalized
- Financial Model developed

CASA-1000 – Timeline (June 2012 onwards)

Milestones

By December 2012

- Major preparatory studies completed

By June 2013

- IGC Resolution Approved (TJK, AFG already done)
- Draft Bidding documents prepared
- Pre-qualification of Contractors

By December 2013

- Commercial Negotiations Completed and PPAs initialed
- In principle – agreement on financing

Actions after Board

- Financial Closure

Jun-Dec 2012

Jan-Jun 2013

Jun-Dec 2013

Jan-Jun 2014

Inputs

- Community Benefit Sharing Studies
- Security Risk Assessment
- Open Access and Dispatch rules (ongoing)
- Tajik Internal Grid strengthening (ongoing)
- Draft Commercial Agreements customized to CASA.
- Review and synthesize ongoing Silk route trade studies/ initiatives

- Country Advisors mobilized
- Bidding Consultants selected/appointed
- Implementation Structure finalized
- Engaging prospective financiers by the countries
- Engaging prospective bidders.
- ESIA and Community benefit Sharing plans finalized and disclosed
- Commercial documents drafted and agreed

- Bidding Process Initiated
- Bids Received
- All commercial documents discussed and approved.

- Commercial Agreements (PPA, Transit) signed
- Contract signed with Developer and Operator
- Operator Identified
- Loan/ Credit Agreements signed with Financiers
- Account Bank Agreement drafted and bank Identified.
- Project Implementation unit established

Project building blocks

A. Countries ownership and readiness

- Dedicated Working Group headed by Deputy Minister level meets every month;
- Ministerial Inter Governmental Council (IGC) undertakes high level decisions;
- Full-time IGC Secretariat ED and international advisors in place

B. Project structuring and legal framework

- Project Structure is agreed;
- Commercial framework designed;
- The Model Power Purchase Agreement (PPA) drafted;

C. Project financing

- World Bank with IDB and Gulf Coordination Group (GCG) indicated their willingness to finance.
- Other potential co-financiers include KfW of Germany, Asian Development Bank, JICA of Japan, DFID of UK, and Russia

D. Preparatory studies and assessments

- Project Feasibility Study completed
- Environment and Social Assessment and Avian Risk management study for the project completed
- Community Benefit sharing studies ongoing
- Security Risk Assessment and Mitigation Plan completed
- Development of open access rules ongoing

Project Structure

- **Two Main Options considered for Project Structure**
 - Option A: Contractual Joint Venture
 - Option B: Corporate Joint Venture
- **Countries preferred the Option A**

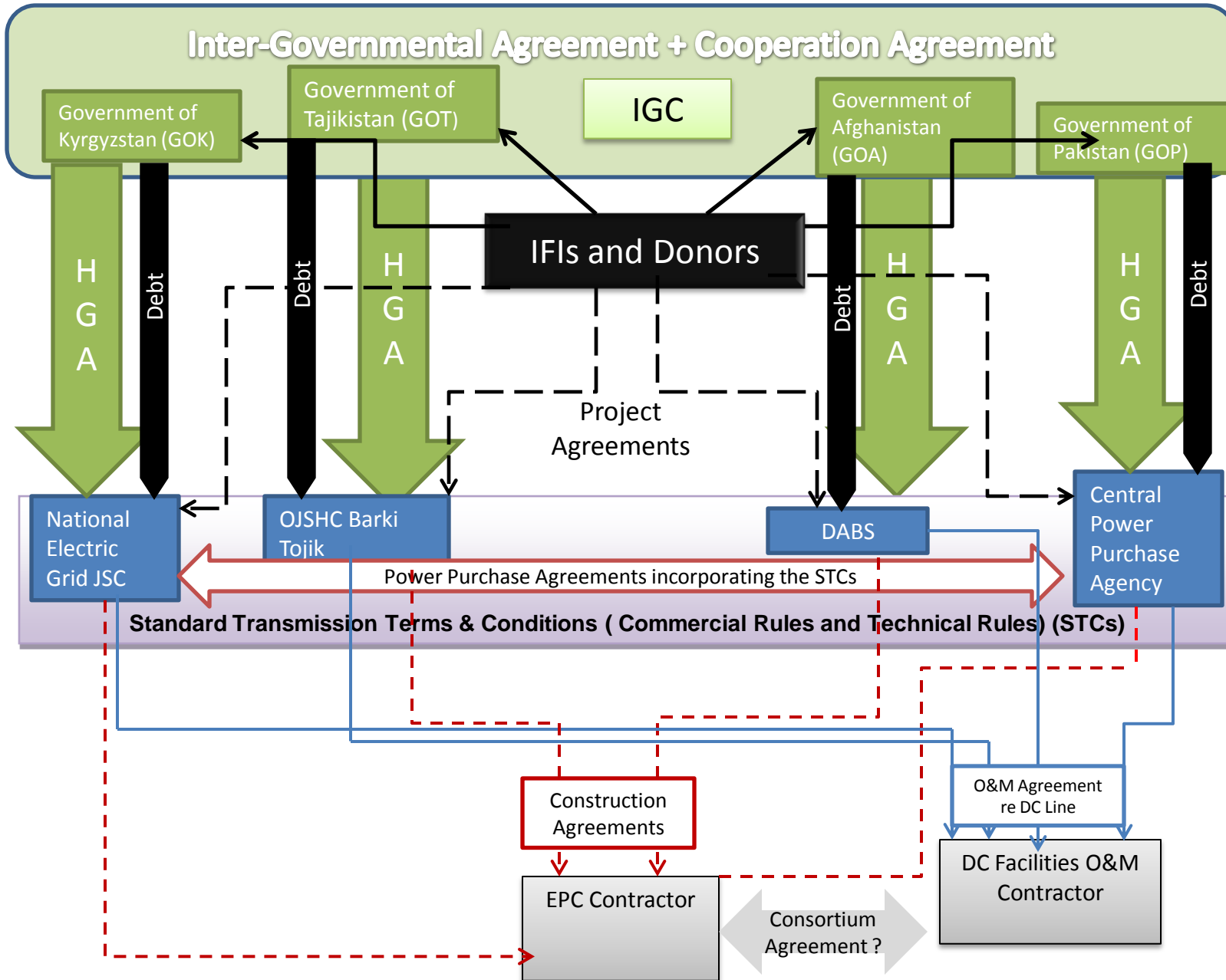


Figure 1: Option A- The Contractual Joint Venture

Core Project Agreements

- 4 core PPAs assumed to be of 15 years (KR-AF, KR- Pk, TJ-AF and TJ-PK bilateral Agreements)
- One PPA between AFG-PAK
- Master Agreement (binding all the parties) :
 - Standard terms and conditions for PPAs
 - Framework for O&M, capacity allocation, Open Access, policy risk mitigation
 - Costs and Risks Allocation Principles
- **Coordination Agreement:** Technical and commercial aspects of wheeling of power between KR and TJ
- Technical Code for operational requirements
- Account Bank Agreement for security of payments following the “Payment Waterfall”
- Host Government Agreements reflecting reciprocate obligations of Governments

Security and Benefit-Sharing

Special measures planned to reduce security risks

- Security Risk Assessment was conducted in the 4 countries with special focus on Afghanistan and Pakistan
 - Identified mitigation measures
 - Estimated scale and cost of security regimes
 - Identifies high risk profile of project, especially during construction (most workers, material and equipment)
 - Limited security capacity of local/central states
 - NATO withdrawal late 2014
- Provision of Emergency Restoration systems
- Community development and benefit-sharing program to build ownership of communities on the right of way of line:
 - During construction and operation phases

Key Next steps for bringing Project to Ground

- **Finalizing Commercial Agreements**
- **Financial closure –Central Asian countries would need special attention.**
- **Selecting a competent developer and operator.**

CASA → 1000

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ABOUT CASA-1000

PARTICIPATING COUNTRIES

DOCUMENTS & REPORTS

IGC

CASAREM

COMMUNITY BENEFITS



Students in Tajikistan.

This project demonstrates landmark cooperation between the Kyrgyz Republic, Tajikistan, Pakistan, and Afghanistan.

Map of the CASA-1000 Vision

click to enlarge



Electricity. It's essential for modern life. Without it, development is delayed and poverty endures.

The Kyrgyz Republic and Tajikistan are two countries in Central Asia endowed with some of the world's most abundant clean hydropower resources with water cascading from the mountain ranges and filling the rivers every summer. Both of these countries have a surplus of electricity during the summer. Nearby in South Asia, Afghanistan and Pakistan are suffering from little or no electricity while trying to keep pace with a fast-growing demand for it. Pakistan cannot meet its' citizens' electricity needs, especially during the sweltering summer months, leading to frequent power cuts and millions of people living without electricity.

A new electricity transmission system to connect all four countries, called CASA-1000, would help make the most efficient use of clean hydropower resources in the Central Asian countries by enabling them to transfer and sell their electricity surplus during the summer months to the deficient countries in South Asia. The CASA-1000 project would also complement the countries' efforts to improve electricity access, integrate and expand markets to increase trade, and find sustainable solutions to water resources management.

What's New

May 16-17, 2012: Inter-Governmental Council (IGC) meeting in Dubai, UAE. All four country delegations led by Ministers and Deputies participated in the deliberation and took key decisions on advancement of project preparation, which were documented and signed by all.

April 12-13, 2012: Fifth Meeting of the CASA-1000 Working Groups (now called the "Joint Working Group") took place in Almaty, Kazakhstan. All four country teams were represented together with development partners who are assisting with preparing the project. The meeting deliberated on the structure of the Project and its mode of implementation, as well as the role of the IGC Secretariat. A short list of candidates for the selection of the Executive Director of the IGC Secretariat was prepared from a pool of 63 applicants.