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Maintaining future electricity supply reliability in the period of transition of five to ten years

Outline for a Roadmap for a Regionally Interconnected Energy System in Central Asia

Note by the secretariat

Summary

Integration, coordination, and enhancement of energy infrastructure, resources, and markets across Central Asia are pivotal for bolstering energy security and system resilience. The region, rich in natural resources and with big potential for renewable energy, still remains reliant on fossil fuels like coal and natural gas. Diversifying energy sources by investing in renewables is critical to alleviate future pressures on fossil fuel reserves and mitigate environmental impacts.

Despite the existing interconnected energy systems from the Soviet period, the current infrastructure in Central Asia is not equipped to handle the integration of large-scale renewable energy capacities and real-time power trading. Significant investments are needed to upgrade power lines and establish a unified system capable of accommodating varied energy sources, reducing transmission losses, and preventing regional blackouts. Effective regional coordination could capitalize on shared resources and optimize the potential for renewable energy, ensuring a stable and reliable regional power grid.

International organizations and financial institutions can play a crucial role in supporting Central Asia's move towards enhanced energy connectivity. Various agencies have been involved in initiatives to improve regional energy infrastructures and market conditions. The United Nations Economic Commission for Europe (ECE) is working on several projects to enhance energy connectivity in Central Asia. These projects include developing roadmap and scenarios for interconnected energy systems, fostering multi-stakeholder partnerships, and providing tools to achieve carbon neutrality and resilience in energy systems. The expertise aims to support Central Asian countries in optimizing their energy resources, and enhancing regional cooperation in the energy sector.

I. Introduction

1. Enhancing regional energy connectivity, integration and coordination of energy infrastructure, resources, and markets across regions, is critical to strengthening energy security and energy system resilience in Central Asia. An integrated and interconnected energy system, that encompasses both the electricity and gas grids, and which is also compatible for the transport and trade of low-carbon hydrogen, can help create a more reliable, affordable and sustainable energy supply. Additionally, energy interconnectivity allows for deep decarbonization as well as more effective integration of scaled renewable energy capacity into the energy system.

2. Central Asia is a diverse region rich in natural resources and with vast potential to develop large scale renewable energy projects. However, despite a positive trend and increasing renewable energy capacity, the region still heavily depends on fossil fuels. Coal and natural gas still dominate the regional electricity generation mix and will continue meeting increasing regional energy demand for the foreseeable future. Nevertheless, the forecasted increase in regional electricity demand presents a significant challenge to the region, particularly in light of the strain it places on fossil fuel reserves.

3. Uzbekistan's significant dependence on gas, accounting for 88 per cent of electricity production, and for 86 per cent of total energy supply in 2021,[1] underscores the urgency for diversification. This is especially the case given that Uzbek natural gas reserves are predicted to be depleted before 2040.[2] Investing in renewable energy sources can therefore provide a sustainable solution to bolster energy security by alleviating natural gas demand whilst also mitigating the environmental impact associated with fossil fuel consumption.

4 In Kazakhstan, coal constitutes the most significant energy source accounting for 49 per cent of total energy supply and 59 per cent of total electricity generation in 2021.[3] Consequently, given Kazakhstan’s ambitious nationally determined contribution aiming to achieve a 25 per cent reduction in greenhouse gas emissions by 2030 and carbon neutrality by 2060, the Kazakh government aims to reduce coal-based power and heat generation by 50 per cent by 2030.[4] [5] Nevertheless, electricity demand is expected to increase by roughly 75 per cent by 2035, meaning that alternative energy sources, notably renewables, must be scaled up to fill the gap.[6] Thus, by effectively scaling renewable energy the region can not only meet its growing energy needs but also reduce its dependence on carbon intensive fossil fuel resources.

5. Kyrgyzstan and Tajikistan have a significant, still vastly untapped, potential of hydropower resources amounting to 158 and 527 TWh of annual electricity production, respectively.[7] Sustainable long-term management of these water resources is not only a prerequisite for domestic electricity supply but can also be a source of green energy in Uzbekistan and Turkmenistan, as well as across South Asia.

6. Kazakhstan’s rich domestic natural resources, such as its vast uranium reserves, the second largest in the world, and uninhabitable land that provides space for large scale wind

[1] IEA, 2021. International Energy Agency Countries & Regions: Uzbekistan. Available at: https://www.iea.org/countries/uzbekistan

[2] bp, 2022. bp Statistical Review 71st Edition, London: bp.

[3] IEA, 2021. International Energy Agency Countries & Regions: Kazakhstan. Available at: https://www.iea.org/countries/kazakhstan

[4] Kazenergy, 2023. The National Energy Report 2023, Astana: Kazenergy.

[5] IEA, 2022. Kazakhstan 2022 Energy Sector Review, Paris: International Energy Agency.

[6] UNECE, 2023. Sustainable Hydrogen Production Pathways in Eastern Europe, the Caucasus and Central Asia, Geneva: United Nations Publications.

[7] UNECE, 2023. Sustainable Hydrogen Production Pathways in Eastern Europe, the Caucasus and Central Asia, Geneva: United Nations Publications.

and solar power projects could make the country a green and low carbon energy powerhouse and drive the regional energy transition.[8] [9]

7. Uzbekistan is also endowed with significant uranium reserves, the thirteenth largest in the world, which is planned to be leveraged to build a 2.4 GW nuclear power plant.[10] Additionally, Uzbekistan has approved the construction of 10 solar power plants with a capacity totalling 2.0 GW and have taken preliminary steps to develop an additional 1.0GW of wind power capacity.[11]

8. In addition to Turkmenistan's extensive gas resources, amounting to over 7.2 per cent of global proven reserves, which if coupled with carbon capture use and storage (CCUS) can provide low carbon baseload electricity to the region, Turkmenistan's climatic conditions also favor the production of solar power.[12] [13] It is estimated that Turkmenistan's solar potential amounts to 4.4KWh/m, meaning that it would require 0.025 per cent of the country's territory to supply the nation's current electricity demand.[14]

II. Energy Connectivity and Energy Security in Central Asia

9. The regional energy system in Central Asia is connected and largely a legacy of Soviet time planning. However, despite the existing infrastructure, the current system is not ready for integration of large-scale renewable energy capacity and real-time power trading. The average electricity transmission losses for the region amount to 12.8 per cent, and inter regional blackouts, such as those of 2022 where a system malfunction induced a blackout in the southern Kazakhstan consequently leading to power outages in Kyrgyzstan and Uzbekistan, have threatened regional energy security. Consequently, in order to enhance the reliability of the regional electricity grids, significant investments are required to refurbish existing power lines and install new high-voltage power lines capable of enabling multilateral regional power trading and significant influxes of variable renewable energy.

10. In addition, the countries in the region are prone to developing their national energy strategies in isolation of each other, despite their energy systems already operating bilaterally with each other. This is problematic as not only do their strategies fail to consider current mutual interdependencies shaping energy discourse, especially in the case of hydropower, where water resources are shared between Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan, but also because their strategies can fail to consider the economic and environmental benefits associated with regional energy cooperation and integration.

11. Enabling an integrated energy system capable of multilateral real time power trading would therefore grant each Central Asian nation access to a wider variety of renewable and low carbon energy sources, that, if operating in isolation of each other, they would not have access to. This is extremely beneficial to the region's energy security and decarbonization efforts, not only because it would maximize the consumption of renewable energy, but it would also enable regions facing power shortages or disruptions to receive power in real time from regions with power surpluses. Thus, Central Asia's power system will benefit from increased flexibility and redundancy planning which, in turn, will translate to a more stable and reliable power grid.

[8] IAEA, 2021. Country Nuclear Power Profiles: Kazakhstan. [Online] Available at: https://www-pub.iaea.org/mtcd/publications/pdf/cnpp-2021/countryprofiles/kazakhstan/Kazakhstan.htm

[9] IEA, 2022. Kazakhstan 2022 Energy Sector Review, Paris: International Energy Agency.

[10] IEA, 2022. Uzbekistan 2022 Energy Policy Overview, Paris: International Energy Agency.

[11] UNECE, 2023. Sustainable Hydrogen Production Pathways in Eastern Europe, the Caucasus and Central Asia, Geneva: United Nations Publications.

[12] bp, 2022. bp Statistical Review 71st Edition, London: bp.

[13] UNECE, 2023. Sustainable Hydrogen Production Pathways in Eastern Europe, the Caucasus and Central Asia, Geneva: United Nations Publications.

[14] UNECE, 2023. Sustainable Hydrogen Production Pathways in Eastern Europe, the Caucasus and Central Asia, Geneva: United Nations Publications.

12. A unified power system would also lighten the implications to energy security associated to the intermittent nature of renewable energy, such as wind and solar power by providing scalable baseload low-carbon power, to the Central Asian region. Turkmenistan and Kazakhstan's extensive gas resources, if coupled with effective CCUS systems can provide flexible low-carbon baseload power. Kazakhstan and Uzbekistan's uranium resources can soon be leveraged to produce nuclear energy and, if their respective nuclear energy economy develops, will be capable of providing baseload nuclear power to the region in the future. Plans to substantial scale up hydropower capacity in Tajikistan and Kyrgyzstan by 2030, would enable Tajikistan and Kyrgyzstan to provide large quantities of baseload hydropower to the region. An integrated power system would thus align each country's water management strategies, balancing national irrigation needs while maximizing hydropower output.

13. Moreover, an interconnected Central Asian power system would facilitate the integration of electricity markets in the region. A common integrated power market would, consequently, enable efficient resource allocation and promote market competition which is currently lacking due to the monopolistic structure of Central Asia's power sectors. In the long run, market integration can lead to lower electricity tariffs for end consumers and boost efficiency in power production, transmission and distribution.

14. Achieving regional energy connectivity can henceforth enhance the availability and affordability of low-carbon energy and accelerate the utilization of renewable energy over time. Interconnectivity enhances economies of scale of large green infrastructure projects, translated into lower overall system investment and operating costs. Furthermore, greater energy connectivity allows for improved resource planning, energy pooling and resource diversification. Consequently, interconnectivity enhances energy security by connecting countries or sub-regions facing energy deficits to markets with surpluses of energy. It is also expected that interconnectivity will positively contribute to the Central Asian economies, generating new jobs and improving gender parity.

III. Regional Developments by International Agencies and Institutions

15. As a result of the promising outcomes associated with regional energy interconnectivity, the international development agencies and financial institutions have begun directing significant attention and resources towards enabling energy interconnectivity in Central Asia.

16. The US Agency for International Development (USAID) has focused on efforts for facilitating the development of a regional Central Asian power market by developing a regional electricity market model aimed at harmonizing technical and market frameworks.

17. The World Bank has focused on developing a pilot regional electricity market to illustrate the possible dynamics of a regional electricity market. Additionally, the World Bank has worked on strengthening the enabling environment and institutional capacity of Central Asian countries by strengthening the financial viability and governance of national power sectors and reinforcing regulatory authorities.

18. The Asian Development Bank's (ADB) activities in Central Asia have predominantly revolved around financing electricity and gas grid expansion, modernization and, in the case of Tajikistan, reconnection to the Central Asian Power System. The ADB's Central Asia Regional Economic Cooperation (CAREC) program aims to improve regional energy connectivity, scale-up investments and achieve higher sustainability and inclusiveness in Central Asia. The ADB plans to do so by producing preparatory works for the establishment of a new regional transmission cooperation association, strengthening government capacity to devise market reforms and attract investors, establishing a financing vehicle for green energy and energy efficiency projects.

19. The focus of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) regarding energy and energy connectivity in Central Asia, despite being at the project-initiation stage, is aimed at strengthening framework conditions for regional and national

integration of renewable energy and energy efficiency in cooperation with political decision makers, electricity grid operators and other government stakeholders.

20. The Asian Infrastructure Investment Bank (AIIB) currently operates in Central Asia by providing finance for renewable energy generation projects as well as finance for hydropower facility refurbishments. The AIIB has set a target for cross-border connectivity projects, that connect vital infrastructure and economies across and between Asia, to represent 25-30 per cent of all financing approvals. Consequently, there is an opportunity for the AIIB to be involved in establishing multilateral real time power trading within a unified Central Asian power system.

21. The European Bank for Reconstruction and Development (EBRD) has significantly focused on improving energy security in Central Asia by providing finance, notably loans and bonds, aimed at refurbishing existing power stations, such as hydropower plants, as well as expanding and refurbishing national transmission and distribution lines. The EBRD has also significantly focused on scaling investments for renewable energy production by providing finance towards the adoption of renewable energy technologies. Regarding th cross regional power trade, the EBRD has provided financing for high-voltage transmission infrastructure in 2015 to enable the trade of summertime electricity surpluses in Tajikistan and Kyrgyzstan.

IV. ECE Contribution to Enhance Energy Connectivity in Central Asia

22. The United Nations Economic Commission for Europe (ECE) joined forces with the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) to implement several projects on enhanced energy connectivity across the Central Asian region. The main activities include:

(a) development of scenarios and a roadmap for a regionally interconnected energy system in Central Asia;

(b) development of a subregional roadmap to inform multilateral power trading linked to sustainable cross-border trade of renewable energy resources;

(c) development of tools and fostering multi-stakeholder partnerships for a resilient and interconnected power systems.

23. To support these activities, ECE has consequently developed a range of tools capable of supporting stakeholder initiatives regarding energy interconnectivity, attaining carbon neutrality and strengthening energy system resilience. ECE's Carbon Neutrality Toolkit can inform policy makers regarding the plethora of solutions available to attain carbon neutrality, support countries' efforts to reach carbon neutrality and attract investment into clean infrastructure projects, and also build capacity in economies across the ECE region to achieve common goals.

24. ECE's Framework on Resilient Energy Systems can guide ECE member States to implement policies aiming to enhance energy system resilience. It helps the member States to identify opportunities and better understand the possible trade-offs and synergies between delivering on (i) energy security, (ii) energy affordability and (iii) environmental sustainability.

25. In addition, ESCAP's Roadmap on Energy Connectivity in Central Asia can provide member States with a framework aimed at transitioning to a more interconnected electricity grid that offers a more reliable, affordable and sustainable electricity supply. This would underpin the region's social and economic development and assist the member States to transition to more efficient, flexible, economical and lower greenhouse gas emissions energy systems.

26. ECE and ESCAP, therefore leverage their extensive expertise on the energy transition and can play a pivotal role in helping Central Asia foster energy interconnectivity.

27. Partnering with the Stockholm Environment Institute, ECE has devised a tool to simulate three distinct energy interconnectivity scenarios across Central Asia. These scenarios represent different degrees of multilateral energy trade and integration. As a result, each scenario forecasts the energy system dynamics associated to it, aiming to showcase the most optimal choice. Additionally, the model delineates the necessary pathways and technology choices, as well as the investments required to facilitate energy connectivity in the region, along with the expected energy system dynamics. This modelling activity is intended to provide the regional stakeholders with insight into the costs and benefits associated with enhanced energy connectivity in the Central Asian region and its implications towards energy security and national as well as regional energy objectives.

28. ECE can facilitate dialogue between member States by initiating efforts to build trust and political consensus among key stakeholders, including governments, energy producers, transmission and distribution companies, regulators and investors. By convening these stakeholders at the table, ECE can facilitate dialogue and collaboration towards a common vision for regional energy cooperation. Together, they can work towards developing a comprehensive regionally connected energy grid master plan that outlines the infrastructure and respective polies and regulations needed to integrate and optimize the region's energy resources.

29. Moreover, ECE can provide capacity building through its network of experts on energy system resilience and energy interconnectivity, equipping stakeholders with the necessary skills and knowledge to implement the master plan effectively. ECE can also provide insights from the established interconnectivity projects, imparting valuable lessons learned and best practices for the successful implementation of energy interconnectivity initiatives across the Central Asian region, which can be replicated and scaled for broader impact.

V. Elements to Shape the Roadmap on Energy Connectivity – A Multidimensional Approach

30. The integration and coordination of energy infrastructure, resources and markets across the Central Asian region requires a multidimensional approach which integrates and aligns technical, political, organisational and financial considerations. By proactively aligning these multi-faceted elements through sustained stakeholder engagement, Central Asian nations can create an enabling environment for regional energy integration. This holistic approach is important for realizing the economic, environmental and energy security benefits associated to regional cross-border energy cooperation.

31. A successful regional strategy aiming to enhance regional energy connectivity should include the following elements:

(a) Technical Considerations:

(i) Research, analysis and interconnectivity scenarios;

(ii) Technical preparations (feasibility studies for proposed projects, project management plan-timeline, milestones, risk management);

(iii) Capacity building (training programs for technical personnel and stakeholders, sharing information and best practices among countries, R&D and innovation on technologies).

(b) Political Considerations:

(i) Assessment of stakeholder engagement (government, private sector, international organizations);

(ii) Current activities and initiatives in this area (by governments, international organizations, other stakeholders).

(c) Financial Considerations:

(i) Financial planning (cost estimation, funding sources, impact analysis).

(d) Organizational Considerations:

(i) Harmonization of policies and regulatory framework across the region (energy regulations and standards, incentives for investment, cross-border agreements);

(ii) Implementation and monitoring framework (various tools for implementation - data analytics, mapping tools, GIS, modelling software, etc).

A. Technical Considerations:

32. A detailed assessment of the existing energy infrastructure across Central Asia is crucial, with a particular focus on the unified Central Asian Power System (CAPS). ECE's report on Energy Connectivity in Central Asia showcases an inventory of existing national energy systems. It includes a map and an evaluation of the current energy system dynamics, such as power generation, consumption and trade, as well as the state of power generation assets, such as hydropower, fossil fuel resources including gas and coal, and other renewable energy technologies. Additionally, this report also expansively illustrates the existing and planned transmission and distribution networks, interconnections and grid operations within each country in the region. This assessment consequently highlights the infrastructure bottlenecks, constraints and investment needs for power system modernization, expansion and regional integration.

33. Technical infrastructure and systems-dynamics assessments, such as ECE's report on Energy Connectivity in Central Asia, can be capitalized upon to conduct models illustrating interconnectivity scenarios to evaluate different pathways for enhancing regional energy connectivity. ECE, in collaboration with the Stockholm Environment Institute, has developed such a model and presented its preliminary findings to the stakeholders during the Regional Stakeholder Consultations on the 12-13 of June 2024, in Astana, Kazakhstan. The model is capable of forecasting future electricity dynamics such as supply and demand trends, required transmission expansion and optimal generation mixes for different extents of regional integration and connectivity. The model also highlights the benefits and costs of integrated regional operations like economic dispatch and reserve sharing. Furthermore, such an exercise allows stakeholders to gain insight on the impacts of scaling up renewable energy sources on grid integration requirements.

34. Implementing a regional connectivity strategy will require significant capacity building to ensure that the required technical expertise is available. Stakeholders will require training programs on subjects such as advanced grid planning, systems operations and renewable energy integration, amongst others. Consequently, international organizations involved can enable the sharing of knowledge regarding the best practices for regional interconnectivity as well as the standards and protocols which will be required. This can be done through the creation of regional knowledge hubs and centers of excellence regarding energy connectivity. With the help of such bodies, institutional capacity must be built for regional coordination bodies such as CDC "Energia", the coordinating dispatch centre of the Central Asian power System.

35. By combining a rigorous assessment of existing infrastructure, detailed technical studies to chart an evidence-based roadmap, and capacity building initiatives, Central Asian countries can develop a comprehensive regional strategy underpinned by strong technical foundations. This will enable the optimized investments and coordinated operations to realize the full benefits of enhanced energy connectivity. Stakeholder engagement, open communication and information sharing is imperative for the entire duration of this process as national and regional energy developments, policies and dynamics must be incorporated into technical considerations.

B. Political Considerations:

36. Developing a successful regional strategy to enhance energy connectivity in Central Asia requires addressing key political considerations alongside the technical aspects. Indeed, technical capacity cannot be developed without stakeholder engagement, collaboration and mutual trust. Political commitment provides an enabling environment for countries to collaborate on the technical aspects of grid integration and energy trade.

37. The Stakeholder Consultations on the 12-13 June 2024, served a vital role not just for gathering input for ECE's scenario modelling exercise, but also for fostering alignment and a shared vision among diverse stakeholders regarding regional energy interconnectivity initiatives.

38. The current state of the Central Asian Power System (CAPS) enables only limited energy connectivity and electricity trade between Kazakhstan, Uzbekistan and Kyrgyzstan. However, efforts are underway for Tajikistan and Turkmenistan to rejoin and reconnect their national power systems to the CAPS, which would significantly enhance regional energy integration.

39. International agencies have been working on a plethora of projects aimed at enhancing energy connectivity in Central Asia and can therefore leverage their expertise to guide other national stakeholders during the process. Section 3 of this document provides an overview of projects targeting energy and energy connectivity in Central Asia.

C. Financial Considerations:

40. Financial considerations are critical enablers for catalysing energy interconnectivity and regional integration in Central Asia. Insufficient financial resources or misaligned fiscal policies like energy pricing can disincentivize the political prioritization of regional connectivity projects. However, innovative financing models that improve project economics can incentivize greater political buy-in from the governments.

41. Comprehensive cost estimation studies will be required to estimate the capital, operational and lifecycle costs for proposed interconnectivity projects such as cross-border transmission line expansion, grid refurbishments as well as maintenance and replacement. Costs should also be assessed not solely for physical infrastructure but also for institutional strengthening, capacity building, and regulatory harmonization.

42. Financing can be mobilized through diverse streams, including national budgets but also financial institutions such as development banks, public-private partnership and, in the case of bankable projects, private financers. Institutional frameworks are required to mobilize such financing. Concessional lending from development partners can improve project bankability and attract private capital. Consequently, international development agencies and financial institutions can provide technical capacity building to reform existing regulatory financial structures and enable further financing. Currently, development banks such as the Asian Development bank have significantly invested in energy connectivity, providing financing and technical assistance to Central Asia under the CAREC program.

43. Cost-benefits analyses must quantify the financial impacts from energy trade, optimized resource allocation, reduced technical losses and all factors of interconnectivity. These should also evaluate the distributional impacts across all stakeholder groups to be able to assess equitable risk allocation. Financial modelling can evaluate different pricing/tariff scenarios and revenue streams to ensure cost recovery.

44. Stakeholders should also incorporate comprehensive risk assessments which cover technical, commercial, political and foreign exchange risk. Risk mitigation tools including guarantees, insurance and legal frameworks for investor protection are required in this case.

D. Organizational Considerations:

45. Weak institutional capacity and fragmented regulatory frameworks hinder effective technical coordination on issues like cross-border power trading and grid operations. On the other hand, strengthening regional institutions through capacity building initiatives enables harmonization of technical standards and practices. Additionally, limited institutional mechanisms for joint investment planning and risk mitigation tools increase financial risks, deterring capital for connectivity infrastructure. Establishing strong governance frameworks and investment protection provisions can help mobilize financing from diverse sources.

46. Policy and regulatory framework harmonization is crucial towards enabling energy interconnectivity across Central Asia. Stakeholders should come together and align national energy policies, strategies, regulations, regulatory market dynamics, pricing mechanisms and technical standards.

47. Strengthening regional institutions in Central Asia and knowledge sharing platforms will enable coordinated policymaking, operations monitoring and progress tracking towards connectivity goals.

48. Overall, these technical, political, financial and organizational considerations for regional energy connectivity are intricately coupled. Siloed approaches focusing solely on one dimension will face barriers from deficiencies in the other areas. An integrated strategy that proactively aligns all four elements in a coherent manner is important for overcoming barriers and realizing the full benefits of enhanced cross-border energy cooperation. This multi-dimensional approach would provide the comprehensive enabling environment for regional connectivity in Central Asia to take root and thrive.

Annex

Energy Interconnectivity Project Matrix in Central Asia

UNECE-ESCAP Program:

ESCAP Project:	**UNECE Project:**	**UNECE-ESCAP Project:**
Road map for multilateral power trade and developing renewable energy resources linked to cross-border trading of electricity.	Roadmap for a regionally interconnected energy system in Central Asia	Cross-border or subregional interconnection and scaled renewable energy projects of common interest.

Index:

Blue: Synergies with ESCAP **Green**: Synergies with UNECE **Orange:** Synergies with ESCAP and UNECE

Possible Synergies with Initiatives by International Development Organisations:

USAID:
- Regional Power Market
- Central Asia Energy Utility Partnership

GIZ:
- Strengthen frameworks for regional and national RE and EE integration

EBRD:
- Financing of power plant and transmission infrastructure refurbishments and expansion
- Investments aimed at scaling renewable energy technology
- Investments aimed at expanding electricity trade in Tajikistan and Kyrgyzstan

ADB:
- Energy Interconnectivity and Regional Power Market
- Increasing Cross-Border Energy Trading within the Central Asian Power System
- Fostering Expanded Regional Electricity and Gas Interconnection and Trade under CAREC 2030 strategy
- Financing for TAPI pipeline
- Financing for grid expansion, modernization and, in the case of Tajikistan, reconnection to the Central Asian Power System (CAPS) in CA countries

World Bank:
- Regional Electricity Market, Interconnectivity and Trade:
  - Reinforcement and digitalization of regional interconnections
  - Strengthening enabling environment and institutional capacity
  - Facilitate enhanced electricity trade and connectivity as part of the clean energy transition in Central Asia.
- Water-Energy Nexus

EU SECCA:
- Promote a Sustainable Energy Mix
- Provide for strengthened and more inclusive policy, regulatory and institutional frameworks for the transition to a sustainable energy system

AIIB:
- Financing new renewable energy power plants in the region
- Financing hydropower facility refurbishments