

The Effects of the Crisis in Afghanistan on Central Asia's Energy Sector

A Risk Assessment

Central Asia's energy security is closely intertwined with Afghanistan, which relies heavily on imported power. Central Asia contributes a remarkable 85 per cent of these imports, amounting to 4.4 billion kWh in 2022 and attesting to its significance for Afghanistan's energy needs. Afghanistan's oil and natural gas production is negligible, while coal is mainly exported due to the lack of domestic thermal power facilities and the government's reliance on customs duties for revenue. Domestic generation capacity consists mainly of hydropower plants with some thermal plants, small diesel generators, and limited solar capacity.

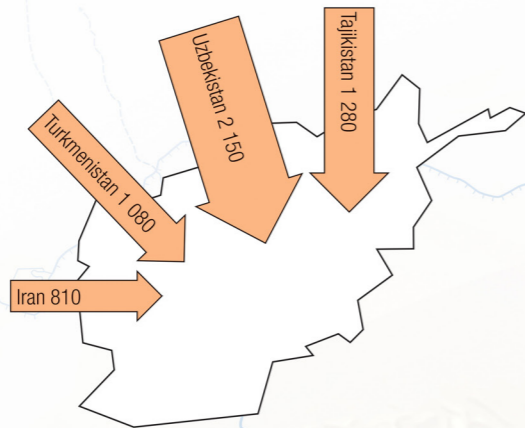
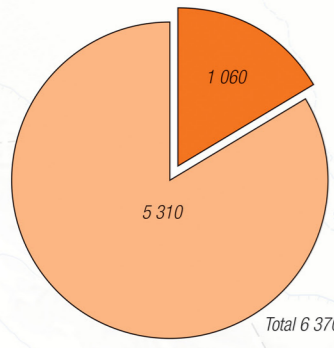
For Central Asian states, power exports to Afghanistan remain financially beneficial due to the higher prices, but prospects for boosting export revenues and diversifying energy trade depend on the development of regional energy projects with Afghanistan.

Afghanistan is positioned as a potential transit hub, connecting Central Asia with South Asia, a region experiencing surging energy demand. Key regional initiatives include the Turkmenistan-Uzbekistan-Tajikistan-Afghanistan-Pakistan (TUTAP) and the Turkmenistan-Afghanistan-Pakistan (TAP) power interconnections, the Central Asia-South Asia power transmission line (CASA-1000), and the Turkmenistan-Afghanistan-Pakistan-India (TAPI) gas pipeline. Most infrastructure has been completed on the Central Asian side.

Construction on Afghan territory, however, has been largely suspended due to the withdrawal of international donors, with limited work resuming in recent months. Security risks to energy infrastructure persist, with some episodes of attacks reported after 2021. Energy poverty is still widespread in the country, with over two-thirds of the Afghans lacking grid access. Frequent blackouts disproportionately affect women, increasing their exposure to heating- and cooking-related pollution at home.



In the long run, the aspirations of Central Asian countries to expand trade with Afghanistan and South Asia can boost income, promote cross-border infrastructure, and contribute to economic ties. The potential for renewable energy development – both small and large scale – could further increase energy security. But in the long term, Central Asia may face climate-driven energy disruptions due to extreme weather, aging infrastructure, rising demand, and seasonal weather, water, and power fluctuations, all of which could impact energy trade.



Electricity generation and import in 2021, GWh

- Domestic generation
- Imports

Afghanistan's electricity imports by country in 2021, GWh

TURKMENISTAN

UZBEKISTAN

TAJIKISTAN

IRAN

PAKISTAN

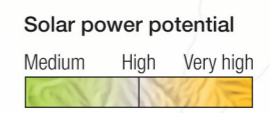
INDIA

Afghanistan's energy system

- Power plants**
- Hydro
 - Thermal, diesel
 - Thermal, other
 - Solar
- More than 100 MW installed capacity
10-100 MW
Less than 10 MW

- Electric power transmission lines**
- Existing, electric potential in kV
 - Planned, electric potential in kV

- Oil and gas**
- Planned gas pipeline
 - Oil or gas production
 - Coal mining



- Other elements**
- State borders
 - River
 - Seasonal river and inland delta
 - Canal

- CASA-1000 Central Asia-South Asia power project
TAP Turkmenistan-Afghanistan-Pakistan electricity transmission line
TAPI Turkmenistan-Afghanistan-Pakistan-India gas pipeline
TUTAP Turkmenistan-Uzbekistan-Tajikistan-Afghanistan-Pakistan transmission line



Map produced by Zoi Environment Network, March 2024

Sources: OSCE; World Bank; Global Solar Atlas; Global Energy Monitor



[Read the full report](#)

The OSCE is implementing a project to identify key risks and developments in Central Asia's energy sector following the regime change in Afghanistan. At a June 2023 regional workshop organized by the OSCE in Ashgabat on energy co-operation and natural resource management in Central Asia in the context of the Afghan crisis, energy stakeholders from Tajikistan, Turkmenistan, and Uzbekistan – the three main power exporters to Afghanistan – agreed to a roadmap for co-operation.

The roadmap involves an in-depth analysis of the Afghan energy crisis and its effects on Central Asia. This factsheet presents selected information from the report, which identifies the main challenges facing Afghanistan's energy sector today and the related risks to energy trade with Central Asia. The report also examines the evolution of energy relations between Afghanistan and Tajikistan, Turkmenistan, and Uzbekistan, assesses the feasibility of regional energy projects, and offers policy recommendations to enhance regional energy security.

Recommendations



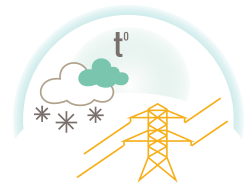
1. **Foster Afghan and Central Asian energy expertise and information exchange** to promote a deeper understanding of the evolving regional energy landscape.

2. **Develop a community of regional energy specialists** to encourage dialogue for decision-making, strategic planning, and readiness for cross-border disruptions. Targeted training and capacity-building could strengthen technical competencies and policy-making skills



3. **Mitigate risks and address vulnerabilities in energy infrastructure.** Early warning systems for energy security and mapping could help Central Asian states identify vulnerabilities in energy trade with Afghanistan and prevent the potential economic and humanitarian consequences of infrastructure failures.

4. **Consider water, climate, and environment in regional energy collaboration.** Reliable seasonal weather and water forecasts can aid hydropower and irrigation planning, improve water and energy demand projections, and help prepare for crisis situations



5. **Promote energy connectivity, particularly in border areas.** Increasing regional energy co-operation can reduce trade risks and benefit border communities. Regional stakeholders can support the development of connectivity and enhance energy access infrastructure on both sides of the border.

6. **Elevate people-centred energy concerns on the regional and international agendas.** Energy access, particularly for women, is vital for overall well-being. Policymakers need to address energy poverty, infrastructure vulnerability, supply disruptions, and the impacts of widespread blackouts.

