

POWER SECTOR OF CENTRAL ASIA: MODERNIZATION AND ENERGY TRANSITION

KEY FINDINGS

ANALYTICAL REPORT 26

THE GLOBAL ENERGY SECTOR IS UNDERGOING ITS MOST SIGNIFICANT TRANSFORMATION SINCE THE INDUSTRIAL REVOLUTION

Share of renewable energy in global generation in 1H 2025

34.3%

(exceeding coal's share of 33.2% for the first time)

New challenges for the global energy sector

- Integration of hundreds of GW of variable renewable energy sources
- Electrification of industries (30% of the energy balance by 2040)

20%

today

30%

by 2040

A solution for economic policy



THE ENERGY TRILEMMA

Balance between sustainability, reliability, and affordability of energy

THE REGION FACES GROWING DEMAND, ASSET DEPRECIATION, AND THE NEED FOR DECARBONIZATION AND INTEGRATION OF RENEWABLE ENERGY SOURCES



+40%

Demand growth by 2030 (from 270 to 370 TWh)



up to

70%

Infrastructure degradation

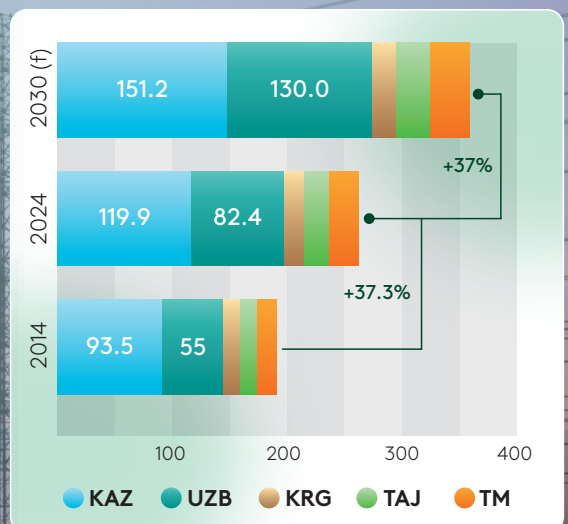


1.4

trillion USD

Investment needed in the region for Net Zero by 2050

Electricity demand in Central Asia by 2030, TWh



THE "MIDDLE" PATH — A BALANCED AND PRAGMATIC APPROACH TO ENERGY TRANSITION

Generation

- Modernization of existing assets
- Flexible generation: CCGT, GTU, BESS, and PSP
- Low-carbon development: nuclear power plants, RE
- Decentralized generation

Grids

- Grid upgrades
- Digitalization: SCADA/EMS
- Smart sensors and meters

Market

- Elimination of cross-subsidies
- Development of ancillary services market
- Transparent rules for grid access and PPAs

Consumption

- Dynamic tariffs
- Energy efficiency in industrial and residential sectors
- 'Smart' load management

Integration

- Joint reserves and coordination of regulation
- Regional electricity market
- Joint network planning
- Seasonal complementarity of generation

Transition

- Staff retraining and job protection
- Diversification of company towns



Eurasian Development Bank

Full version of the analytical report

