Kazakhstan: a gap analysis of climate finance distribution in the energy sector

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Climate Policy Initiative: global climate finance landscape in US$ billion

More than 4000 US$ billion in annual climate finance is required to meet internationally agreed climate objectives by 2030.

Solar PV and onshore wind attracting over 91% of all mitigation investment.
Techno-economic analysis in UNECE region:
Investment needs for all low- and zero-carbon technologies in US$ million

Source: Joint report on multilateral development banks’ climate finance
Kazakhstan pledge to reach carbon neutrality by 2060

Why Kazakhstan?

1. Located within the UNECE region, biggest country in Central Asia
2. Energy intensive
3. Wide portfolio of natural resources in abundance

½ the size of EU
In 2019, 7000 TJ of energy was produced: 99% of total energy mix is fossil fuel, half of that is from coal.

CO₂ intensity of Kazakhstan's GDP is 70% higher than world average - 0.26 tCO₂ per US$1000.

Oil and gas and related sectors accounts for 17% of annual GDP in 2020.

Source: IEA, 2021, Kazakhstan Energy Profile, Kazakhstan energy profile – Analysis - IEA
Kazakhstan has a wide portfolio of natural resources available in abundance

11% of the world’s uranium

Capacity of all hydro resources is ~170 billion kWh per year

Potential of solar energy is 2.5 billion kWh per year

Wind resources at Dzungarian Gate are able to produce 17,000 kWh/m²

35 billion kWh of electricity can be produced annually from biomass waste

An estimated 539 Gt of CO₂ storage resource is potentially available

Data Sources:

- Organization for Economic Cooperation and Development external climate finance database

- Development Bank of Kazakhstan project catalogue

Data mining and data cleaning to select relevant statistics to the energy sector
EBRD is the largest contributor

$1 billion is flowing into renewable energy projects

Generating 900 MW, commensurate with abating 1 MtCO₂ yr⁻¹

Total: $1.38 billion
Energy-related investment is dominantly towards unabated oil and gas (70% of total investment)

Generating non-renewable capacity of ~200 MW of power

Renewable resources capable of generating 745 MW
Conclusions

A highly dichotomous investment pattern can be observed in Kazakhstan: unabated fossil fuel vs renewable resources, including solar, wind, and hydropower

The continued use of fossil fuels will only be aligned with the long-term climate goal if CCUS is integrated

Continue investment to scale up renewable energy generation and encourage technology interplay with other low- and zero-carbon technologies

Develop a policy framework to facilitate large-scale deployment of all low- and zero-carbon technologies

Thank you!
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Now from the IFIs....

ROUND 1
- What technologies are attracting the climate investment from international financing institutions (IFIs)?
- What is the perspective on the continued use of fossil fuel – coal, oil and gas – in some hard-to-abate sectors?
- What is the perspective on CCUS, hydrogen, and nuclear that is currently absent in the IFI’s investment portfolio?
- Are we on track to net-zero: what framework are used to assess IFI’s progress and how rigorous is assessing climate mitigation impact within the finance sector?
- Have the IFIs ever achieved any large transformation of a nation’s energy system such as this in a short time?

ROUND 2
- What are the concerns from IFIs regarding the other cleaner energy technologies (CET), i.e., CCUS, hydrogen, nuclear power?
- What are the barriers – what is gridlocking investments to other CET?

ROUND 3
- What are the enablers - policy framework is required from member states to facilitate the scale up of other CET?
Distribution of energy-related finance from China within the energy sector between 2015 – 2023 in US$ Millions

90% of China’s $6.3 billion investment is towards unabated fossil fuel

China’s investment generates at least 600 MW (significantly underestimated)

Notably, China invested in nuclear resources

Total: $6294 million
Distribution of capacity generation 2018 – 2019

KOREM: Total RE capacity 2018-2019 in MW

- **Wind**: 41% (610 MW)
- **Solar**: 30% (434 MW)
- **Hydro**: 28% (414 MW)
- **Biogas power**: 1% (18 MW)

Total: 1478 MW