



18th Session

Group of Experts on Cleaner Electricity Systems

ENERGY SECURITY, RESILIENCE AND NET ZERO

TANGIBLE ACTIONS TO DELIVER A SUSTAINABLE ENERGY FUTURE

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London**

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

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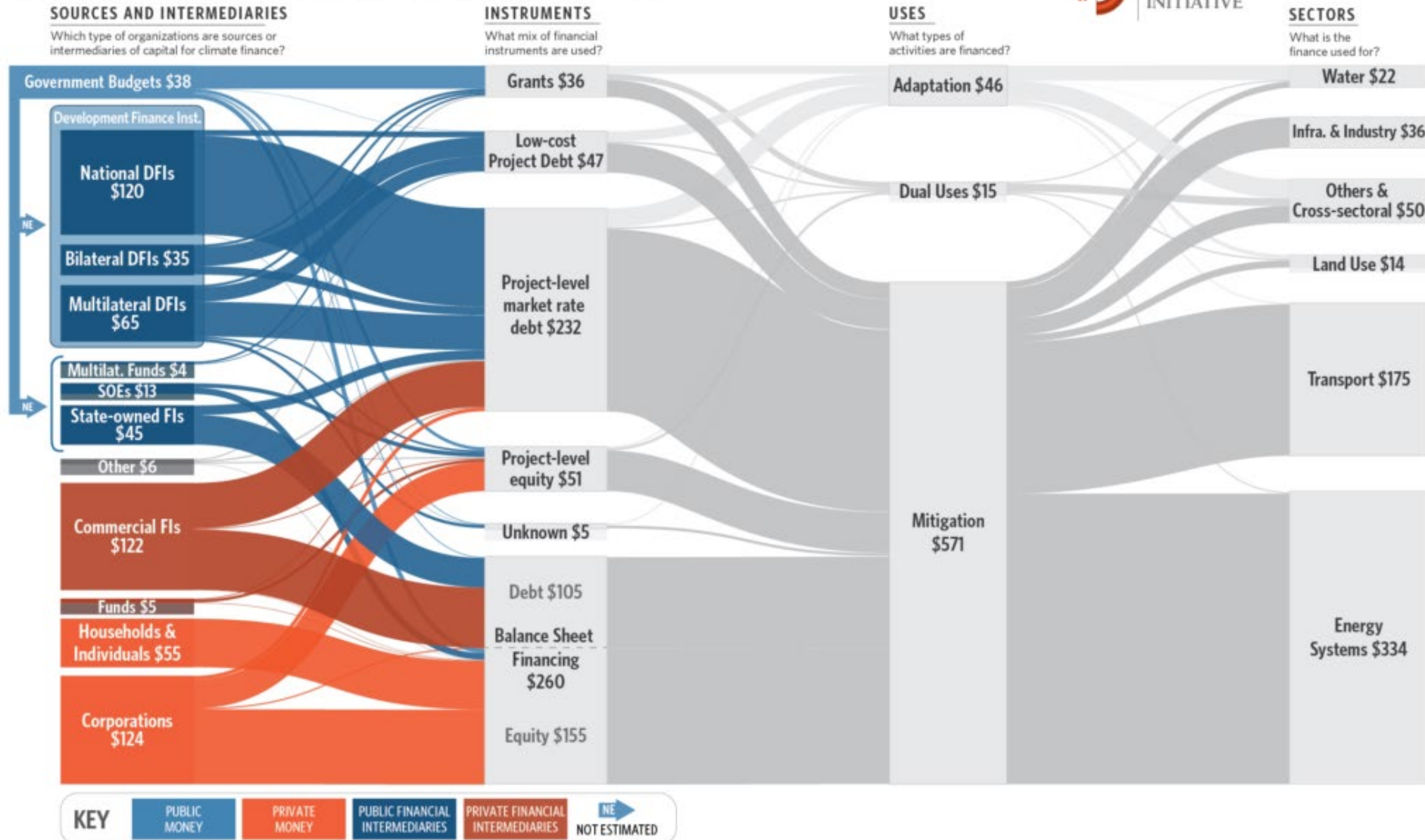
Agenda Item 6 – Financing cleaner energy technologies within a carbon neutral
framework

September 20, 2022

LANDSCAPE OF CLIMATE FINANCE IN 2019/2020

Global climate finance flows along their life cycle in 2019 and 2020. Values are average of two years' data, in USD billions.

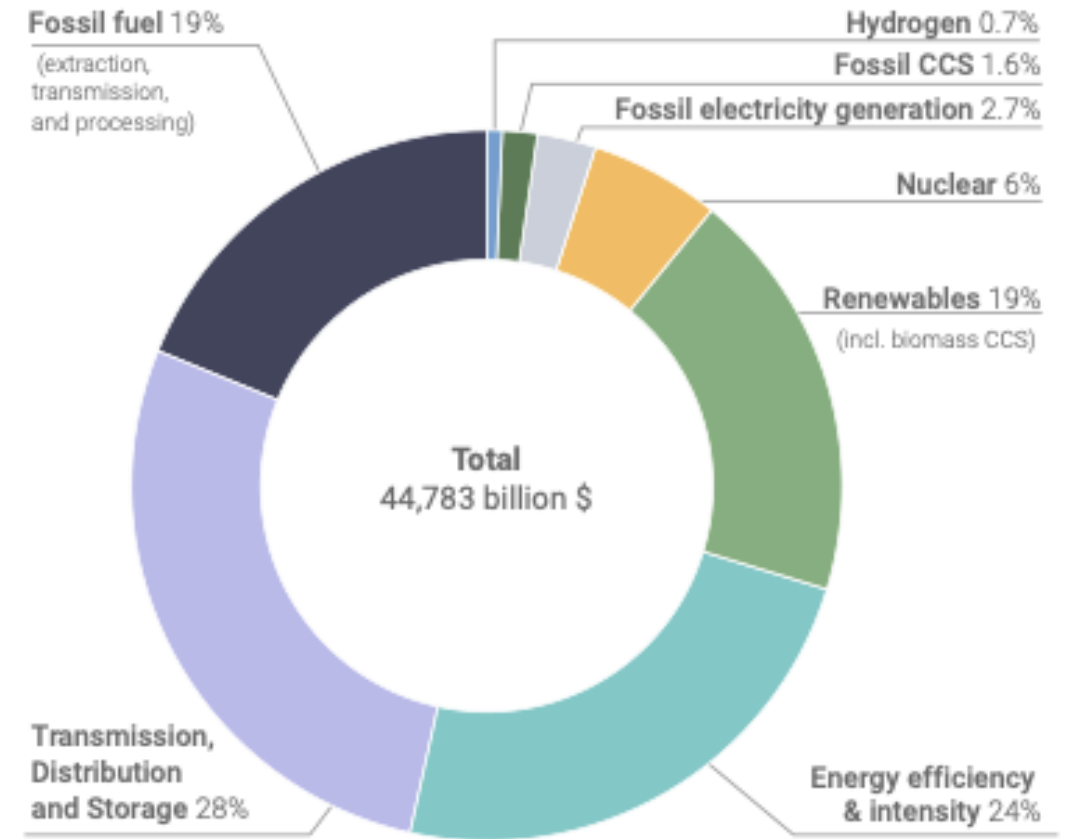
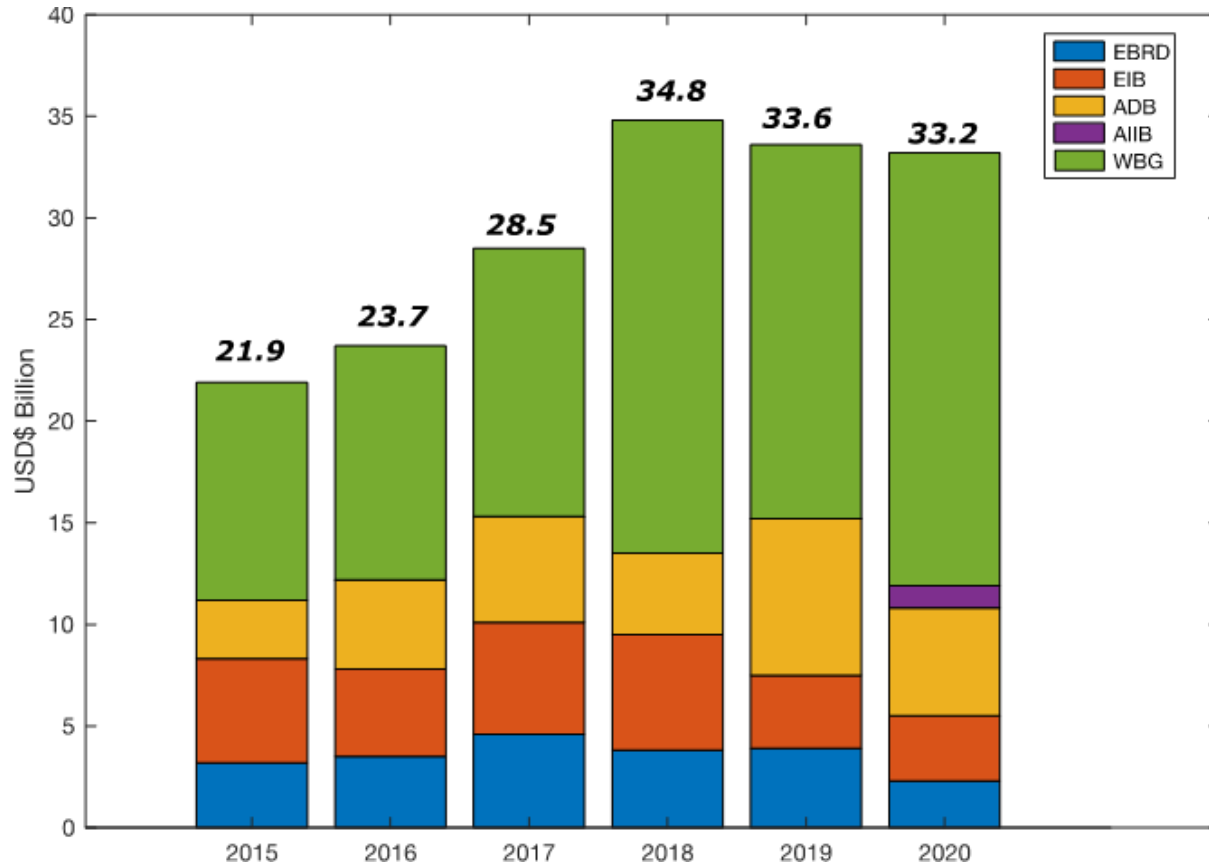
632 BN USD ANNUAL AVERAGE



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

Carbon Neutrality Scenario
Total Investment Needs 2050

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

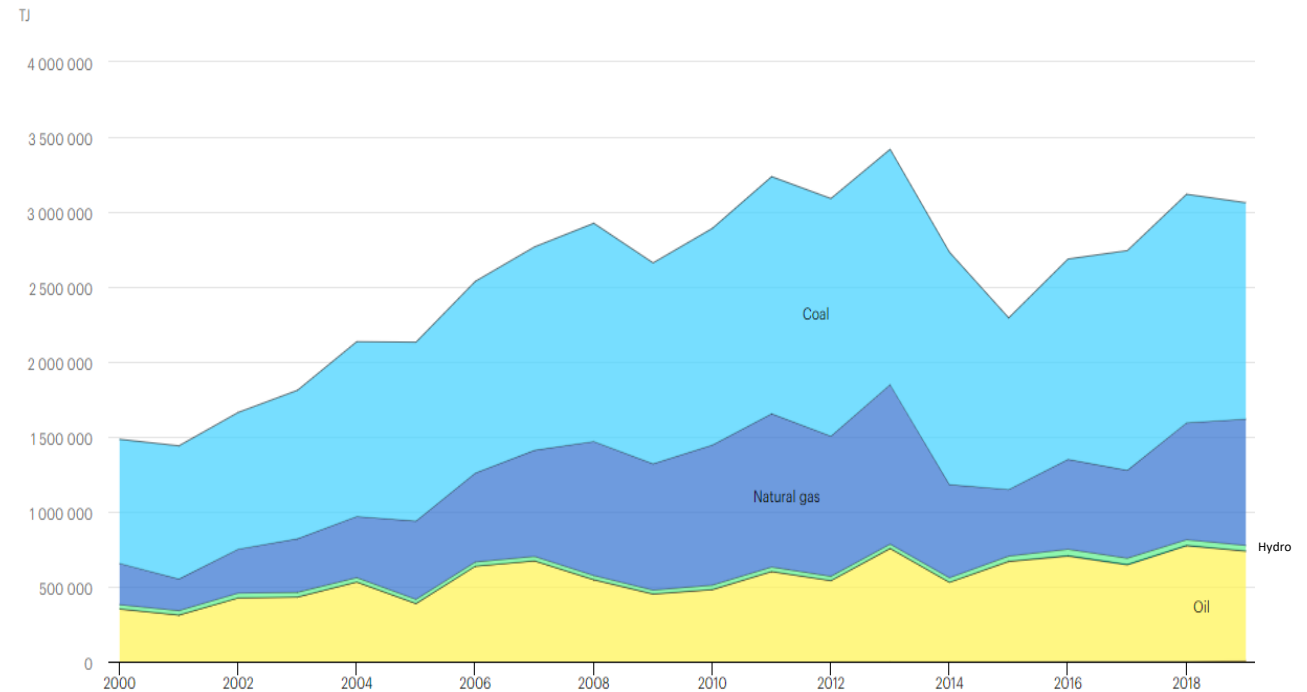
Overview of Kazakhstan's energy sector - fossil fuel dependent



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

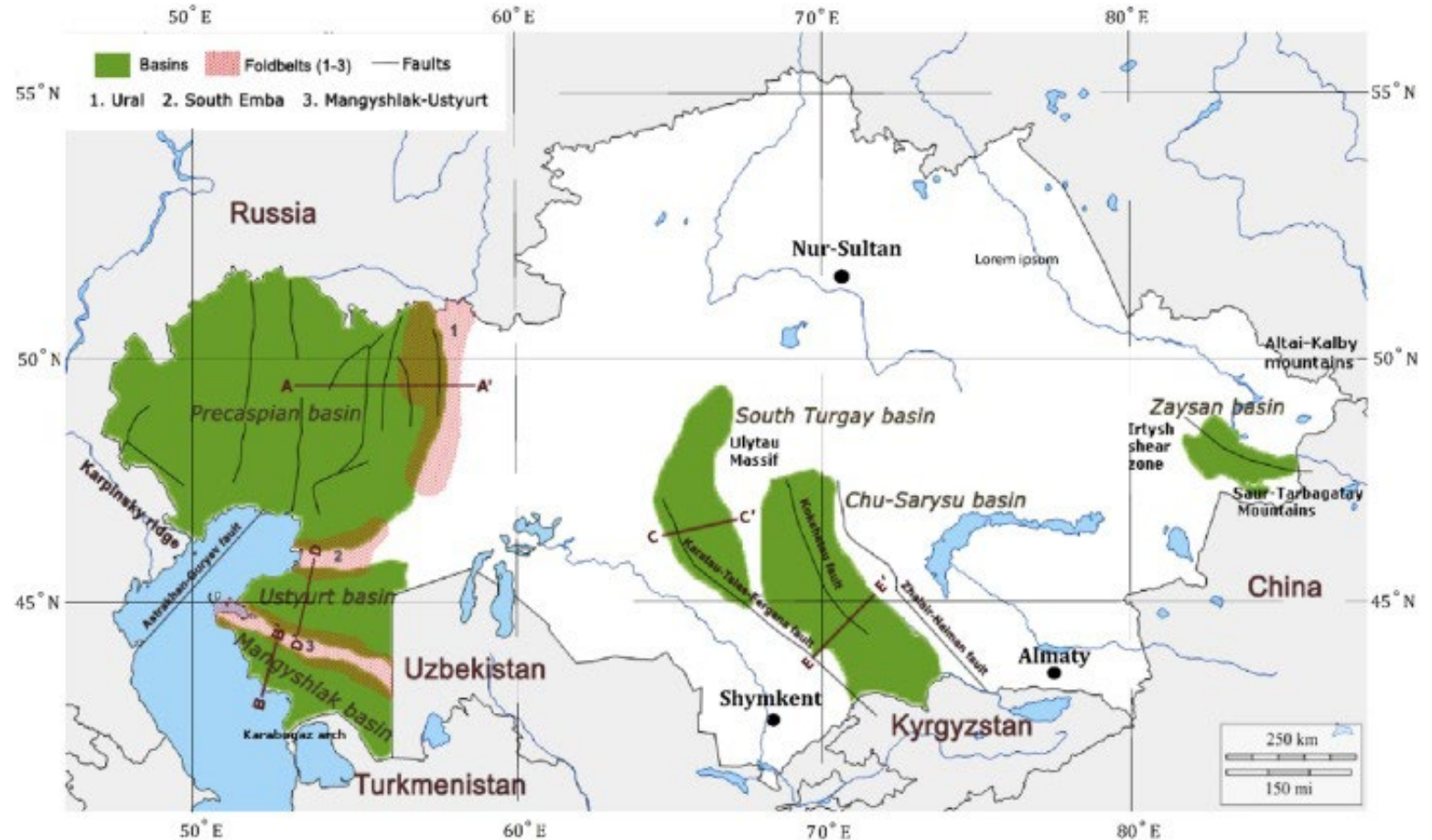
Capacity of all hydro resources is ~170 billion kWh per year

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



Source: Yerdaulet *et al.*, CO₂ storage potential in sedimentary basins of Kazakhstan, *International Journal of Greenhouse Gas Control*, <https://doi.org/10.1016/j.ijggc.2020.103186>.

Climate Change: OECD DAC External Development Finance Statistics

Data Sources:

- Organization for Economic Cooperation and Development external climate finance database

OECD development finance statistics capture an integrated picture of both bilateral and multilateral climate-related external development finance flows.

Discover the data

Datasets:

Climate-related development finance at the activity level:

- > Recipient perspective (Excel) [4-5 MB each]: [2000-2009](#), [2010-2011](#), [2012-2013](#), [2014-2015](#), [2016](#), [2017](#), [2018](#), [2019](#), [2020](#)
 - > All years [35 MB]: [2000-2020](#)
- > Provider perspective (Excel) [4-5 MB each]: [2012-2013](#), [2014-2015](#), [2016](#), [2017](#), [2018](#), [2019](#), [2020](#)
 - > All years [26 MB] [2012-2020](#)
- > Imputed multilateral shares (xlsx)
- > Climate-related bilateral development finance by objective (xlsx)

- Development Bank of Kazakhstan project catalogue

Data mining and data cleaning to select relevant statistics to the energy sector

YEAR OF SIGNING THE AGREEMENT ON OPENING A CREDIT LINE ^	BUSINESS NAME	NAME OF THE PROJECT/OPERATION	PROJECT COST	DBK PARTICIPATION	FUNDING STATUS	REMUNERATION RATE	REGION
2007	KazTransGasAimak JSC	Gasification of settlements and modernization of gas distribution networks of Aktobe region	21,77 bln T	13,023 bln T	assimilated	10,2%, in tenge	Aktyubinsk region
2007, 2008	NC Aktau Sea Commercial Port JSC	"Expansion of Aktau International Commercial Sea Port in the northern direction – Stages 1, 2"	85,7 mln \$	82 mln \$	assimilated	Stage 1: Sublimit 1 – 7%, in tenge Sublimit 2 - 1.15 * 6 months. Libor + 1.28%, in US dollars Stage 2: Sublimit 1 – 7%, in tenge Sublimit 2 - 6 months. Libor+5.14%, USD	Mangystau region
2008	AgromashHolding JSC	"Expansion and modernization of service centers for the sale and maintenance of agricultural machinery"	15,7 mln \$	15,7 mln \$	assimilated	7%, in tenge	Kostanay region

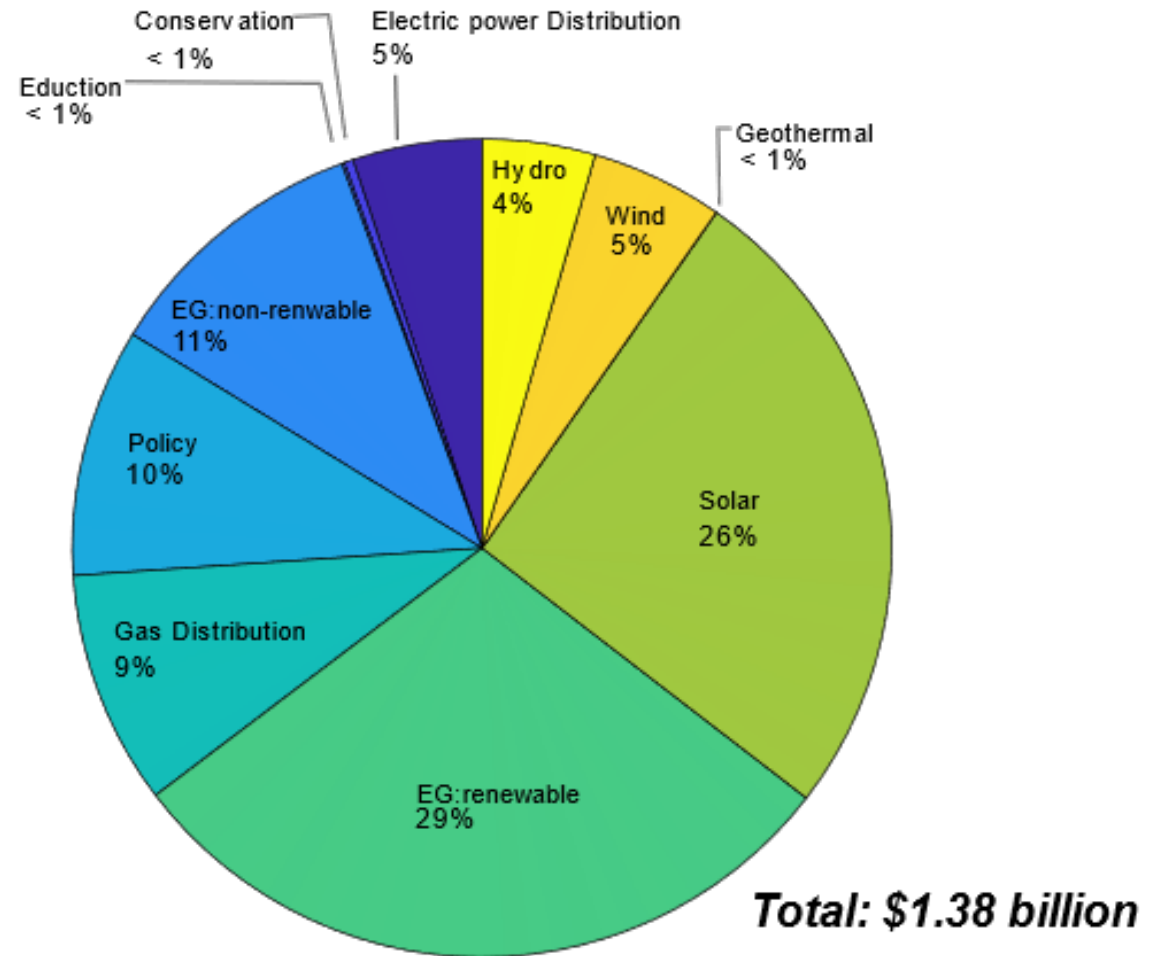
Distribution of external energy-related finance between 2000 – 2021 in US\$ Millions



EBRD is the largest contributor

\$1 billion is flowing into renewable energy projects

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



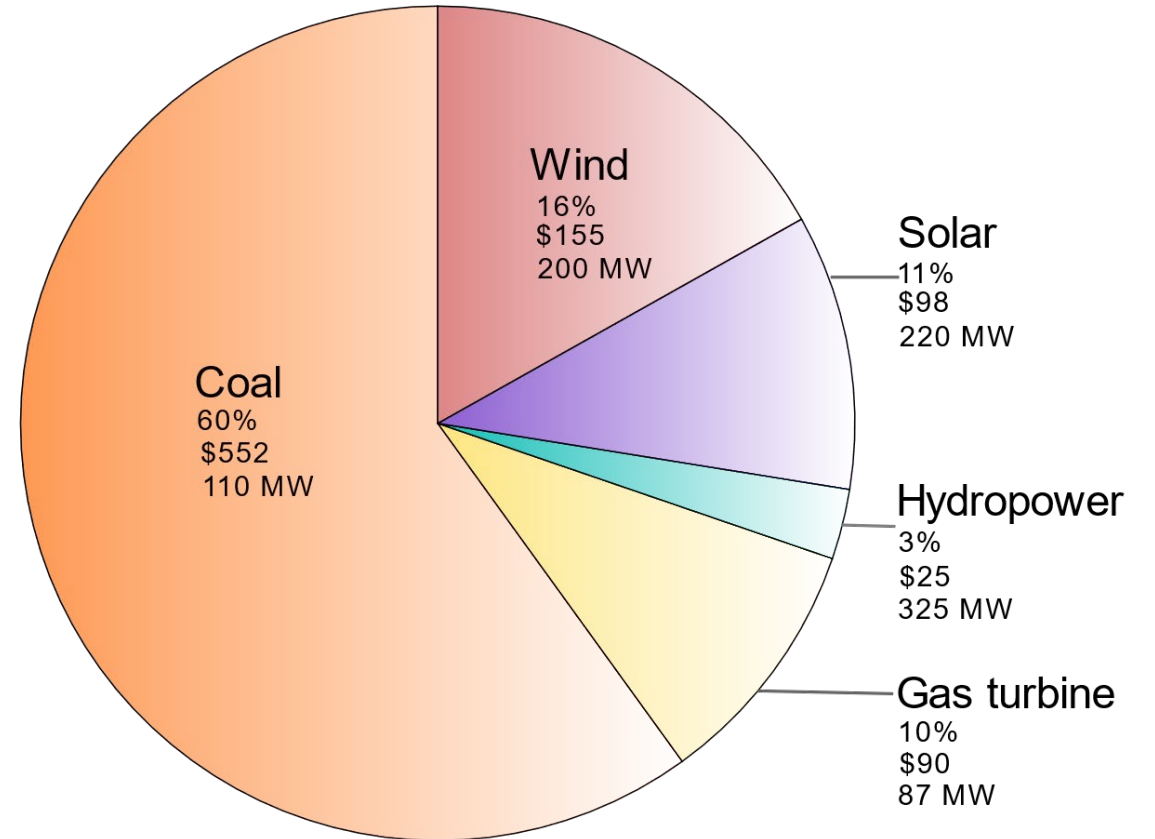
Distribution of internal (Development Bank of Kazakhstan) energy-related finance between 2015 – 2021 in US\$ Millions



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



Total: \$921 million

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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Date 20 | 09 | 2022, Geneva



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

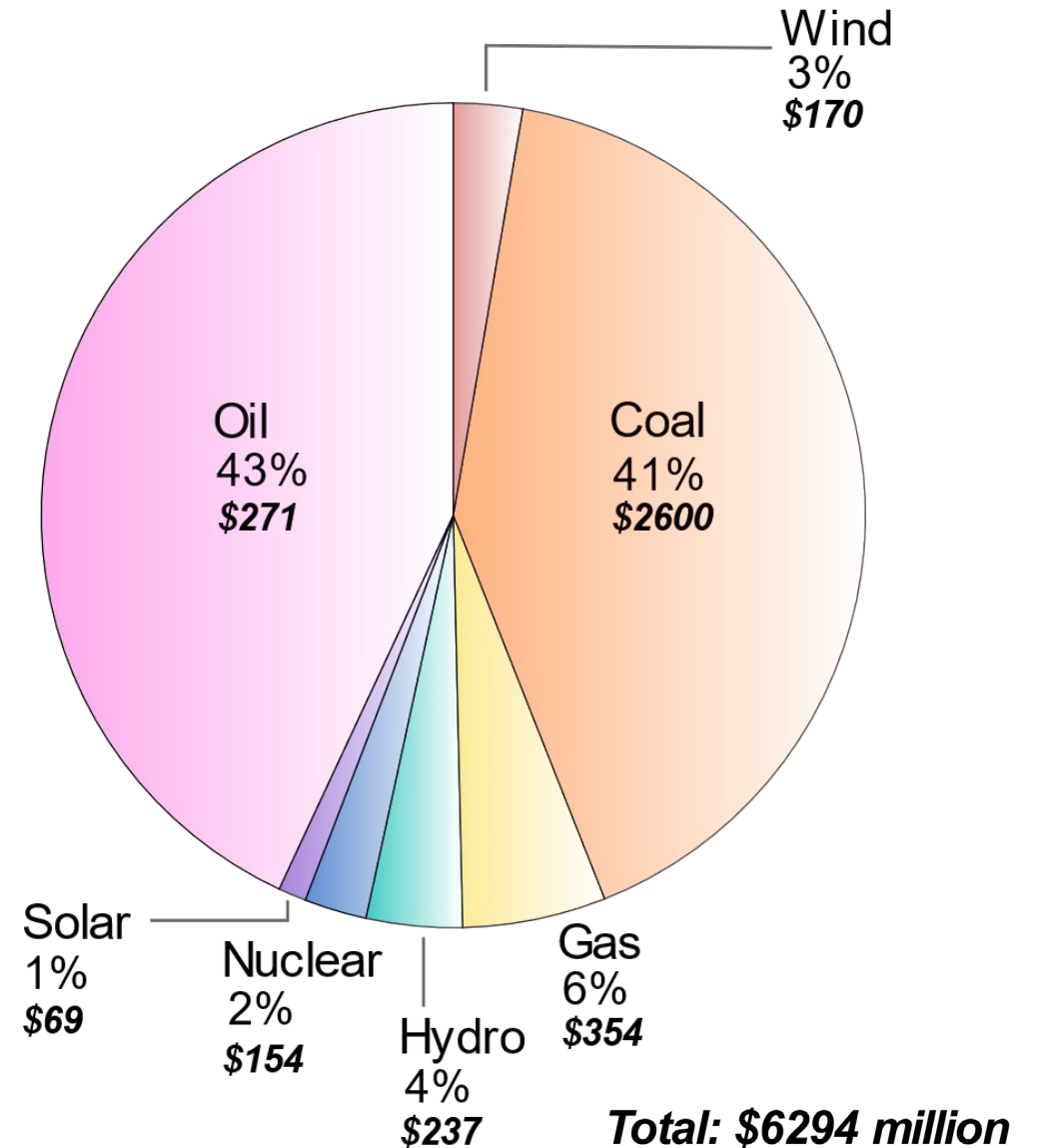
- What are the enablers - policy framework is required from member states to facilitate the scale up of other CET?

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



Distribution of capacity generation 2018 – 2019

KOREM: Total RE capacity 2018-2019 in MW

