



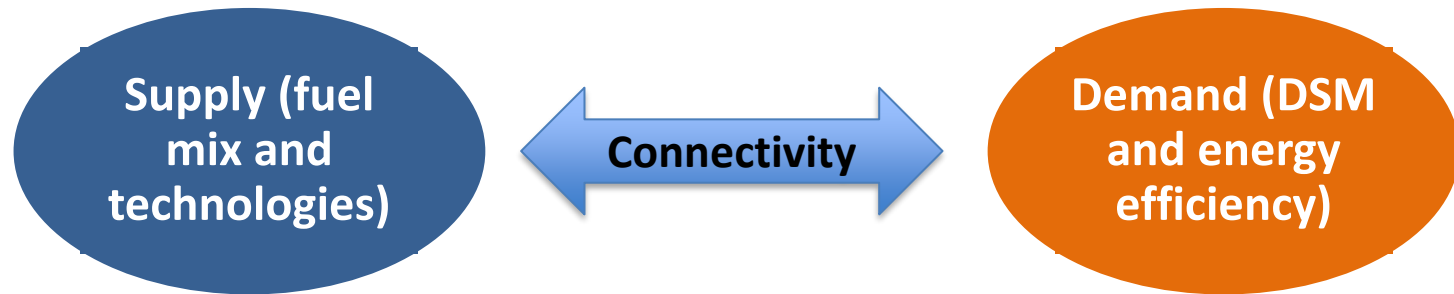
Sustainable Energy in Central Asia – the Role of Regional Cooperation

Sustainable and Clean Energy in North and Central Asia

9-10 June 2021

Kanat Botbaev,
Energy Charter Secretariat

Energy Transition / Sustainable Energy



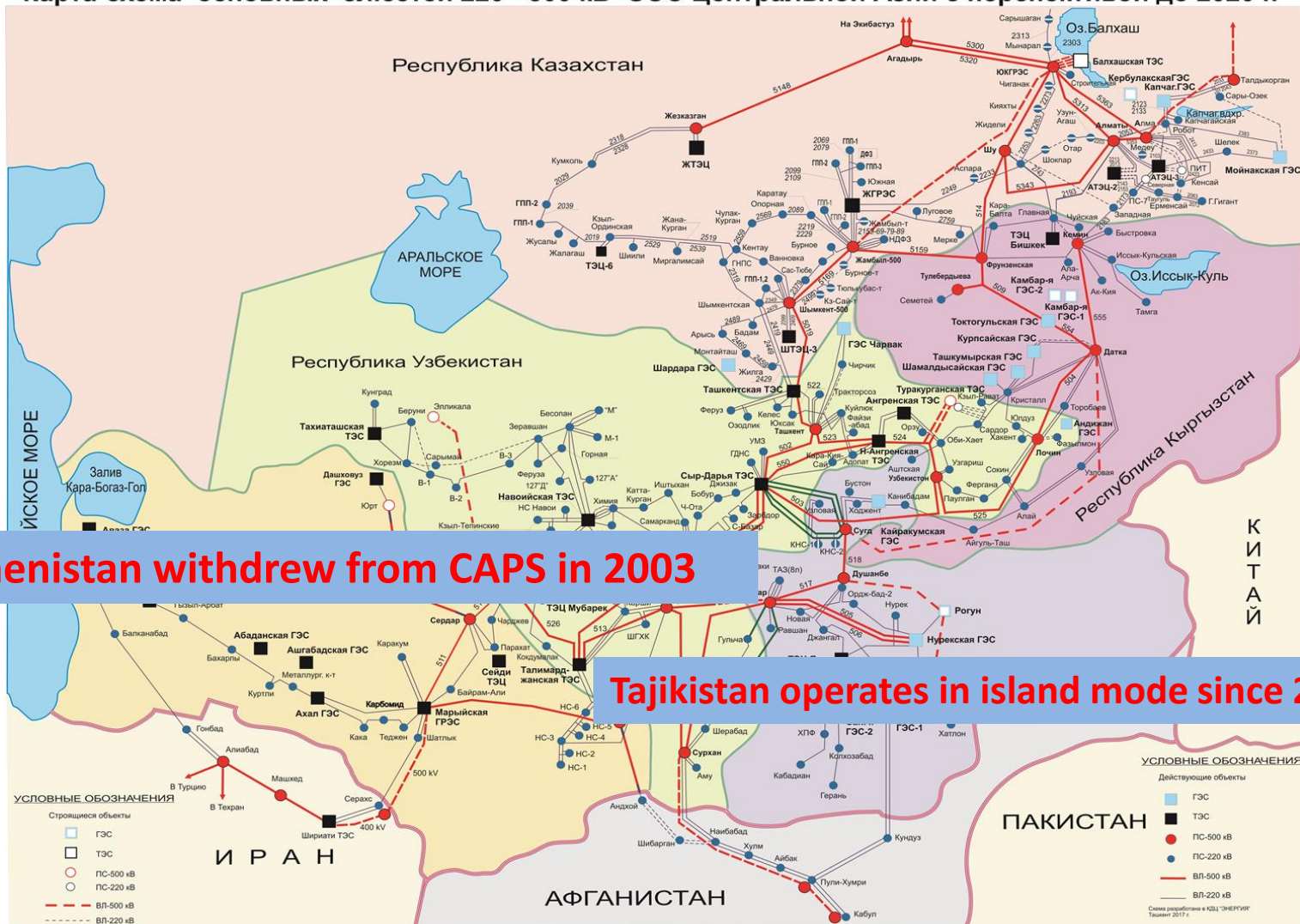
SDG 7: *By 2030, **expand infrastructure** and upgrade technology for supplying modern and SE4All in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries...*

EU Green Deal: *The transition to climate neutrality also requires **smart infrastructure**. Increased **cross-border and regional cooperation** will help achieve the benefits of the clean energy transition at affordable prices.*



Integrated Power System of Central Asia

Карта-схема основных эл.сетей 220 - 500 кВ ОЭС Центральной Азии с перспективой до 2020 г.



Turkmenistan withdrew from CAPS in 2003

Tajikistan operates in island mode since 2009

Power Trade in Central Asia

2016		Imports					GWH	
		Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan	Afghanistan	Total
Exports	Kazakhstan		353.3					353.3
	Kyrgyzstan	210.6		13.5		5.8		229.9
	Tajikistan		14.1					14.1
	Turkmenistan							0
	Uzbekistan		3.3				1497.8	1501.1
	Total	210.6	370.7	13.5	0	5.8	1497.8	2098.4

2017		Imports					GWH	
		Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan	Afghanistan	Total
Exports	Kazakhstan							
	Kyrgyzstan							
	Tajikistan							
	Turkmenistan							0
	Uzbekistan		3.7				1850.8	1854.5
	Total	8.9	18.9	12.8	0	1218	1850.8	3109.4

2018		Imports					GWH	
		Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan	Afghanistan	Total
Exports	Kazakhstan		6.1	21.1				27.2
	Kyrgyzstan	3.3		24.8		754.9		783
	Tajikistan	12.1	2.8			1480.9		1495.8
	Turkmenistan					356		356
	Uzbekistan		3.7				2591.7	2595.4
	Total	15.4	12.6	45.9	0	2591.8	2591.7	5257.4

While intra-regional electricity trade in 1998 accounted for over 25 000 GWh

Benefits of Regional Cooperation

Economic

- Economies of scale
- Optimal use of available resources
- Sharing capacity reserves
- Export revenues



Social

- Access to energy resources
- Poverty alleviation
- Reliability and quality of service



Technical

- Energy security
- Enhanced reliability and emergency support
- Technology transfer
- Efficiency gains



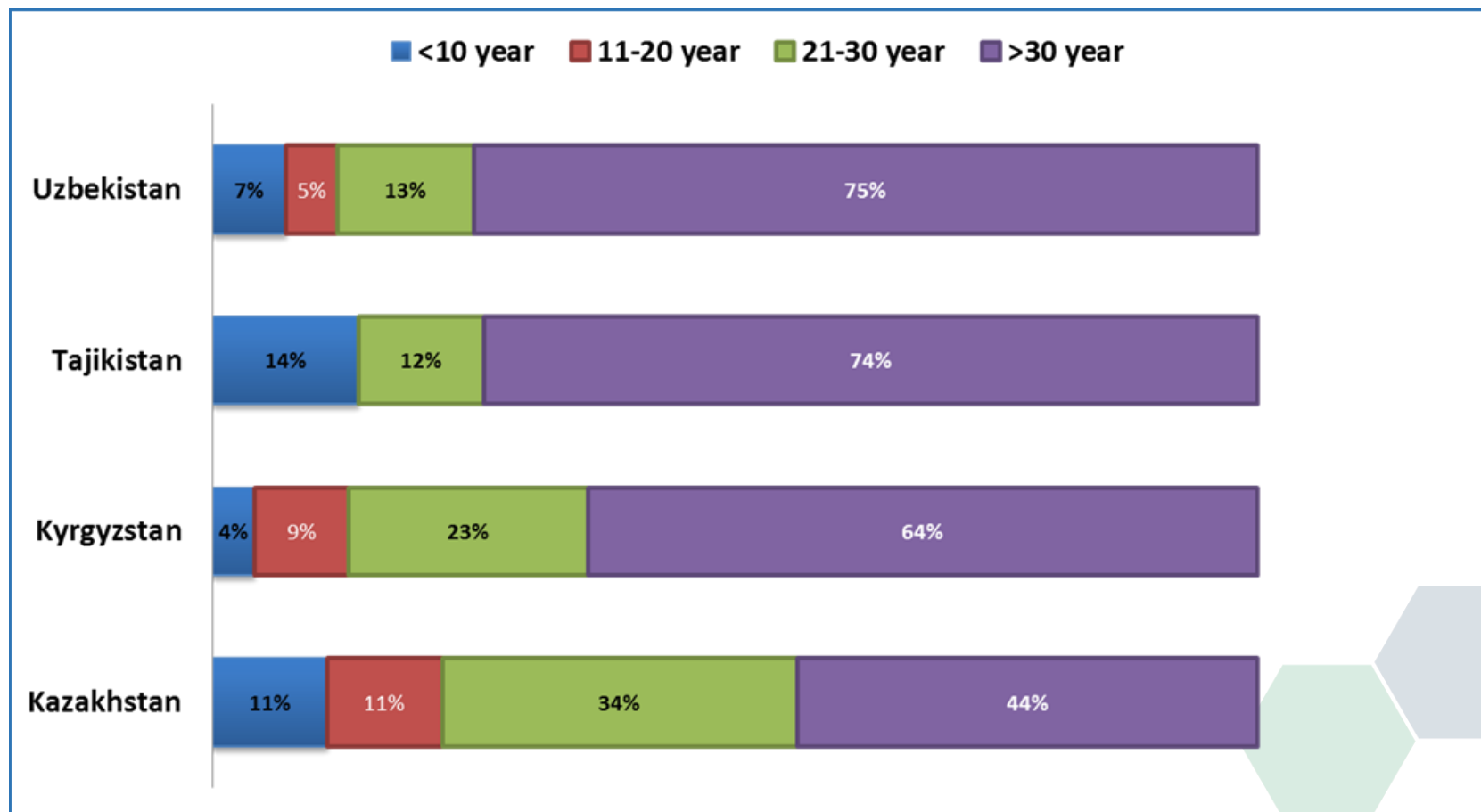
Environmental

- Climate change mitigation
- CO2 reduction
- Deforestation



Sustainable Development

Age of Generation Capacities



According to 2016 Kazakh MoE 57 % of generating capacities are over 30 years old

Power Situation in South Asia

Over 80 % of electricity is imported in Afghanistan:


- Uzbekistan ~ 35 %,
- Tajikistan ~30 %,
- Iran ~20%,
- Turkmenistan ~15 %.

Pakistan over the last 5 years:

- Additional Generation ~ 35GW + 10 GW under construction
- 2020 Summer Peak = 24GW; Winter Peak = 8GW
- Excess Capacity and Cash Shortfall across the sector.

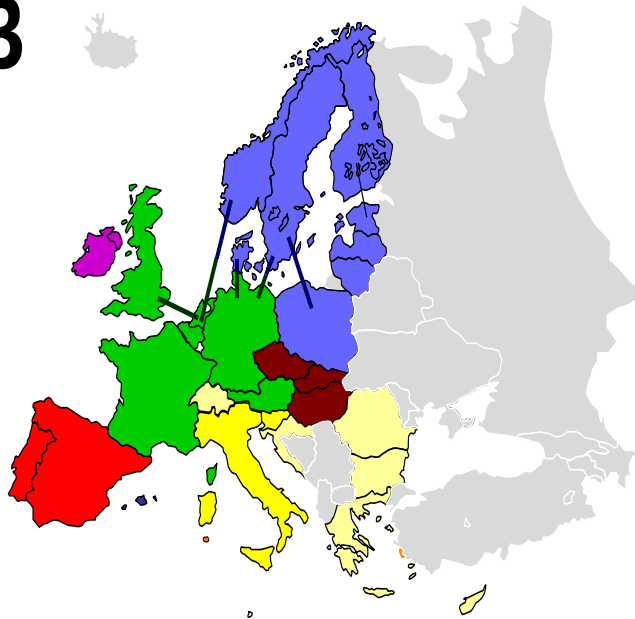


Integration of Regional Markets

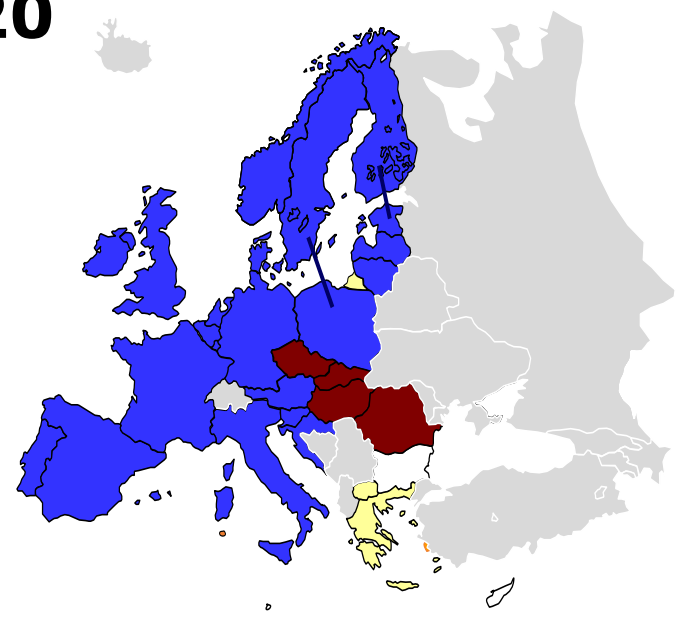
	Technical	Regulatory	Market
No integration	Isolated national systems	National regulation	National market
	Cross-border interconnections	Compatible regulation	Cross-border trade
	Regional coordination	Coordination of regulators	Spot market
	Full integration	Fully integrated operation	Regional regulator

Electricity Market Coupling

2013



2020



DG ENER, European Commission, 2020



Key observations:

- Regional electricity trade depends on **modernisation of energy infrastructure**;
- National strategies highlight role of FDI, but **regulatory and institutional barriers** remain;
- FDIs most of the time pursue **strategic** (geopolitical) **objectives** (not commercially driven);
- National strategies mainly focus on “**self-sufficiency**” and **export revenues** – not energy saving benefits of import;
- Re-conceptualisation of the notion of “**energy security**” in Central Asia;
- Regional electricity cooperation is key for any large-scale **RE** and/or **EE** projects.

Role of the ECT in promoting regional cooperation

Legal Certainty and Transparency

A supra-national legal framework of binding character enhances transparent procedures and legal certainty

Foreign Investment Protection

Energy Charter Treaty provides security for investments

Transmission/Transit

Common rules to coordinate interconnected systems

Cross-border power trade

From bilateral cross-border trade to an integrated power system

**Platform for political and technical dialogue;
Dispute settlement – Conciliation Rules for transit disputes;
Model Early Warning Mechanism;
Model IGA and HGA for Cross-Border Electricity Projects;
Energy Investment Risk Assessment (EIRA).**

Get in touch with us!

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***THANK
YOU***