



Sustainable Energy Connectivity in Central Asia



Funded by
the European Union

Central Asian & European Hydrogen Diplomacy Forum

Hilton Astana Hotel, May 23, 2024

SECCA: promoting small-scale renewable energy in Central Asia

Paata Janelidze,
Team Leader/Key Expert of the European Union project "Support to Sustainable Energy Connectivity in Central Asia (SECCA)"



Brief information about SECCA

Sustainable Energy Connectivity in Central Asia (SECCA):

EU-funded regional cooperation project between the European Union and its partner countries in Central Asia in the field of sustainable energy

Partner countries:

Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan



Brief information about SECCA (2)

- **Contracting Authority:** EU Delegation to Kazakhstan
- **Duration:** 48 months starting 15 March 2022
- **State Partners:**
 - ✓ Kazakhstan - Ministry of Energy
 - ✓ Kyrgyzstan - Ministry of Energy
 - ✓ Tajikistan - Ministry of Energy and Water Resources
 - ✓ Turkmenistan - Ministry of Energy
 - ✓ Uzbekistan - Agency for Strategic Reforms

Definition of “small-scale RES”

- The SECCA project focuses on providing Technical Assistance for the promotion of **small-scale RES**
- The definition of “**small-scale RES**” (capacity limits) differs in the CA countries
- In this presentation, **small-scale RES** is defined as RES installations up to 10 MW (i.e. including micro-scale RES up to 1 MW)

Status of RES development in Kazakhstan

- As of March 2024, there are more than 140 RES facilities in Kazakhstan with a total capacity of up to 2,900 MW (excluding large HPPs, but including all solar and wind power plants)



1202,6 MW
45 facilities



1394,6 MW
57 facilities



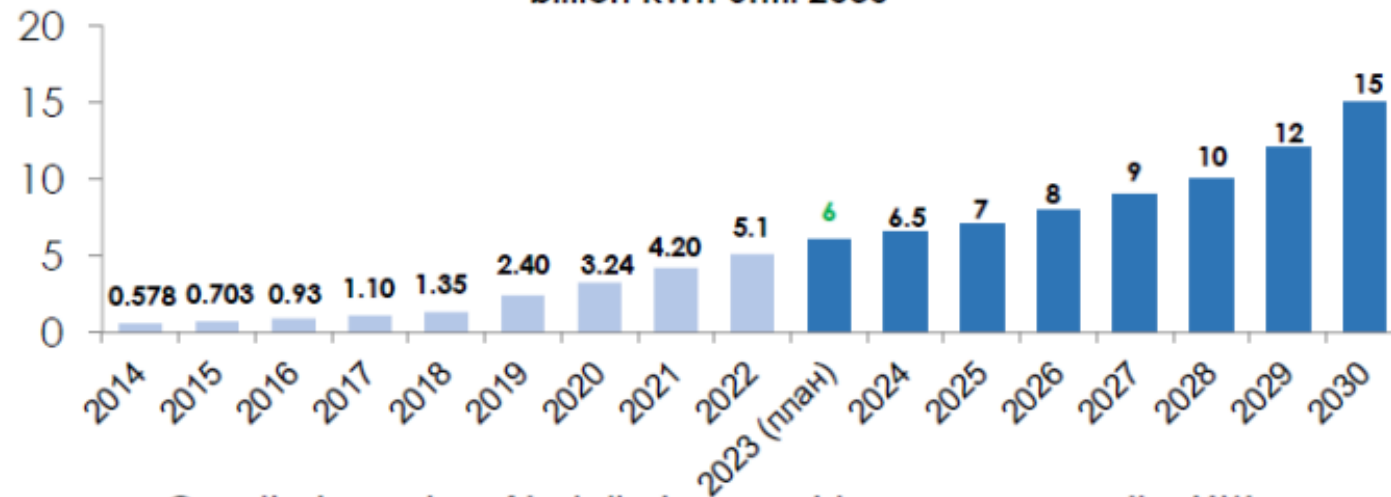
269,6 MW
39 facilities



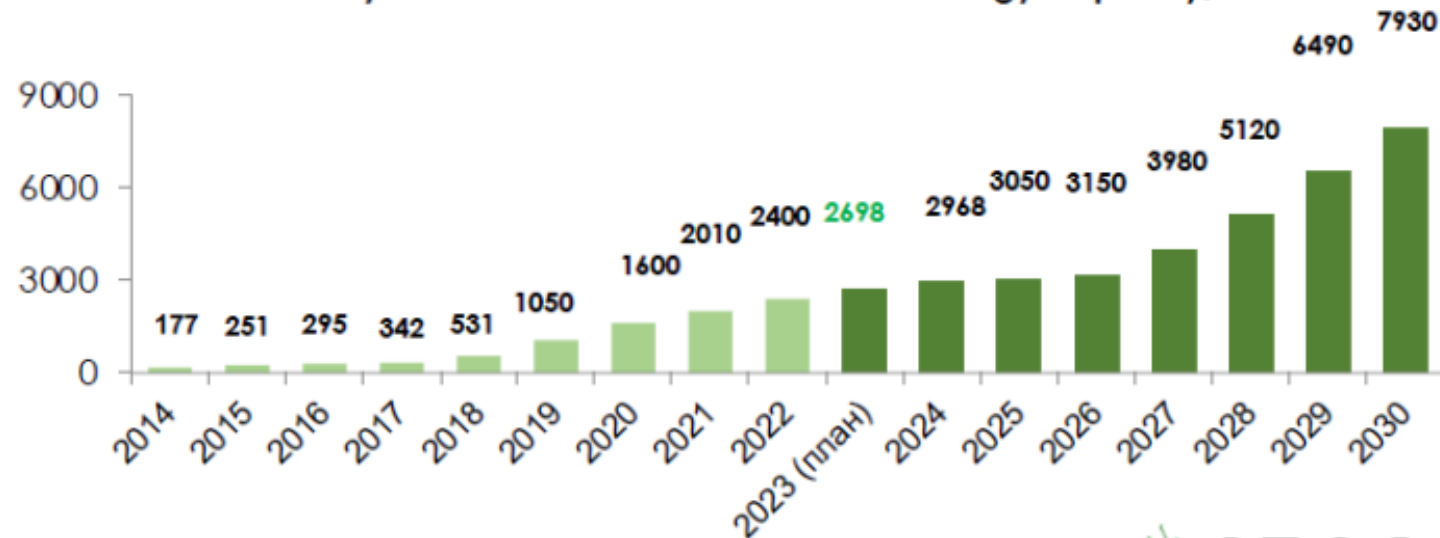
1,77 MW
3 facilities

Status of RES development in Kazakhstan (2)

Volume of electricity generation from renewable energy sources, billion kWh until 2030



Growth dynamics of installed renewable energy capacity, MW



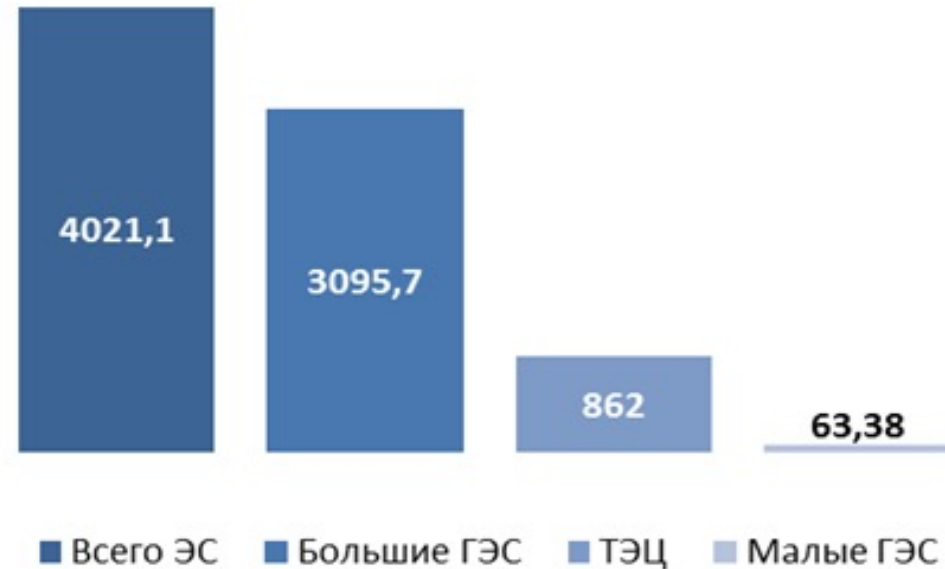
Status of RES development in Kazakhstan (3)

At the request of the Ministry of Energy, the SECCA project provides assistance in:

- Study of international experience in the development of small-scale generation and prosumers, study of possible forms of support, as well as detailed study of requirements set by authorized bodies and energy companies to reduce the negative impact on their infrastructure from small-scale generation facilities and prosumers
- Study of international experience in legislation development for promoting hydropower including small hydropower

Status of RES development in Kyrgyzstan

Installed capacity of power plants in 2023



- Share of RES (not including large HPPs) in total electricity production - about 1%

Status of RES development in Kyrgyzstan (2)

At the request of the Green Energy Fund under the Cabinet of Ministers, the SECCA project provides assistance in:

- Providing consultancy assistance in the development of a RES strategy
- Providing consultancy assistance on the development of a pre-feasibility study for a small hydropower project

Status of RES development in Tajikistan

The National Development Strategy of Tajikistan until 2030 in the energy sector envisages diversification of generation sources by 10% and additional generation of more than **500 GWh per year through RES and application of energy efficient technologies**

	Gross, MW	Technically feasible, MW	Economically feasible, MW
Small Hydropower	60 167	32 476	32 476
Solar	1 822 894	1 493	545
Wind	62 257	3 852	1 926
Biomass	1 614	1 614	807

Status of RES development in Tajikistan (2)

At the request of the Ministry of Energy and Water Resources of the Republic of Tajikistan, SECCA is assisting in the development of rooftop solar. The assistance includes:

- Study of technical, environmental and financial aspects of rooftop solar in Tajikistan
- Analysis of legal & regulatory (L&R) framework and elaborated recommendations for its improvement
- Estimation of technically and economically feasible potential of rooftop solar in Dushanbe city
- Development of a financing scheme for rooftop solar in Tajikistan

Status of RES development in Tajikistan (3)

- Roof area and potential for electricity generation by building type in Dushanbe

Type of building	Number	Area, km ²	Usable area, km ²	Optimal capacity, MW	Estimated annual electricity generation, GWh
Residential (old)	1047	1,294	1,04	103,5	149,1
Residential (new)	1442	1,752	1,40	140,1	201,8
Social	200	0,589	0,47	47,1	67,8
Commercial	14	0,050	0,04	4,04	5,8

Status of RES development in Tajikistan (4)

- Preliminary results of Cost-benefit analysis of rooftop solar systems in Dushanbe

Type of building	Electricity tariff (w/out VAT)		Without Net Metering		With Net Metering	
	TJS/kWh	USD/kWh	IRR, %	Payback, year	IRR, %	Payback, year
Residential	0,3075	0.0281	-	-	-	-
Social	0,5279	0.0482	5,0%	12,48	9,4%	9,32
Commercial	0,7035	0.0642	12,0%	7,50	15,0%	6,50

IRR – Internal Rate of Return

Status of RES development in Uzbekistan

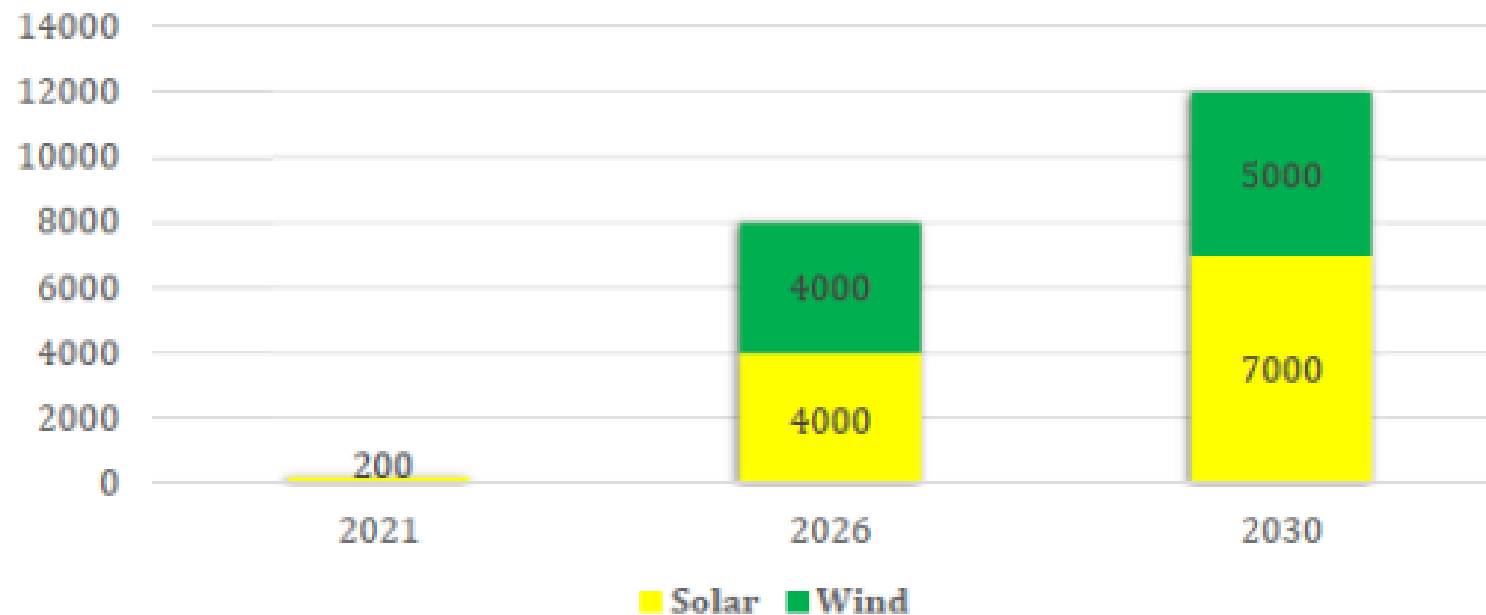
RES indicators (including large-scale RES)

- Implemented in 2019-2021

Tenders announced	6
Number of RES projects	14
Number of concluded agreements	10
Total capacity, MW	2 897
Approved regulatory and legal acts related to the projects	10 Presidential Decrees
Signed projects, \$ billion	2.8

Status of RES development in Uzbekistan (2)

- Planned (according to the updated Concept for Ensuring Electricity Supply in Uzbekistan in 2020-2030), MW



Status of RES development in Turkmenistan

- “Law of Turkmenistan on Renewable Energy Sources” (13.03.2021)
- “National Strategy for the Development of Renewable Energy in Turkmenistan until 2030” (04.12.2020)
- “Concept of Development of the Turkmen Lake Altyn Asyr Region for 2019-2025” (April 2019)
 - ✓ Under this concept, it is planned to build a combined solar-wind power plant with a capacity of 10MW (7MW solar, 3MW wind)
 - ✓ Currently the construction is in the final stage of completion

**THANK YOU
FOR YOUR
ATTENTION!**

