

## ROUND TABLE

# Development of Small Hydropower in Kyrgyzstan: First Steps Taken

Bishkek, 4 February 2025

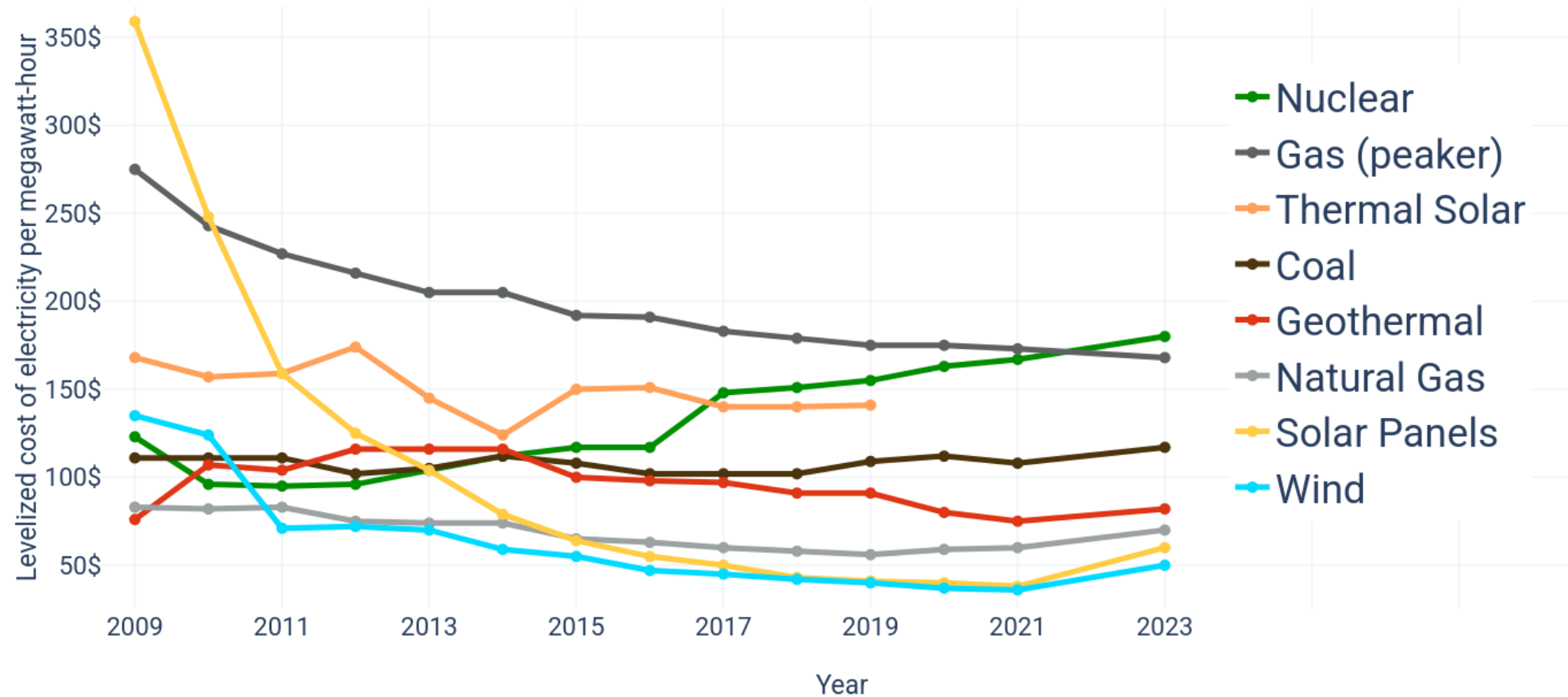
## SECCA ongoing activities in Kyrgyzstan in the field of small-scale RE

Paata Janelidze

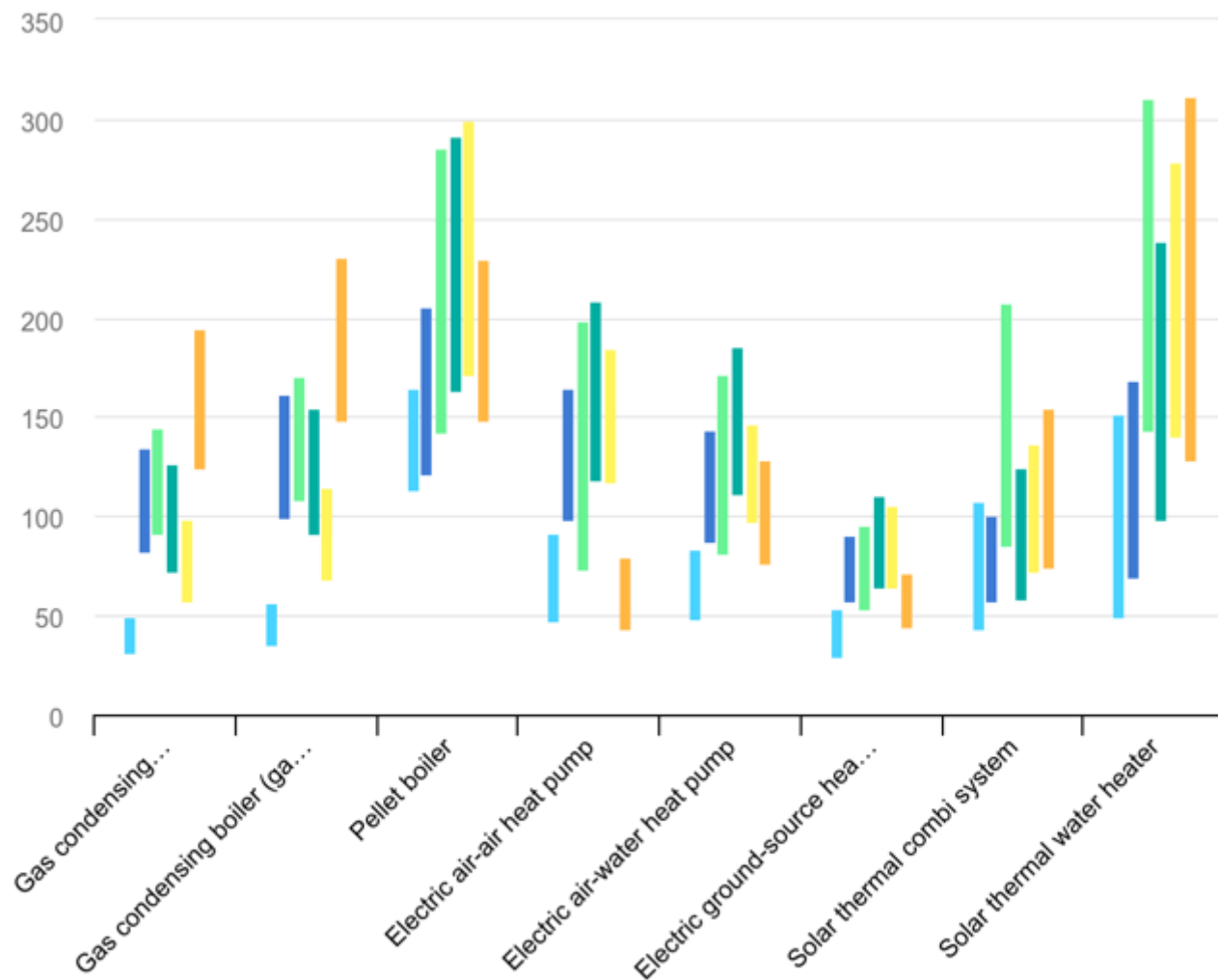
Team Leader, Key Expert in Energy Engineering, SECCA

# Equalised cost of electricity from different energy sources

Electricity costs according to data from Lazard



# Equalised cost of heating for consumers, for selected space and water heating technologies

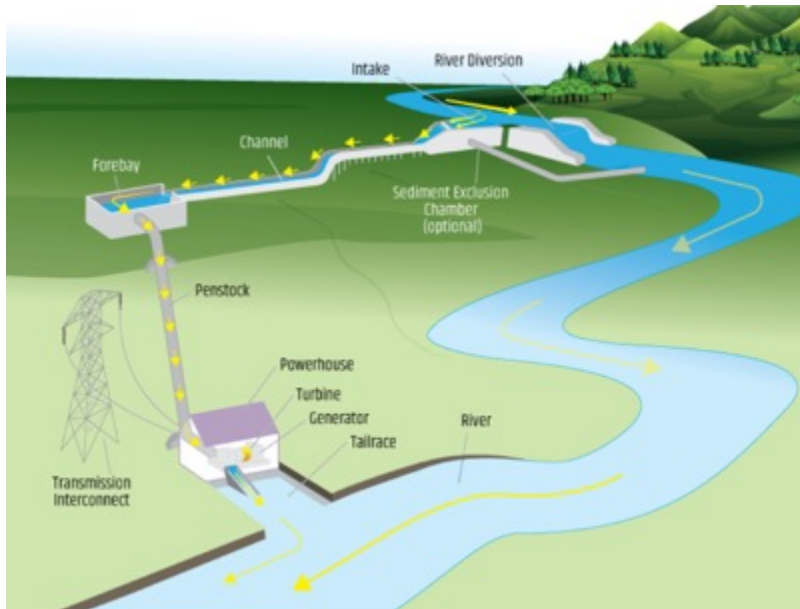


Source: IEA



# SECCA activities in the field of small-scale renewable energy in CA countries

## Small hydropower



## Kazakhstan

- Review of international experience in drafting legislation for small hydropower (SHPP) development
- Review of current legislative mechanisms for the development of SHPP in Kazakhstan
- Elaboration of proposals for creating new and/or amending legislation to improve existing mechanisms for the development of SHPP

# SECCA activities in the field of small-scale renewable energy in CA countries (2)

## Solar, wind power plants



## Turkmenistan

- Training for specialists of the first hybrid solar-wind power plant in Turkmenistan built on the shore of Lake Altyn-Asyr "Operation, design, maintenance and repair of solar and wind power plants. Peculiarities of operation in climatic conditions of Turkmenistan"

# SECCA activities in the field of small-scale renewable energy in CA countries (3)

## Solar installations on rooftops

### a. Solar photovoltaic systems



## Tajikistan

- Assessment of solar energy potential on rooftops in Dushanbe city
- Identify gaps in the existing legal and regulatory framework and provide recommendations to address these gaps
- Development of a financing scheme that takes into account Tajikistan's energy policy objectives, market readiness in the country, identified barriers and stakeholder views



# SECCA activities in the field of small-scale renewable energy in CA countries (4)

## Solar installations on rooftops

### a. Solar photovoltaic systems



## Uzbekistan

- Assessment of financial feasibility of solar PV projects in Uzbekistan
- Development of a financing scheme with a focus on the RESCO model (*RESCO - Renewable Energy Service Company*) that takes into account Uzbekistan's energy policy objectives, market readiness, identified barriers and stakeholder opinions.
- Developing an implementation plan to launch the proposed funding scheme

# SECCA activities in the field of small-scale renewable energy in CA countries (5)

## Solar installations on rooftops

### b. Solar water heaters



## Tajikistan

- Assessment of financial feasibility
- Development of a financing scheme
- Drawing up an implementation plan to launch the proposed funding scheme



# SECCA activities in the field of small-scale renewable energy in CA countries (6)

## Biomass energy



## Kazakhstan, Uzbekistan

- Assessment of the energy potential of biomass
  - ✓ Solid biomass (Agricultural residues, Woody biomass)
  - ✓ Liquid biofuels (Biodiesel, Bioethanol)
  - ✓ Biogas

# SECCA activities in the field of small-scale renewable energy in CA countries (7)

## Geothermal energy



## Kazakhstan

- Collection of information and data related to geothermal reservoirs in Kazakhstan:
  - ✓ Data on geothermal wells
  - ✓ Information on the use of geothermal water
  - ✓ Project proposals
- Analysing the existing regulatory framework and identifying gaps based on international experience



# SECCA activities in Kyrgyzstan in the field of small-scale renewable energy

## Development of pre-feasibility study for construction of Karakol-1 SHPP

- On 15 June 2023, the Cabinet Office's Green Energy Fund requested technical assistance (TA) from SECCA in:
  - ✓ capacity development
  - ✓ attracting international experience and best practices of RES development
  - ✓ development of pre-feasibility studies for RES investment projects
- On 5 October 2023, SECCA organised a technical workshop on practical aspects of small-scale renewable energy development in the Kyrgyz Republic, where the experience of the Georgia Energy Development Fund (GEDF) in promoting RES development with a focus on small hydropower was presented



# SECCA activities in Kyrgyzstan in the field of small-scale renewable energy (2)

## Development of pre-feasibility study for construction of Karakol-1 SHPP (continued)

- On 10 February 2024, the Fund made a specific request to provide TA to develop a pre-feasibility study for the construction of the Karakol-1 SHPP
- An initial pre-feasibility study development meeting was held on 8 July 2024
- Draft pre-feasibility report for Karakol-1 SHPP prepared in January 2025

## Promotion of rooftop solar installations in Kyrgyzstan

- On 4 October 2024, the Ministry of Energy of the Kyrgyz Republic requested the SECCA project to provide TA for the promotion of small capacity RES and microgeneration, taking into account the assessment of the effectiveness of their installation on buildings and structures, as well as on adjacent territories and other open areas, regardless of the form of ownership

# SECCA activities in Kyrgyzstan in the field of small-scale renewable energy (3)

## Promotion of rooftop solar installations in Kyrgyzstan (continued)

SECCA's team of experts is working on the following tasks:

- Data collection to assess the potential of rooftop solar installations in Bishkek (roof area of different types of buildings; electricity demand of buildings by type, etc.)
- Comparison of the economic feasibility of projects based on a single average tariff, net metering and net billing
- Development of a financing scheme that takes into account Kyrgyzstan's energy policy objectives, the country's market readiness, identified barriers and stakeholder views
- Offering incentives and subsidies that can facilitate the implementation of the financing scheme
- Development of an implementation plan for launching the proposed funding scheme, including resource requirements, indicative timelines and milestones

# SECCA activities in Kyrgyzstan in the field of small-scale renewable energy (4)

## Promotion of biomass energy utilisation in Kyrgyzstan

The following assignments were carried out between 2023 and 2024:

- Assessment of the energy potential of biomass (woody biomass, biofuel, biogas)
- Assessment of economic benefit of biomass utilisation in Kyrgyzstan
- Review of the legal and regulatory framework for biomass energy production
- Brief overview of existing biomass utilisation technologies applied in Kyrgyzstan
- Overview of the main players in the biomass energy market in Kyrgyzstan
- Description of biomass energy projects implemented or planned in Kyrgyzstan
- Description of major obstacles and lessons learnt



**THANK YOU  
FOR YOUR  
ATTENTION!**

