MINISTRY OF ECONOMY AND SUSTAINABLE
DEVELOPMENT OF GEORGIA

Energy Sector of Georgia

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Ministry of Economy and Sustainable Development of Georgia

Energy Sector Overview

Independent regulator – GNERC

Ministry of Economy and Sustainable Development of Georgia

- JSC Georgian State Electrosystem
- Electricity System Commercial operator – ESCO
- Ltd Engurhesi
- JSC Georgia Energy Development Fund
- JSC UES Sakrusenergo
- LEPL State Agency of Oil and Gas
- JSC Georgian Oil and Gas Corporation (GOGC)
- Georgian Gas Transportation Company LLC (GGTC)
- Georgian Natural Gas Transmission Network Owner LLC

JSC Georgian Energy Exchange

Energy Sector Overview

Independent regulator – GNERC

- Is nominated as the sector regulator
- Issues licenses in the electricity, natural gas and water sectors and control/monitor activities of licensees
- Resolve disputes between licensees and customers
- Is responsible for market monitoring

Natural Gas Sector

- **JSC Georgian Oil and Gas Corporation (GOGC)** is a diversified company with business activities in various segments of energy. It has the status of the National Oil Company and protects state interests in the Production Sharing Agreements signed with investors.
- **LLC Georgian Natural Gas Transmission Network Owner (TNO)** is an owner of the main gas pipeline system of Georgia. The main purpose is to invest in the development of the Main Gas Pipeline System (MGPS). In 2021 GOGC transferred MGPS and all related infrastructure in the ownership to the TNO as well as all rights and obligations indicated in MGPS rent agreement between GOGC and GGTC.
- **LLC Georgian Gas Transportation Company (GGTC)** - operates the natural gas transmission system
- **LEPL State Agency of Oil and Gas** - regulates gas extraction, processing and transportation of extracted gas
- **Distribution system Operators/Licensees**
  - LLC Tbilisi Energy
  - LLC SOCAR Georgia Gas
  - Other small companies

Ministry of Economy and Sustainable Development of Georgia

- Sets policies and is responsible for development and implementation of national policy in the energy sector, including the establishment of the required legislative and regulatory framework
- Is also responsible (among others) for the development of sector strategies, attraction of investment in the sector and the development of the competition

Georgian Energy Exchange JSC

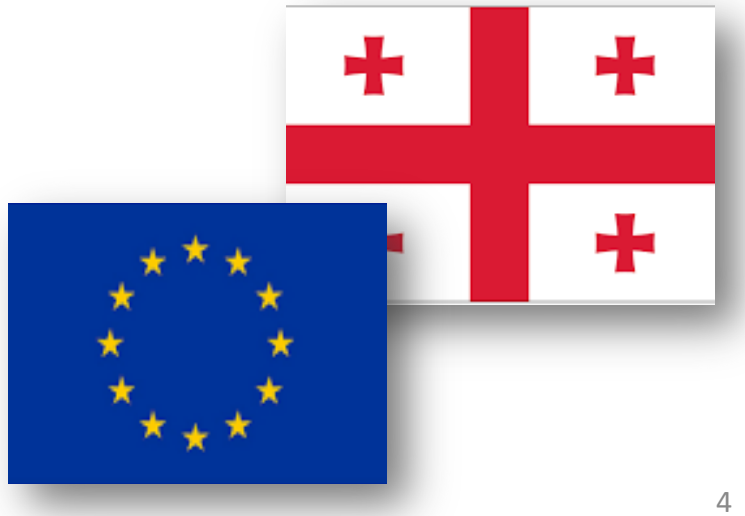
- Operates the day-ahead market operation and Intraday market
- Fulfills Bilateral contracts (forward) market operation
- Manages the financial clearing system for Day-ahead and Intraday markets

Electricity Sector

- **JSC Georgian Electrosystem (GSE)** - is the single Electricity Transmission System Operator as well as provides power transmission and dispatch services all over the country. GSE plans and coordinates electricity generation and consumption. Its transmission infrastructure consists of 3350 km transmission lines and 90 substations.
- **JSC Electricity System Commercial operator (ESCO)** is responsible for balancing Balances market, emergency import/export; reserves capacity trader
- **JSC UES Sakrusenergo** is an owner of the electricity transmission lines of 500kV, 330 kV and 220kV
- **Generation Licensees**
  - 109 Hydropower plants
  - 5 Thermal plants
  - 1 Wind power plant
- **Distribution Companies**
  - JSC Telasi
  - JSC Energo-Pro Georgia

Main Direction of Energy Policy of Georgia

- Gradual approximation of Georgian legislation with EU legislation
- Development of local renewable energy sources
- Diversification of energy supply sources, optimal utilization of energy resources of Georgia and creation of reserves, therefore increasing energy security
- Establishment of new energy market model
- Introduction of energy efficiency measures
- Development of transmission infrastructure
- Increasing the role of Georgia as a transit country in the region
- Increasing economic indicators and competitiveness of energy
- Climate change mitigation and adaptation, Reducing the impact on the environment
- Energy poverty and protection of vulnerable consumers



Overview of Georgian Energy Policy

National Energy Policy (NEP)

- NEP is being developed according to the Article 7 of the Law on Energy and Water Supply
- A draft version of the document is being finalized
- Document is expected to be approved in the end of 2023

National Integrated Energy and Climate Plan (NECP)

- NECP is the annex of the NEP and includes 5 main pillars:
  - Energy security
  - Decarbonization
  - Energy efficiency
  - Internal energy market
  - Research, Innovation and competitiveness
- Draft version of the document is already developed
- Document is expected to be approved in the end of 2023

Renewable Energy Policy

- Amendment to the RE law according to the Revised RE Directive (2018/2001/EU) is being developed
- 8 by-laws defined by RE law is already approved
- Working on remaining by-laws is ongoing

Energy Efficiency Policy

- Amendment to the law on Energy Efficiency according to the Revised EE Directive (2018/2002 /EU) is being developed
- 19 by-laws defined by EE laws is already approved
- Working on remaining by-laws is ongoing
- 9 Drafts of remaining by-laws has already been prepared

New Market Model

01.07.2020

01.07.2024

Simulated day-ahead market

Simulated balancing Market

ESCO and the Transmission System Operator continue to perform the functions assigned to them

Intra-Day Market

Day-ahead market

Market of bilateral agreements

Balancing and supporting services market

Provision of wholesale public services by ESCO

GENEX

GSE

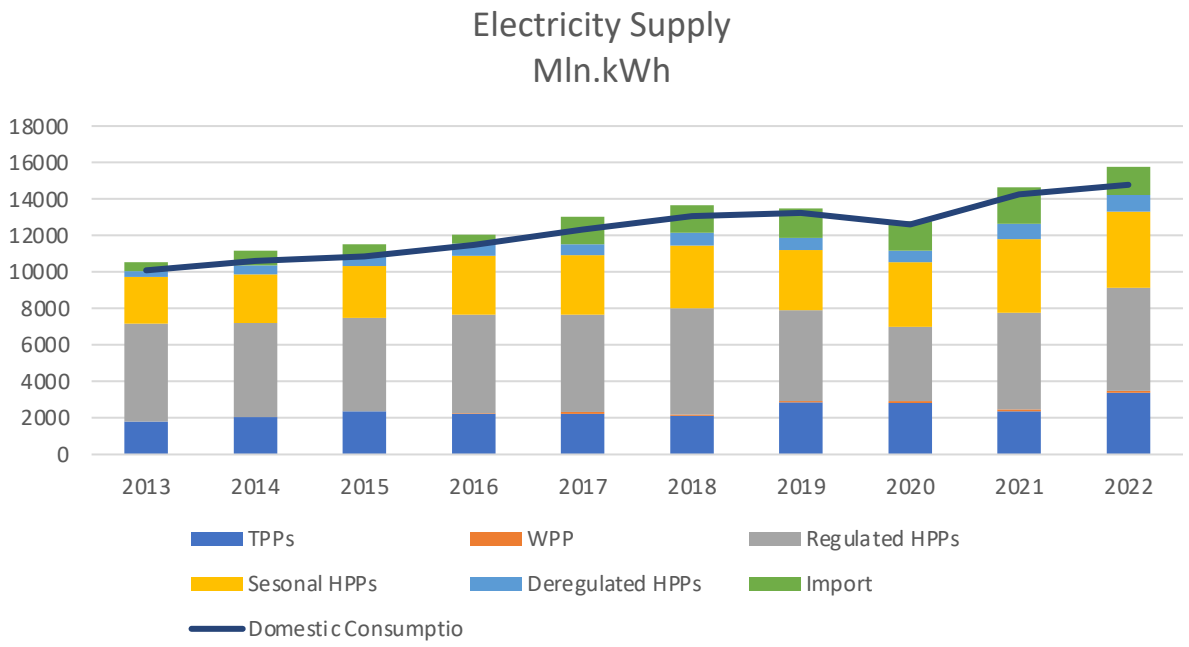
ESCO

Current Energy Balance

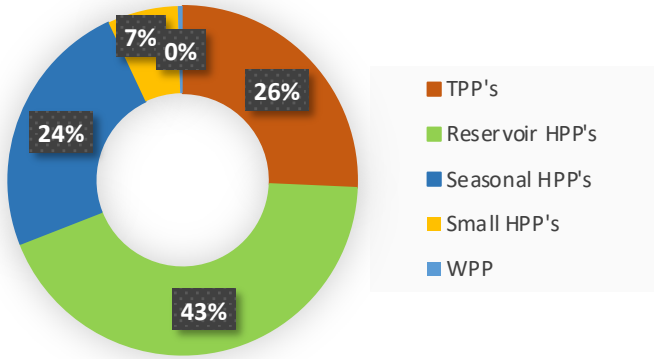
- The installed capacity of the energy system of Georgia - 4 596 MW

Including:

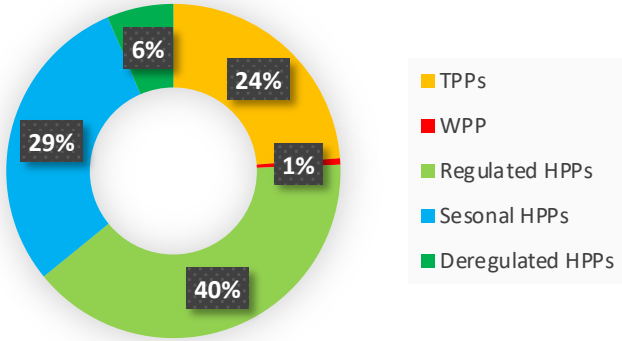
- *Hydro plants - 3 394 MW*
- *Wind power plant - 20.7 MW*
- *Thermal power stations - 1 181.4 MW*



Installed Capacity - 2023



Electricity Generation 2022

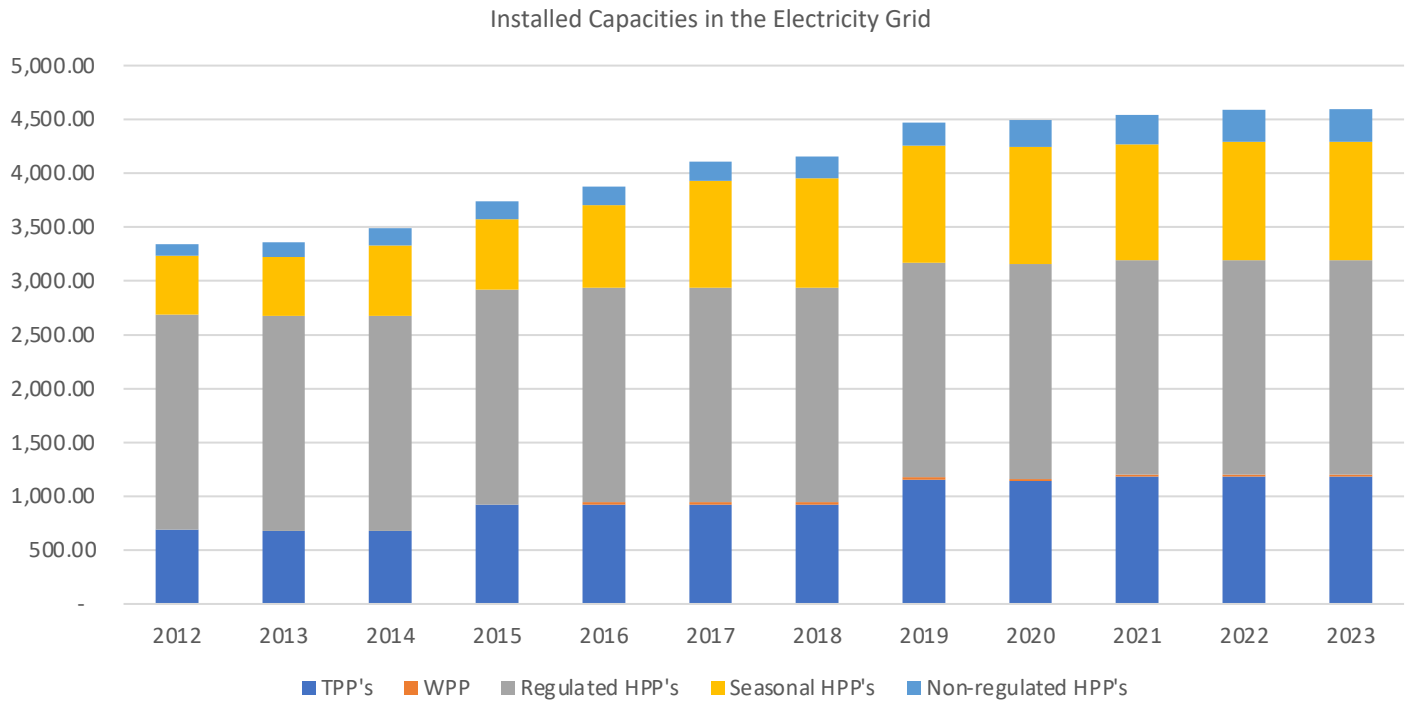


HPP’s Commissioned between 2012-2022

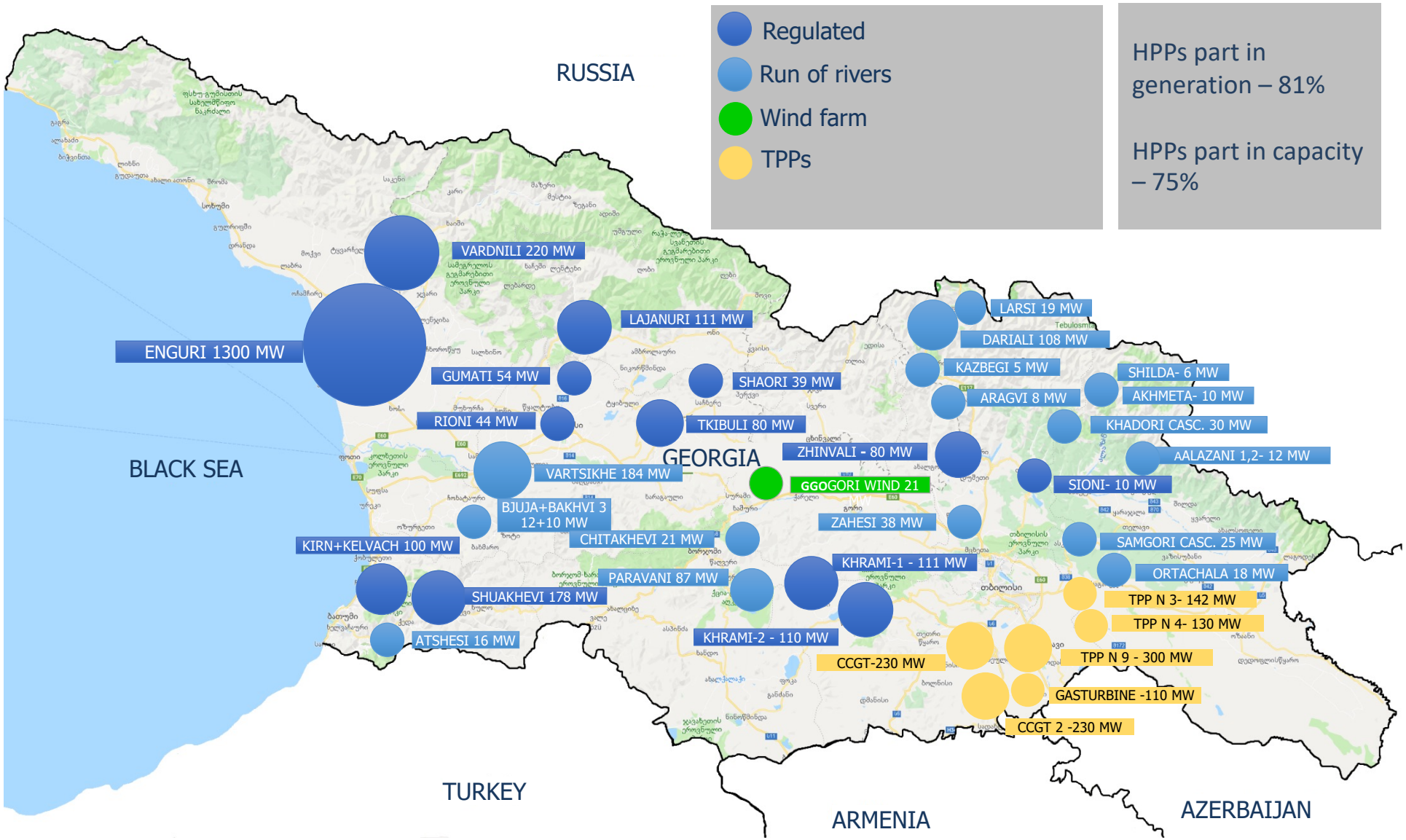
- **Since 2012, 66 Power Plants have been put into operation**
  - *Total installed capacity – 1211 MW*
  - *Total annual generation - 6326 GWh*
  - *Total investment - 1.901 bln $*

Including:

- **63 HPP’s**
  - *Total installed capacity – 729.19 MW*
  - *Total annual generation – 3037.9 GWh*
  - *Total investment - 1.452 bln $*
- **2 TPP’s**
  - *Total installed capacity - 461,2 MW*
  - *Total annual generation - 3200 GWh*
  - *Total investment - 415 bln $*
- **1 WPP**
  - *Total installed capacity - 20.7 MW*
  - *Total annual generation - 88 GWh*
  - *Total investment – 34 bln $*



Power Plants in Georgia



Renewable potential of Georgia

- There are about 26 000 rivers and around 300 of them are significant in terms of energy production
- Economically justified potential of the country's hydropower resource is about 40 billion kWh, of which only 30% is utilized
- The total annual potential of wind energy is estimated at 4 TWh, and the installed capacity - at 1500 MW
- The operating wind duration (depending on the geographical location and seasons) varies from 1400 to 7100 hours per year
- Annual duration of sunlight is about 1900-2200 hours
- Annual total solar radiation varies in the range of 1300-2500 kWh/m² (depending on region)

Development from PPA to CFD support scheme

Different support schemes existed at different times in terms of the development of power plants.
The country used to have a guaranteed purchase mechanism **(PPA)** under which the tariffs for power plants were determined in advance.

The Law of Georgia on **Public-Private Cooperation (PPP law)**, which came into effect on July 1, 2018, and the Resolution of the Government of Georgia dated August 17, 2018 N426 on the approval of the rules for the development and implementation of the Public-Private Cooperation project. According to the mentioned law, the company can request a guaranteed electricity purchase tariff.

"Support Scheme for Production and Use of Energy from Renewable Sources" N403 Resolution of GoG defines measures supporting the construction and operation of a power plant with an installed capacity of more than 5 MW working on renewable sources in Georgia by a private initiator.

- ✓Support period - **10 years, 8 months (Sep-Apr)** after starting the commissioning according to the applicable law;
- ✓Premium tariff up to **1.5 $ cents per kW/h**;

Important note: After the introduction of new RES support scheme, this mechanics is no longer active.

RES new scheme CfD (Variable Premium) is based on competition and market principles, which will contribute to the development of the energy sector of Georgia. Development of projects under the mentioned scheme will be carried out in accordance with the PPP legislation. The capacity auction will be held for upcoming 3 years in several lots, for a total amount not exceeding **1500** MW.

- Hydro power plants - 950 MW
- Wind power plants - 250 MW
- Solar power plants - 250 MW
- Other renewables (Hydrogen, biogas, biomass, geothermal etc.) – 50 MW

The abovementioned capacities will be auctioned in three phases (in proportion to the different technologies):

- Phase I - 300 MW (2023)
- Phase II - 400 MW (2023-2024)
- Phase III - 800 MW (2024-2025)

Support conditions

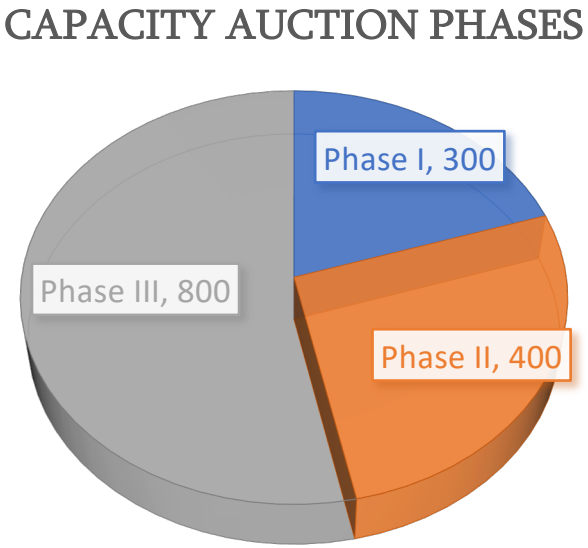
Tariff: -- US cents/kWh - **only price component is open**

Support period: 15 years

- Hydro power plant - 8 months (September - April)
- Wind power plant - 9 months (August - April)
- Solar power plant - 12 months

Capacity Auction

- The first auction for 300 MW installed capacity announced on February 10, 2023, has already been completed
- Totally received 78 proposals for 943 MW
- As a result of review and evaluation 27 companies have been identified as winners
- 300 MW were distributed as follows:
  - 150 MW for Hydropower plants (run-off river),
  - 70-70 MW for Wind and Solar power plants
  - 10 MW for other renewable energy power plants*

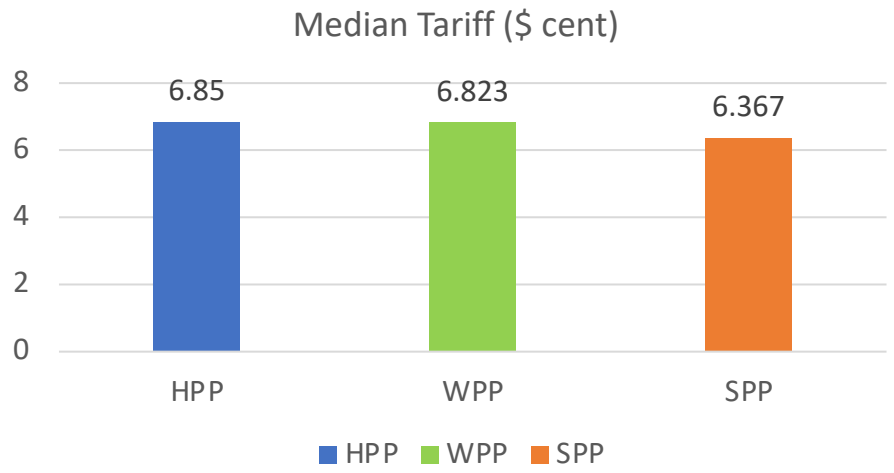


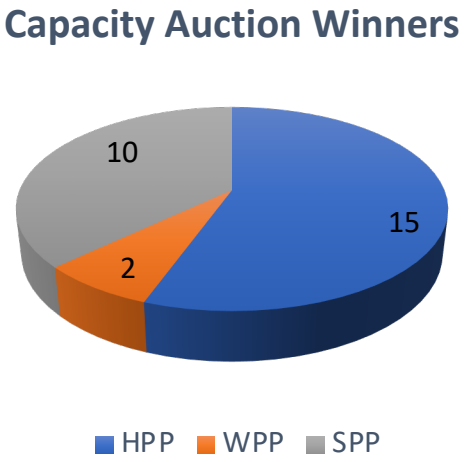
*As other renewable energy projects were not presented in the auction, 10 MW distributed to wind and hydropower plants.

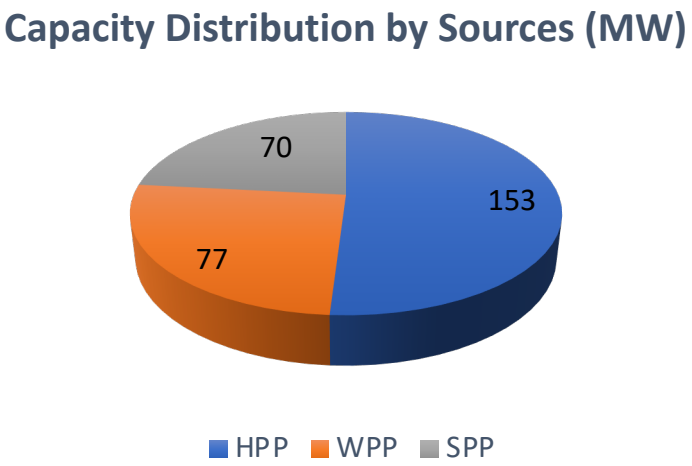
Capacity Auction

- The median tariff was established as follows:
  - Hydro power plants - 6.850 USD cents
  - Wind power plants – 6.823 USD cents
  - Solar power plants - 6.367 USD cents

- As a result of review and evaluation 27 companies have been identified as winners







Thank You !

Any Questions?