

# Renewable Energy in South Caucasus: What Are Development Prospects and Sectorial Obstacles?

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## EcoLur

What are the development trends in the renewable energy sector in the South Caucasus, what are the problems and challenges to overcome in order to minimize the negative impact on the environment? These and other

questions were discussed in on February 25-26, 2020, in Tbilisi within the framework of the workshop entitled "Environment, Climate and Sustainable Energy in the South Caucasus". The experts from CEE Bankwatch International Network, Georgia, Armenia and Azerbaijan made presentations for civil society representatives and journalists from Georgia, Armenia and Azerbaijan on international and local developments in the field of energy.

During the panel entitled "Renewable Energy in the South Caucasus: Problems, Challenges and Prospects", the expert of EcoLur Informational NGO Victoria Burnazyan presented the trends and problems of renewable energy development in Armenia.

In particular, it was presented that 189 small HPPs with a total capacity of 375 MW operate in Armenia, and 26 small HPPs with a total capacity of 58 MW are currently under construction. Victoria Burnazyan noted that according to Hydropower Development Concept of Armenia, the total capacity of SHPPs should be 400 MW by 2036. Due to the SHPPs already under construction, this threshold will be exceeded. She also mentioned about "DzoraHEK" HPP with 26.4 MW capacity, which according to RA Government Decree 1300-A dated on September 8, 2011, increased the capacity of SHPPs to 30 MW, due to which "DzoraHEK" HPP has been included in the list of SHPPs

with the benefits of SHPPs.

Referring to large hydroelectric plants, the speaker said that Armenia has Sevan-Hrazdan Hydro Cascade with 560 MW and Vorotan Hydro Cascade with 404 MW. It is envisaged to build "Shnogh" HPP on the Debed River with 76 MW capacity, Meghri HPP with 100 MW on the Aras River and Loriberd HPP with 66 MW on the Dzoraget River.

Despite legislative reforms, a number of environmental issues in the hydropower sector have yet to be resolved:

- Absence of legislative requirement for environmental impact assessment of SHPPs with 0-1 MW capacity
- Non-transparent operation of SHPPs and insufficient level of supervision mechanisms
- Legally raising the SHPP capacity threshold to 30 MW
- Incorrect hydraulic calculations based on required volume intake
- Non-protection of the environmental flow and the practice of sufficient supervision over its volume
- Functional incompliance of fish passages and fish protection structures
- Continuous reduction of river biodiversity
- Low productivity of SHPP equipment
- Absence of legislative requirement for the installation of modern equipment
- Practice of construction of SHPPs in the water flow formation zones.

In regard to the developments and prospects of the solar energy sector it was mentioned that within the framework of "Energy Efficient" loan program, as of May 2019, 2685 solar water heaters and 101 solar photovoltaic systems were installed. 12 companies have already received a license for the construction of 10 MW solar plants, out of which 10 have been put into operation, 2 are under construction, and 27 companies have received a license for the construction and operation of 5 MW solar plants, out of which 10 are already in use.

There are currently 1640 solar autonomous power generators in Armenia with a total capacity of 25.9 MW. In addition, "Masrik 1" solar photovoltaic power plant is being built in Geghamaqar community, Gegharkunik Region, Armenia. Construction and operation of 5 more similar stations is envisaged. It was noted that Armenia has set a target of 2026 to increase the share of solar energy production to 10%.

For his part, the speaker of the workshop, the representative solar panel manufacturing company "Helios Energy Georgia" Tornike Darjania said that Armenia is the leader in the development of solar energy in the region. There are 3 wind power plants in Armenia with a total capacity of 4.14 MW.

### **Renewable Energy in Azerbaijan**

The total power generation capacity in Azerbaijan is 7556 MW, out of which the share of renewable energy is 1273 MW.

### **Renewable Energy in Georgia**

Hydropower is the top priority in the field of renewable energy in Georgia. According to Zviadi Gachechiladze, Deputy Director of the Electricity Department at Georgian Energy and Water Supply Regulatory Commission (GNERC), electricity in the country is generated at a total capacity of 4336 MW. Hydropower makes up 3160 MW, thermal power plants - 1155 MW, wind power plants - 20.7 MW and solar plants - 2 MW in the operating capacities. According to Gachechiladze, Georgia's hydropower potential is 15,000MW, wind potential is 1450MW, and solar power potential is 520 + 1033MW. Gachechiladze noted that Georgia has envisaged the implementation of 41 new projects with new wind, solar and hydropower projects with a total capacity of 1641 MW. There are currently 68 small, large and medium-sized HPPs operating in Georgia. Only in 2019, Georgia has put into operation 11 new small and medium-sized hydropower plants. Construction of new HPPs is planned in the future. Georgia has great potential to develop wind energy. Georgia's only Kartli wind power plant with a capacity of 20 MW still operates in Gori, Georgia's solar energy usage is still low. 101 solar power plants are operating in the country today. Currently, the solar energy sector in Georgia is on its stage of development. It is only under the focus of the private-sector organizations interested in solar energy in the business environment.

16:44 March 06, 2020