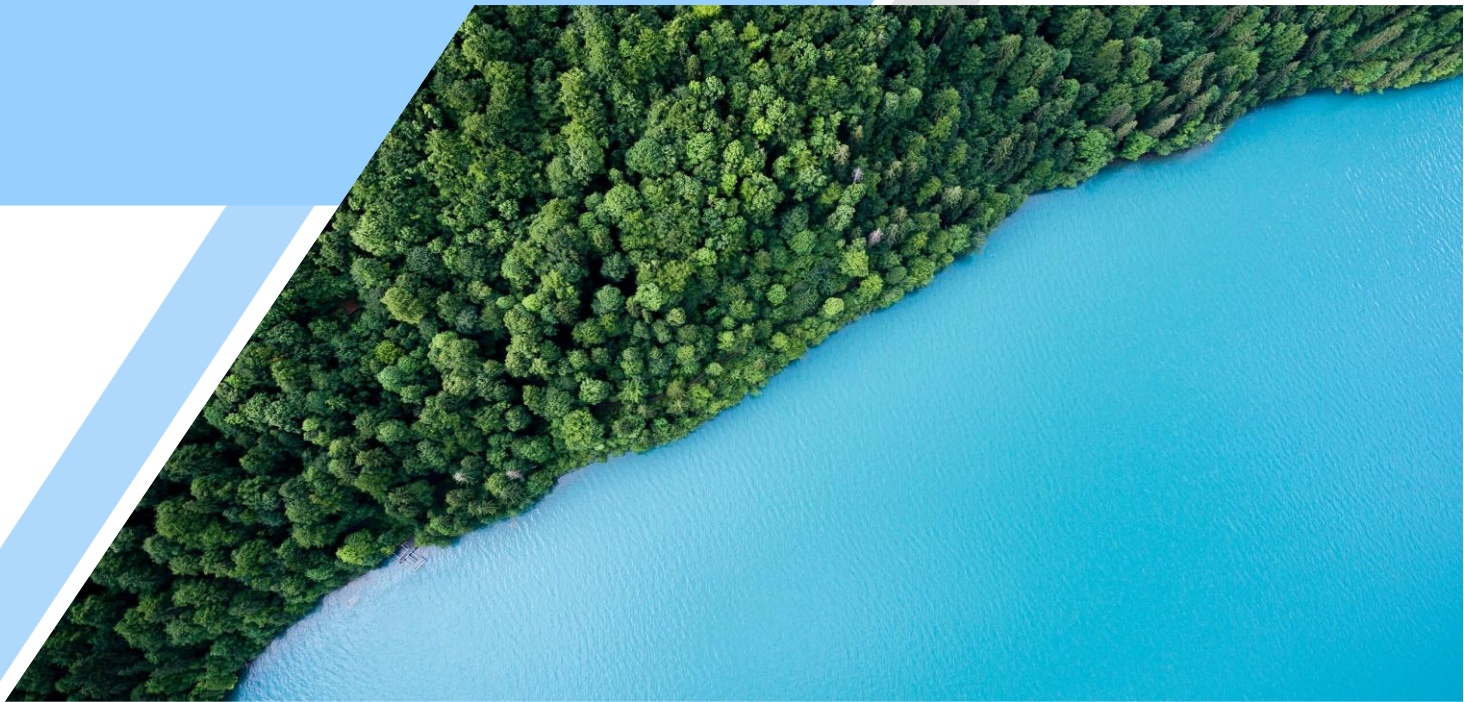


# Georgia Global Utilities

## Green Bond Allocation and Impact Report 2020



May 2021

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Georgia Global Utilities (GGU) is the key player in water utility and renewable energy sectors in Georgia, supplying potable water and providing wastewater collection and treatment services in the capital city of Georgia and its surrounding area, as well as generating clean energy by owning and operating 240MW installed capacity hydro and wind power plants across the country.

## Natural monopoly providing water supply and wastewater services to more than one-third of Georgia's population

GGU's water utility business represents regulated natural monopoly in Tbilisi (the capital of Georgia) and its surrounding areas, providing 24-hour potable water and wastewater supply services to c. 1.4 million residential and c. 37,000 commercial customers.

The water utility business's investments in infrastructure significantly improve the quality of water supply and wastewater services to its customers, as well as contributes to achieving operational efficiencies. 2017-2019 were the most capital-intensive years in which the business invested more than GEL 400 million to upgrade aging water supply network and develop substantial new water utility infrastructure. During 2017-2020 the business rehabilitated c. 500 km of water and wastewater network, delivered c. 700 million m<sup>3</sup> of potable water to end customers and connected over 16,200 additional customers to the water and wastewater network.

Through efficient capital expenditures, the water utility business also managed to reduce self-produced electricity consumption by c.27% (by 64 GWh) from 2017 to 2020 and free up electricity generated by hydro power plants linked to water utility business for the market sales.

## One of the largest players in the deregulated electricity market in Georgia

In addition to owning full-cycle infrastructure of water supply and wastewater treatment services, GGU also manages 240MW installed capacity commissioned hydro and wind power plants. GGU generates clean energy through the ownership of eight power plants (in total 219MW installed capacity) and the only wind farm in Georgia (21MW installed capacity). Up to 150MW HPPs out of 219MW are linked to water utility services – portion of power generated by these power plants are mainly used for water utility business's internal consumption to power its water distribution network, while the remaining electricity is sold on the market.

In 2020, the renewable energy business generated over 450 GWh clean energy for Georgia.



Photo: Works conducted by GWP  
(the largest subsidiary of water utility business)

## Our sustainability areas:

GGU believes its business model has an important role to play in the transition toward a more sustainable and lower-carbon economy in Georgia, both through the current investment portfolio and future investments. The environmental objectives of GGU are part of its overall strategy, and are implemented in two main areas:

- Water quality and water resource management; and
- Climate and energy

GGU recognizes the main environmental objectives for its green projects across the following categories:

1. Renewable energy
2. Energy efficiency
3. Pollution prevention and control
4. Sustainable water and wastewater management
5. Climate change adaptation



In July 2020, GGU issued USD 250 million debut green bonds from Georgia and aligned its [Green Bond Framework](#) with International Capital Market Association (ICMA) Green Bond Principles. Proceeds from the bonds were used to refinance outstanding indebtedness of the issuer, as well as finance future capital expenditures in water utility business.

Given green bond impact report provides an update to investors on both the allocation of funds, as well as environmental and social benefits of GGU's eligible green project categories.



Photo: Qartli Wind Farm

## Independent review

In 2021, GGU engaged Sustainalytics to review the projects funded through the issued green bonds and provide an assessment as to whether the projects met the Use of Proceeds criteria and the Reporting commitments outlined in GGU's Green Bond Framework. Sustainalytics's annual review report can be found on our [website](#).



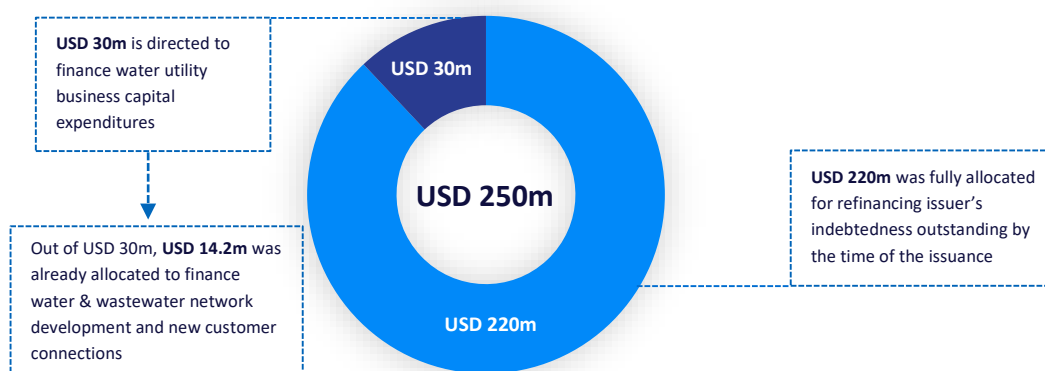
# Allocation Overview

## Green bond use of proceeds & allocation

GGU raised USD 250 million by its inaugural green bonds, out of which:

- ✓ USD 220 million was used to refinance issuer's outstanding debt portfolio fully, which was obtained to finance water utility business's capital expenditures, as well as investments in renewable energy assets
- ✓ USD 30 million is being allocated towards financing capital expenditures in the water utility business with the focus on network development and connecting new customers to the water supply network

The chart below summarizes uses of proceeds, as well as depicts proceeds already allocated to the green eligible projects. Unallocated amounts are held in bank deposit accounts and GGU intends, on a best effort basis, to utilize the unallocated proceeds within two years from the date of the issuance.



## ALLOCATION SNAPSHOT

Allocation type	Business	Eligible Categories	Allocation amount	Allocation status
Refinancing	Renewable energy	Renewable energy Climate change adaptation	USD 95,000,000	Fully allocated
	Water utility	Sustainable water & wastewater management Pollution prevention and control Energy efficiency	USD 125,000,000	Fully allocated
Financing	Water utility	Sustainable water & wastewater management Pollution prevention and control	USD 30,000,000	USD 14,159,652 allocated
<b>Total</b>			<b>USD 250,000,000</b>	<b>USD 234,159,652 allocated</b>



# Environmental and social impacts



## WATER UTILITY BUSINESS

### - Network development and new connections

Certain parts of the water supply network in Georgia date back to the Soviet period and are in poor condition. As a result, disruptions to the water supply have historically been frequent and water losses have been relatively high. GGU's water utility business has been investing in its water supply network, including in order to fulfil its privatization obligations. 2017-2019 were the most capital-intensive years for the business, in which GGU invested more than GEL 400 million to upgrade existing and develop substantial new water utility infrastructure. Capital expenditures have been intended to improve the quality of water supply and sanitation services to customers and contribute to operating efficiencies as well. GGU's water utility business is the only water utility company in Georgia, which provides to its customers 24-hour uninterrupted water and wastewater services.

During 2017-2020 years, water utility business has rehabilitated 422km of water network, 78km of wastewater network and connected over 16,200 new customers. Network rehabilitation and development has improved water supply and sanitation services, as well as significantly contributed to water resource efficient management and usage. Capital expenditures program of water supply network has been the main driver to reduce water losses (see chart on p.7), as well as achieve operational efficiencies in terms of reducing self-produced electricity consumption (see chart on p.7).

Water and wastewater network capital expenditures during 2017-2019 were financed by corporate loans attracted from international financial institutions and local commercial banks and part of green bond proceeds were directed to fully refinance these loans.

Uses of proceeds also include USD 30m that was earmarked by GGU's management to finance water and wastewater network development and new customer connections. USD 14.2m of these proceeds were already utilized in 2020, after green bond issuance, out of which USD 7.3m was allocated to finance new customer connections and USD 6.9m – for water and wastewater network rehabilitation.

Respective KPIs achieved can be observed on p.6.



Photo: Works conducted by GWP  
(the largest subsidiary of water utility business)

### - Metering programs aimed at optimizing water usage and electricity resources

During 2017-2020 GGU's water utility business elaborated and implemented metering program, targeted for the areas of Tbilisi and surrounding area, where the water consumption by the customers was excessive, resulting in high level of electricity usage to pump the water to end customers. Back in 2016, the business implemented a milestone project that entailed dividing Tbilisi into several elevation zones and monitoring the water supply and losses per each zone. Based on performed monitoring, target areas with excess water usage and water losses were identified and efficient metering program was elaborated.

During 2017-2020 the company installed 104,022 water meters to end customers, out of which 32,100 were smart water meters. Metering program enables the company to take readings remotely, continuously monitor the condition of water pipes, identify various pipe damages, such as burst, leakage and etc. On the other hand, customers also benefit from a better understanding of their own usage, reducing unnecessary consumption and lowering their water utility bills.

Over 2017-2020, the company managed to increase metered residential customer base from 25% to 41%, while 100% of commercial customers are metered. Part of proceeds raised from green bond were directed to refinance corporate loans obtained to complete metering works.

### - Energy efficiency

Over the past several years, the main focus of GGU's water utility business was to reduce the electricity generated by hydro power plants owned by GGU. The business implemented several capital programs, such as - installation of water flow meters, water pressure loggers and internal electricity consumption meters, as well as the introduction of technologies such as Geographic Information System (GIS) and Supervisory Control and Data Acquisition (SCADA) systems. These measures contributed to reducing self-produced electricity consumption by c. 27% over 2017-2020 and as a result, an average energy consumption of GGU's water supply network was 0.41 kwh per cubic meter of water production in 2020.

Moreover, GGU under its continuous improvement programs monitors fuel and electricity consumption also to report on CO<sub>2</sub> eq. emissions. 2020 CO<sub>2</sub> emission of GGU was c. 25,000 tons of CO<sub>2</sub> eq. emission.

For better energy management, during 2020, GGU updated its Energy Efficient Plans in line with "IFC Good Practice Note: Environmental, Health, and Safety Approaches for Hydropower Projects" (published in March 2018). Updated plans cover organizational commitment, energy management team, facility assessments, sustainable energy management and implementation plan. Equipment upgrades to improve energy efficiency and reduce energy use are also part of EE measures for GGU HPPs.

# Environmental and social impacts

## - Pollution prevention and control

GGU identifies and strictly follows the arrangements necessary to prevent pollution of water, air and soil. Pollution prevention, spill prevention, and waste management plans are developed and introduced for all GGU companies and their contractors in compliance with the IFC PS3 and the WB General EHS Guidelines. The given documents are developed pursuant to the GGU Environmental and Social Policy Framework and GGU ESMS, and based on the following principles: no pollution of water, soil and air (including dust and noise).

The pollution prevention and control measures at GGU are implemented for the following components: wastewater and storm-water management, spill prevention and control hazardous materials storage and handling, air emissions management, dust control and noise management.

The following KPIs are ensured for all GGU operations: no uncontrolled storm-water or wastewater runoffs or erosion on GGU's sites/facilities,

no spills and/or contamination on-site, no spills/contamination by hazardous materials or chemicals on-site, no complaints regarding air emissions and dust from the population within the respective municipalities area.

Gardabani Wastewater Treatment Plant, owned and operated by GGU, serves Tbilisi and its surrounding area. Gardabani WWTP insures treatment and discharge of on average 164,687,177 m<sup>3</sup>/y wastewater into the transboundary river Mtkvari, as well as 11,162 m<sup>3</sup>/y sludge treatment, according to the international standards.

Gardabani WWTP was modernized and rehabilitated in 2018, mainly financed by the corporate loans attracted from international financial institutions. Part of the proceeds raised from green bonds were allocated to fully refinance debt facilities obtained for financing WWTP modernization.



## Sustainability KPIs achieved by above-mentioned capital expenditures

### Green bond proceeds - refinancing

- ✓ 422km of water and 78km of wastewater network rehabilitation during 2017-2019
- ✓ 12,801 connection of new customers during 2017-2019
- ✓ Water loss ratio reduction from 71% to 62% over 2017-2020 years, mainly supported by technical water loss reduction of 110 million m<sup>3</sup> during the same period
- ✓ 27% reduction in self-produced electricity consumption over 2017-2020 years
- ✓ On average c. 1.4 m<sup>3</sup> less water consumed per household per day with the help of metering program
- ✓ Reading process efficiency achieved by reducing reading periods from 14 to 2 working days with the help of smart meters
- ✓ Rehabilitation of Gardabani WWTP, ensuring the treatment of on average 164,687,177 m<sup>3</sup> of wastewater and 11,162 m<sup>3</sup> sludge per year

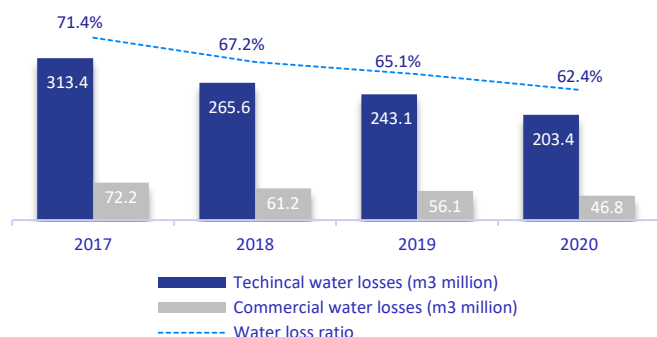
### Green bond proceeds - financing

- ✓ Rehabilitation of water and wastewater network:
  - Upgrade of 140 km water and 52 km wastewater network
  - Annual reduction of water losses of c. 3.2 million m<sup>3</sup>
  - Prevention of soil contamination and underground water pollution
- ✓ Connection of 2,862 new customers to uninterrupted water supply and wastewater services

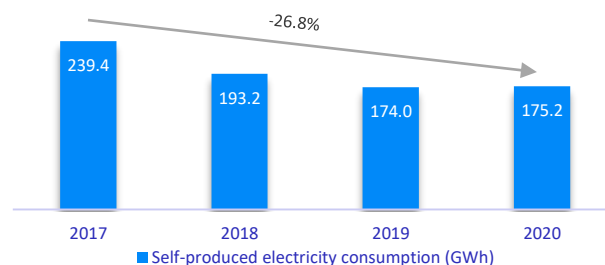


# Environmental and social impacts

Water loss ratios



Self-produced electricity consumption (GWh)



## RENEWABLE ENERGY BUSINESS

GGU's renewable energy business integrates the generation and transmission of energy from renewable sources such as hydro and wind. GGU owns and operates 240MW installed capacity power plants – eight hydro power plants of 219MW installed capacity and the only wind farm in Georgia of 21MW installed capacity. Up to 150MW HPPs out of 219MW are mainly linked to water utility services – portion of power generated by these power plants are used for water utility business's internal consumption to power its water distribution network, while the remaining electricity is sold on the market.

Through its renewable energy projects, GGU aims to contribute to the Government's declared plan to reduce its greenhouse gas (GHG) emissions by 15% below the business as usual scenario for the year 2030, which is equal to a reduction in emission intensity per unit of GDP of approximately 34% by 2030, compared to 2013 levels.

Part of proceeds were directed to fully refinance project finance loan arrangements, obtained by GGU to finance the development and maintenance of its hydro and wind power plants.



Power plant	Installed capacity	Type of power plant
Zhinvali HPP	130.0 MW	HPP with the reservoir
Tetrikhevi HPP	12.4 MW	HPP built on water infrastructure
Saguramo HPP	4.2 MW	HPP built on water infrastructure
Bodorna HPP	2.5 MW	HPP built on water infrastructure
Mestiachala HPP	50.0 MW	Run-of-river HPP
Debeda HPP	3.2 MW	Run-of-river HPP
Akhmeta HPP	9.1 MW	Run-of-river HPP
Kasleti HPP	8.1 MW	Run-of-river HPP
Qartli Wind Farm	20.7 MW	Onshore WPP
<b>240.2 MW</b>		

# Environmental and social impacts

## - Climate change adaptation

The proper functioning of early warning system was tested and ensured during 2020 for Zhinvali HPP. The real time monitoring measurements are used to design the detection portion of the early warning system and develop a response plan for making decisions during a developing condition, including when to activate the notification system for evacuation.

In the event of an emergency, when one or more specific thresholds are exceeded, the system automatically alerts the people of the imminent potential natural disaster.

The system allows identification of a number of alternative scenarios based on filtering the data measured by the sensors installed in the field and makes it possible to reduce failed or false alarms to the minimum.

When the alarm conditions set by the user are recognized, the system can activate acoustic (sirens) warning devices by wireless transmission systems.

In addition to audio alarm devices, the network can also send out warnings in the form of either vocal synthesis or text messages to operators, responsible for monitoring and to the population, under potential threat.

In case of emergency, the system alerts the population by the means of sirens. In addition, the network has an instant mobile messaging service that sends text messages to pre-warn the risk threshold.

In addition, the advance warning system is automatically switched on when the flow in the lower stream of the Zhinvali reservoir is drastically increased (which according to the EIA report is 400 m<sup>3</sup>/s). Also, for safety reasons, in case there is the need to increase the flow in the lower stream of the reservoir to 30 m<sup>3</sup>/s and more, the system is activated automatically. In the event of a disaster, the pre-notification system warns the settlements and organizations in the Aragvi River Valley (downstream of the Zhinvali HPP), which means the protection of a total of 30,000 to 50,000 people. The number of people in the valley varies according to the seasons.

Climate change adaptation measures were also introduced at Kasleti HPP. In particular, protective dam is part of HPP's infrastructure, which prevents the access roads from potential damages, which might be caused by the excess water in the riverbed.

## 2020 Sustainability KPIs:

### Green bond proceeds - refinancing

- ✓ 93,100 CO<sub>2</sub> eq. emission avoided in tones
- ✓ 457.8 GWh renewable energy generation
- ✓ Over 126,000 households served with clean energy



Photo: Zhinvali HPP



## Social impacts in renewable energy business

OUTPUT	IMPACT
<b>EDUCATION</b>	
Number of textbooks and teaching materials supplied	<b>Mestiachala HPP:</b> Mestia Municipality and public center was supplied with books <u>685 beneficiaries</u> .
Number of people with a rare disease being provided access to services and adequate medication	<b>Mestiachala HPP:</b> The rehabilitation center for disabled persons in Mestia Municipality was constructed
Number of education facilities and/or initiatives	<b>Mestiachala HPP:</b> Supporting the establishment of the vocational education center in the Mestia Municipality for <u>400 beneficiaries</u>
Training/Volunteering	<b>Mestiachala HPP:</b> Introduction of training program for eco-tourism development in Mestia Municipality for <u>50 beneficiaries</u> <b>Kasleti HPP:</b> Training opportunity for young volunteers in construction works
<b>TRANSPORT &amp; SUSTAINABLE INFRASTRUCTURE</b>	
Kilometers of feeder roads rehabilitated/constructed	<b>Mestiachala HPP:</b> <ul style="list-style-type: none"> <li>New road: <u>2 km</u></li> <li>Road rehabilitation: <u>4 km</u></li> </ul> <b>Kasleti HPP:</b> <ul style="list-style-type: none"> <li>New road: <u>2km</u></li> </ul> <b>Akhmeta HPP:</b> <ul style="list-style-type: none"> <li>New road: <u>4 km</u></li> </ul>
Sustainable infrastructure initiatives:	<b>Kasleti HPP:</b> <u>2 indoor stairs</u> were renovated in the Khaishi Public School <b>Mestiachala HPP:</b> Folklore Theatre in Mestia Municipality was rehabilitated for <u>14 248 beneficiaries</u> <b>Kasleti HPP:</b> Taking into consideration the needs of the local community <u>3 gabions</u> in different locations of Khaishi and Lower Tsvirmindi was constructed contributing to the safety of local roads
<b>EMPLOYMENT GENERATION</b>	
Number of local employment opportunities created	<b>Mestiachala HPP:</b> 11 local employees <b>Kasleti HPP:</b> 6 local employees <b>Akhmeta HPP:</b> 11 local employees <b>Debeda HPP:</b> 7 local employees <b>Qartli WPP:</b> 6 local employees  <b>In total: 41 local employees</b>

# Green Bond Framework Summary



**Uses of proceeds** – green bond proceeds are allocated to finance/refinance projects with clear environmental benefits. Project categories include sustainable water and wastewater management, climate change adaptation, renewable energy, energy efficiency and pollution prevention and control.



**GGU established a Green Bond Committee**, which meets on a quarterly basis and is comprised of cross-functional representatives. The Green Bond Committee inter alia is responsible for:  
1) ensuring the proposed allocations are aligned with the relevant GGU policies concerning project development; 2) ensuring the proposed eligible green projects are aligned with the categories and eligibility criteria as specified in the use of proceeds; 3) reviewing and approving allocation and impact reports.



**Management of Proceeds** – GGU established a register of eligible green projects and tracks allocations to the projects matched to the green bond proceeds. Pending allocation, proceeds are held in cash deposits in the banks in accordance with the relevant internal policies.



**Reporting** – GGU has committed to providing an annual allocation and impact report. Where feasible, impact reporting will provide relevant environmental impact metrics. Until full allocation, GGU commits to provide an annual review conducted by an external auditor.



Photo: Qartli Wind Farm

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