

Bringing Ideas to Life

Gross Energy Group

Company Gross Energy was established in 2007; since November 2009 it is functioning as Gross Energy Group. Founder members are famous energy specialists, engineers and executives. The team members are of standing reputation and have a long and successful experience in research, designing, construction, supervision, monitoring and management spheres.

Content

Company Profile	1
Company Structure	2
Services	3
Geology & Drilling	4
Key Geological Contracts	5

Company together with international and local companies has prepared range of new potential hydropower projects for the investors for further development.

This project was commissioned by the Ministry of Energy of Georgia and comprises 97 small and medium size HPPs.

(http://energy.gov.ge/investor.php?lang=eng&id_pages=19)





1

**Company
Profile**

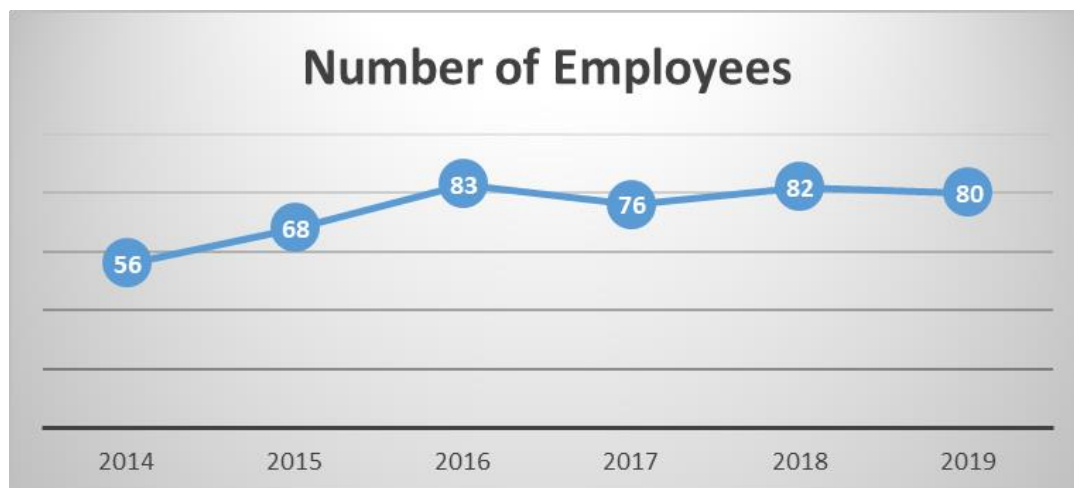
Company Profile

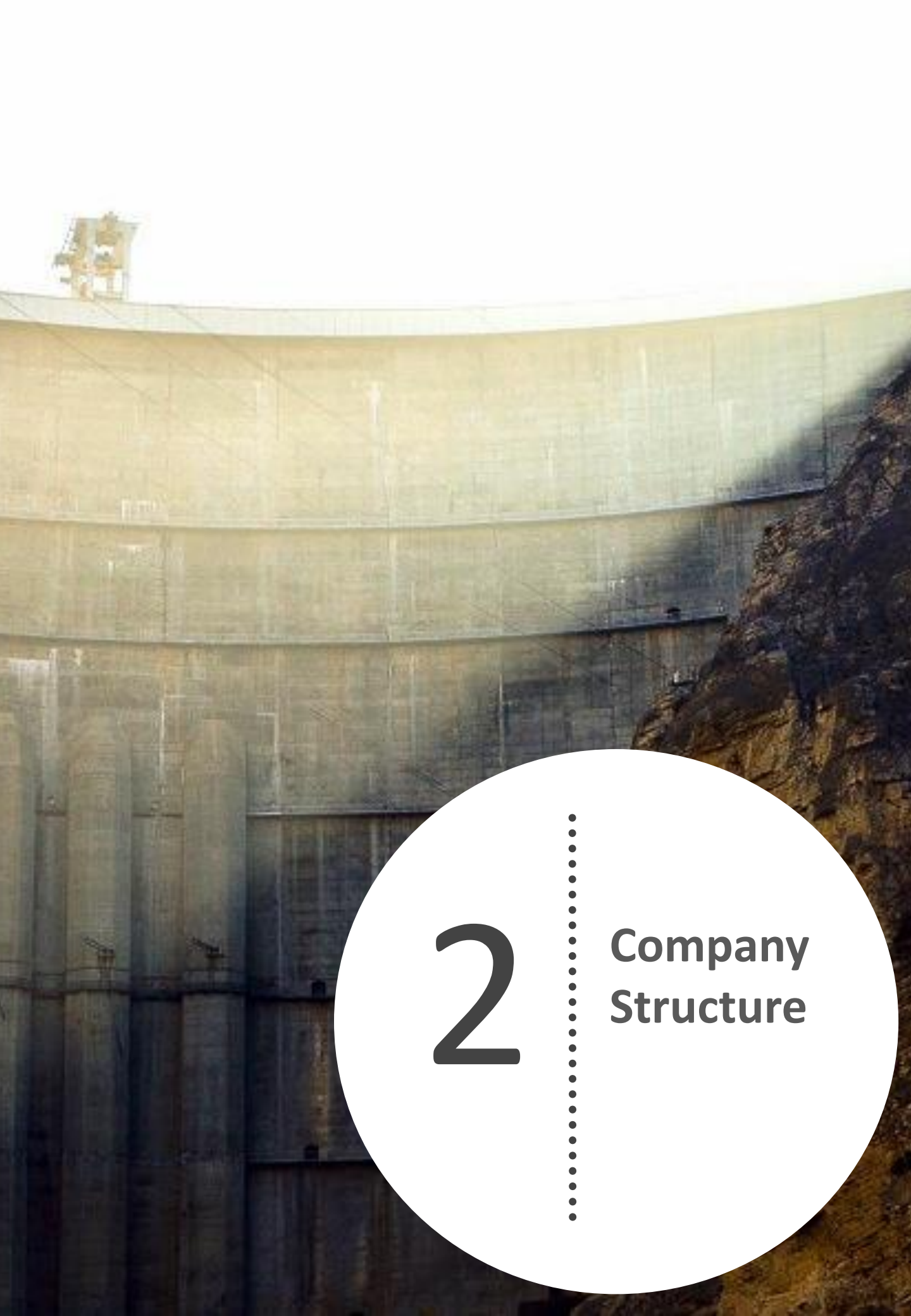
Main Activities of the company are:

- ✓ Multipart evaluation of energy and infrastructure sectors, assessment of further development and its influence on economic expansion, environmental and social spheres.
- ✓ Considering the systems of construction, management and financing, for separate sites as well as for the whole energy and infrastructure sector in order to identify the feasibility and duration of functioning of the sector.
- ✓ Preparing design and regulatory documentation - including technical, commercial, financial, ecological, organizational, social and etc. as well as its adaptation to marketing conditions.
- ✓ Prepare and expertise the layout of emergency situations, conception of engineering-technical documentation.
- ✓ Engineering and consulting services, preparation of investment proposals and business plans for construction of hydropower and water management sites.
- ✓ Economic and financial risk assessment and creation of insurance policy.
- ✓ Environmental and Social consulting services for various projects.
- ✓ Attracting financial sources for investments, cooperation with local and international financial and public institutions.
- ✓ Company envisions fulfillment of different projects in accordance with the state regulation in order to increase the company activity spheres.

The team members

There are 55 qualified team members, who have been participating in the development and construction of various projects including Enguri Arch Dam, Zhinvali Hydro complex, Vartsikhe HPP, Shuakhevi HPP.





2

Company
Structure

Core Team

Mr. Anguli Tkebuchava - General Director, with more than 35 years experience in research, projection-consulting and construction companies. Owner of Gross Energy Group.

Ms. Sophie Chichaghua - Deputy General Director, with more than 20 years experience in project management, consulting and data analysis in Georgia as well as in other countries.

Mr. Irakli Tkebuchava – Chief Financial Officer, with more than 10 years experience in project financing, management and consultancy. He has successfully completed financial closure of several projects.

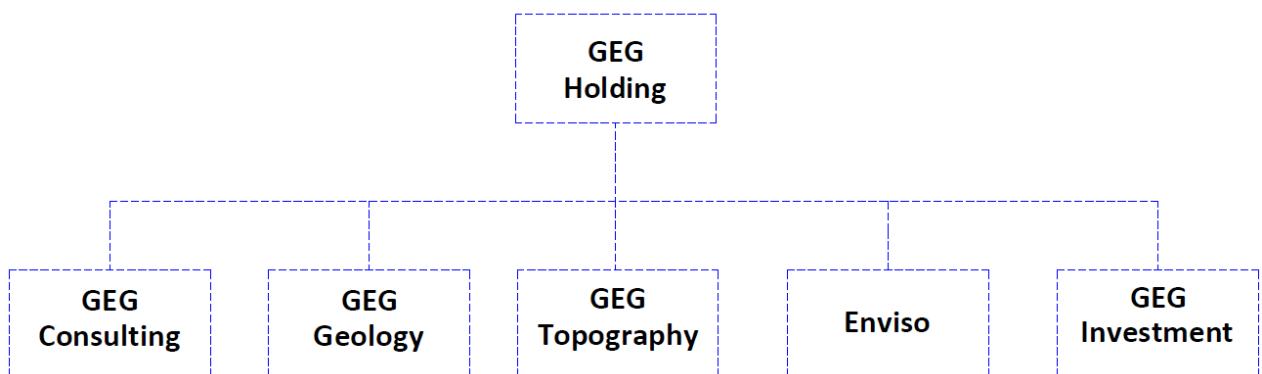
Mr. David Tkebuchava – Chief Operating Officer, with more than 10 years experience in different fields including Property management, Recourses management, Asset monitoring, Purchasing and logistics,

Mr. Vazha Chumburidze – Senior Geologist, with more than 60 years experience in Engineering geological surveys. He has been a team leader in many significant projects developed within the country.

Mr. Zurab Tsomaia – Senior Geologist, with more than 40 years experience in engineering geological field. He has been involved in the development of more than 50 projects.

Mr. Aleksandre Ramishvili – Structural Engineer, with more than 35 years experience in engineering sphere. He has completed structural designs for various projects in different sectors.

Holding Structure





3



Services

General Services provided by the Company

- ✓ **Consulting Services (Feasibility; Due Diligence, Business Plan, Detailed Design, etc.);**
- ✓ **Design Services;**
- ✓ **Geodesic survey (Topography and act.);**
- ✓ **Geology (Drilling and casing, mapping, testing and act.);**
- ✓ **Geophysics and Seismic Survey;**
- ✓ **Construction Material Survey;**
- ✓ **Hydrological measurements, analysis, modeling and etc.;**
- ✓ **Transmission lines and energy evacuations;**
- ✓ **Environmental and Social Impact Assessments;**
- ✓ **Procurement planning;**
- ✓ **Construction and Construction Supervision;**
- ✓ **Commissioning and operation;**
- ✓ **Operation Monitoring;**
- ✓ **Support during Construction/ Operation/ Licensing and Environmental Permits;**
- ✓ **Lab Testing (geological, water and etc.);**
- ✓ **Independent Expertise of any kind of infrastructure project.**



4

Geology & Drilling

Company Gross Energy Group LLC has been providing geological/geotechnical services since the establishment;

Geological Department is led by honored Geologist Mr. Vazha Chumburidze and Academician Mr. Zurab Tsomaia. From 2007 till now company has performed hundreds of geological studies and site investigations, which was the bases for successful development of many projects and their further operation.



Atlas Copco

In order to expand and improve services, by the support of TBC leasing in 2016 company has purchased Atlas Copcos drilling rig – Boyles C5, which complies with local and international standards. It can drill as deep as 1400m and extract undisturbed core with double core sampler. The purchase of new drilling equipment created additional workforce and enabled company to offer additional services to the Clients. The full training of drilling experts and his assistants took place after purchase and we have also increased safety and security standards. Considering the above-mentioned, Gross Energy Group LLC offers different types of Geological services to its Clients including site investigation, geological mapping, data processing and etc.



GEO5 is a software suite, providing solution for majority of geotechnical tasks. Individual programs have the same user interface and communicate with each other, while each program verifies definite structure type.

GEO5 Solutions



Stability Analysis

Analysis of slope stability, rock slopes and MSE walls



Excavation Design

Design and verification of retaining structures, diaphragm and pile walls



Walls and Gabions

Complex design of gravity, cantilever and prefab retaining walls



Shallow Foundations

Bearing capacity and settlement of spread footing, strip footing and slabs



Deep Foundations

Bearing capacity and settlement of piles and pile groups



Settlement Analysis

Analysis of settlement and consolidation of foundation soil



Tunnels and Shafts

Analysis of tunnels, underground structures, and vertical shafts



Geological Survey

Terrain and subsoil modeling based on geological surveys



Field Tests

Analysis of structures based on field tests (SPT, CPT, DMT, PMT)



Atlas Copco boyles C5

URB



CBY



5

Key Geological Contracts

Key Projects since 2015

#	Client, Country	Name	Key Project Features	Completion Year
1	Energo-Pro Georgia Generation, Georgia	Zahesi HPP	Geological Survey of the Cut-through at the Dam site location of Zahesi HPP	Ongoing
2	Alpana Energy, Turkey	Anlapa HPP	Geotechnical Investigation including lab testing and geophysical investigations according to ToR presented by the Client	Ongoing
3	Golder Vi Ltd, Georgia	Geological Survey	Geotechnical investigation, test pits. Total Drilled - 26m, total pits - 15m	2020
4	Absolute Service Ltd, Georgia	Railway Station Area	Geotechnical investigation in the area of railway station, total drilled - 40m	2020
5	Absolute Service Ltd, Georgia	Geological Survey	Geotechnical investigation at the construction site, total drilled - 10m	2020
6	Absolute Service Ltd, Georgia	Khevi-Ubisa Road Construction	Geotechnical investigation for the construction of Khevi - Ubisa connection road, as well as laboratory testing of the extracted core samples. Total drilled - 615 meters	2020
7				
8	Hunan road and bridge construction company Ltd, China	Rikoti Highway Construction	Geotechnical field survey and lab testing	2020
9	GeoHolding & KSH Consortium JV, Georgia	Field and Design Services	Field work data collection for project site (Agro zone), including topography, engineering-geological survey, soil analysis, analysis of water, identification of Energy Resources, Infrastructure reports	2020
10	Phazisi Energy and Yenigun, Georgia	Metekhi 1 HPP	Geological Survey, Geological Mapping and Topographic Survey	2020
11	Phazisi Energy and Yenigun, Georgia	Metekhi 1 HPP	Seismic Risks Assessment	2020
12	Georgian Amelioration LLC, Georgia	Design Services	Detailed design for the rehabilitation of River Rioni channel in Poti	2020
13	Georgian Amelioration LLC, Georgia	Design Services	Detailed design for construction of new bridge at PK 82+17 river Rioni left channel; Engineering-Geological Survey	2020
14	Georgian Amelioration LLC, Georgia	Design Services	Detailed design for the rehabilitation of the Arakhlo and Ranchpari main channel	2020
15	Georgian Amelioration LLC, Georgia	Design Services	Detailed design for the rehabilitation of lower Samgori irrigation system left main channel, section I, G42 and Section II distributor	2020
16	Georgian Amelioration LLC, Georgia	Design Services	Detailed design for the rehabilitation of downstream of River Rioni water separator unit, close to Poti city, and detailed design for the rehabilitation of affected gabions along the right bank of the river Rioni	2020
17	Georgian Water and Power LLC, Georgia	Design Services	Detailed design for the rehabilitation of Gotua street sewage system	2020
18	Georgian Water and Power LLC, Georgia	Design Services	Ghrmaghele filter station rehabilitation project, including inventory, field survey (topography, geology, lab testing), structural survey, defining the corrosive state of the reinforcement, rigidity of structures, const estimates	2020
19	Dagi+ Ltd, Georgia	Geological Survey	Engineering-Geological Survey for three bridges for Tsesi-Uravi road project, including drilling, lab testing and preparation of Report	2020
20	Chiora Hesi Ltd	Chiora HPP	Field works, update of the Feasibility Study, Detailed Design Documentation	2020
21	GEO Power, Georgia	Dzegvi HPP	Geological Survey, drilling, lab testing	2020
22	MG Renewables, Israel	Field Survey	Topographic, geophysical and geological survey of Ghvanana HPP Site location	2019
23	Tahal Group B.V. Branch in Georgia	Geological Services	Provide the necessary geotechnical information required to design, build and install the 28 precast Pumping Stations for the Sewage system in Poti, including the execution of 1 drilling for each location, total 1200 meters	2019
24	IDC Ltd, Georgia	Geological Survey	Company performed geological survey with core extraction and installation of inclinometer in the borehole, 93 m depth	2019
25	IDC Ltd, Georgia	Geological Survey	Company performed geological survey with core extraction and installation of piezometer in the borehole	2019
26	GEO Power, Georgia	Dzegvi HPP	Geological Mapping of the project site, identification of geodynamic processes	2019
27	Institute IGH, Croatia	Road Design	Borbalo-Omaro Road Design	2019
28	Institute IGH, Croatia	Road Design	Lentekhi-Leshguani Road Design	2019
29	Institute IGH, Croatia	Road Design	Tsesi-Uravi Road Project	2019
30	Hereti Energy, Georgia	Pona and Chartali HPP	Feasibility Study	2018

Key Projects since 2015

31	Megawatt Representation Office in Georgia	Geological Survey	Geological Survey and Concrete Testing	2018
32	Institute IGH, Croatia	Geological Survey	Geological Survey for the Road projects	2018
33	JSC Energo-Pro Georgia Generation	Geological and Geophysical Survey	Engineering-Geological and Geophysical Survey for Lajanuri HPP; Preparation of the Report	2018
34	JSC Energo-Pro Georgia Generation	Geological Survey	Geological Survey of Lajanuri HPP Head unit downstream location	2018
35	X2 Development Ltd	Geological Survey	Field Geological Survey	2018
36	KOKO Architects, Estonia	Geological Survey	Geological Survey for the Tourist Centre Project at Enguri Arch Dam	2018
37	KOKO Architects, Estonia	Geological Survey	Geological Survey for the Tourist Centre Project at Enguri Arch Dam	2018
38	VM Electric, Georgia	Mtkvari Cascade 4 HPP	Preparation of the Feasibility Study based on the ToR signed with the Government	2018
39	IDC Ltd, Georgia	Geological Survey	Field Geological Survey: Drilling, Sample extraction, installation of the inclinometer	2018
40	Mtkvari HPP, Georgia	Mtkvari HPP	Geology, Topography, drawings, EIA	2018
41	MG Renewables, Israel	Dzama HPP	Dzama HPP project Design, field Survey: Topography, geology, geophysics	2017
42	Caucasus Wind Company, Georgia	Wind Farm	Engineering services for wind farms	2017
43	Caucasus Wind Company, Georgia	Wind Farm	Topographic Maps for wind farm projects	2017
44	Caucasus Wind Company, Georgia	Solar PV Project	Topographic Maps for Solar PV projects	2017
45	Rase Ltd, Georgia	Skuri HPP	Pre-Feasibility study report	2017
46	IDC Ltd, Georgia	Geological Survey	Field Geological survey: Drilling, extraction of the core samples, lab testing, preparation of the geological report	2017
47	Mtkvari HPP, Georgia	Mtkvari HPP	Due Diligence of the changes to the diversion tunnel and the transmission line project	2017
48	Levan Samkharauli National Forensics Bureau, Georgia	Engineering Services	Extraction of pit at different project location and chemical analysis of the ground water	2017
49	Institute IGH, Croatia	Abastumani Area	Geological survey	2017
50	GEO Power, Georgia	HPP on the river Kabali	Geological survey	2017
51	Phazisi Group, Georgia	HPP Cascade on the river Khaishura	Geological survey, ESIA	2017
52	Proenko, Ukraine	Tsablari HPP	Geophysical survey of the project area	2016
53	Hydro Development company, Estonia	Kintrishi HPP	Geological, hydrological and hydraulic survey; Headrace tunnel arrangement and supervision.	2016
54	Enteli LLC, Georgia	Oni HPP cascade on the river Rioni	Geophysical Survey	2015
55	Hydro Development company, Estonia	Magana and Lekarde HPP	Geology, Topography	2015
56	Adjaristsqali Georgia LLC, Georgia	HPP Cascade on the river Adjaristsqali	Hydro-Geological survey	2015



GEG

GROSS ENERGY GROUP

Address: 24 V. Dolidze Street, Tbilisi, Georgia, 0171

Tel/Fax: +995322399160

Tel: +995322399150

E-mail: info@geggroup.org

Web: <http://geggroup.org/>