

Where finance and green technologies meet

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Noteworthy GEFF projects in Georgia in 2021

2021 has been a challenging year, dominated by the pandemic from the very beginning. Both the public and private sectors were forced to adapt to a “new normal”, devising hybrid methods of socialising, working, and operating. The battle against the effects of the coronavirus has been a unifying challenge for all countries, and while caring for the health of its citizens has dominated the agenda, the Glasgow Climate Pact shows that the commitment of world leaders to mitigate the threats of climate change is still ongoing and relevant.

Despite the challenges faced during the year, GEFF in Georgia and its partner financial institutions have financed various projects that in one way or another help contribute to protecting the environment.

In the span of one year, GEFF in Georgia has financed projects in all its fields of focus.

Energy efficiency

GEFF has collectively helped avoid up to 1,000 tonnes of CO₂ emissions. One of the most notable projects in this regard was the construction of a new office building carried out by Vake Hill. This investment in thermal insulation, windows, doors, heating and cooling systems, LED lighting, and elevators will help the company save up to US\$ 54,000 in energy bills annually, saving 2,000 MW/h and avoiding 350 tonnes of CO₂ emissions.

Renewable energy

With the rise of commercial electricity rates, the importance of developing internal energy generation capacities has become a pressing issue for Georgian businesses. Numerous events dedicated to investments in solar energy organised by GEFF and its partner financial institutions have helped dispel the myth of the high price of these technologies. With a GEFF loan of US\$ 36,000, [Mego.ge](#), an online supermarket, has installed a fully functioning solar station that will help the company increase its energy independence and avoid the risk of fluctuations in commercial energy rates. What is especially noteworthy about this project is its short payback period of just a little over three years. In the long-term, the company can reinvest its savings into increasing the satisfaction of its employees and providing improved and faster service to its customers.

The case of [Mego.ge](#) illustrates that any business

can benefit from the financial gains offered by investments in solar energy. However, along with tangible financial results, generating one's own energy also offers intangible benefits. [JSC Graali-92](#), which has been in operation since 1936, is one of the first companies of significant size and history to invest in high-performing, modern technologies. A solar PV station will not only help the company cover almost 100% of its electricity needs, but also maintain its position as the market leader.

Resource efficiency

Increased consumption of resources results in the increased use of energy and increased GHG emissions. The latter is cited as one of the main contributors to climate change, which threatens the livelihood of individuals and the economies of all countries. The agricultural sector is most vulnerable to the risks of climate change. GEFF in Georgia is especially proud to participate in private sector projects that help businesses save resources and utilise their full potential.

[Agro Grain LLC](#), a company that owns and cultivates several plots of land outside Tbilisi, invested US\$ 365,000 in a drip irrigation system. Before installing the new system, the land was largely unusable, due to its unfavourable topography. In addition to allowing the company to fully utilise the its land, the system will enable it to save 152,000 m³ of water and optimise the use of fertilisers and pesticides. The technologies proved to be so beneficial that the management of [Agro Grain LLC](#) has decided to replace all its traditional irrigation systems.

Why energy-efficient construction will become the norm

Moving from Mtatsminda to the vast landscape of Tbilisi shows that construction is one of the most rapidly growing industries. Construction projects in all stages are being carried out throughout the capital as well as in other major cities in Georgia. According to the [International Energy Agency](#): “**Buildings and the construction sector combined are responsible for over one-third of global final energy consumption and nearly 40% of total direct and indirect CO₂ emissions**”. Therefore, buildings seem to be a good place to start when looking for opportunities to decrease the use of energy and promote more conscious consumption.

The adoption of the *Law on energy-efficient build-*

ings certainly aids investment in energy-efficient construction. After the adoption of the law, the next step is to set minimum requirements for energy efficiency in buildings, a task which was originally scheduled for 2021. However, due to the hardships posed by the pandemic, the date has been postponed until 30 July 2022. These requirements are long overdue – to this day, Georgian building codes are mainly based on Soviet Construction Norms and Rules (also known as SNIP), which are outdated. These codes take structural and seismic measure into account; however, they **lack requirements for building safety, design, construction, energy efficiency as well as for the operation and**



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maintenance of buildings, all of which is crucial to ensure the quality and sustainability of buildings.

Incorporating energy-efficient technologies is now largely left to the developer, and some larger developers have been eager to pioneer these technologies in their projects. [Archi LLC](#), one of the leading developers in Georgia has achieved a 43% reduction in energy use by investing in energy-efficient windows and doors, building blocks, ventilation systems, and insulation. Another big player, [Lisi Green Town](#), will avoid over 200 tonnes of CO₂ emissions by choosing similar technologies, along with LED lighting systems and energy-efficient elevators.

The market already offers a diverse selection of energy-efficient alternatives for all types of projects. The [Green Technology Selector \(GTS\)](#) only lists technologies that are at least 20% more energy efficient than their traditional counterparts. The technologies available include windows, doors and insulation that help decrease heat loss, as well as lighting, heating and cooling systems that consume less energy. Furthermore, the GTS offers technologies such as excavators and backhoe loaders that make the construction process more energy efficient. But the industry does not stop at incorporating EE technologies. With international certifications, such as LEED, BREEAM and EDGE, which are issued for various sustainable measures including sourcing 100% of the energy required by a building on-site, we can be sure that the future of most buildings is to not only be energy efficient, but to also only consume the energy produced by the building.

While energy-efficient buildings offer environmental benefits through decreased energy consump-

tion and CO₂ emissions, they also provide personal benefits to the end-users. Reduced heating and electric bills are the main benefit of a more efficient home. Even though these homes are more expensive, the costs are easily recovered through the savings achieved. In addition, **knowing that a home or office is up to important safety and environmental codes and that engineering, procurement and construction (known as the EPC) were carried out by a single group of professionals brings a sense of security to a family or an employee.** Purchasing a home is a significant investment – so it is important to know that it is built to last. Even if the home or a working space is later sold, the energy efficiency factor will add to its overall value.

GEFF in Georgia has financed numerous construction projects throughout its operation. **Collective annual energy savings and CO₂ emissions of these projects have reached 3,000 MW/h and 2,000 tonnes, respectively.** A good example to illustrate the financial benefits of using energy-efficient measures in construction is a large shopping mall in Gldani. Efficient heating and cooling, ventilation and LED lighting systems, along with high-performing elevators and escalators result in annual savings of almost US\$ 250,000. For a business successfully operating in the construction industry, savings can serve as an important jumpstart for future projects.

Innovative solutions offered by the industry, financial resources, and a legal framework provide a good outlook for Georgia to equip its public and private sectors with technologies necessary to decrease energy consumption and increase the quality of future buildings.

GEFF event with Georgian Farmers' Association



GEFF in Georgia continues to support its partners in the development of renewable energy, energy efficiency, and resource-efficient investments. In order to expand its reach to potential investors, the Facility partnered with the Georgian Farmers' Association (GFA) and organised a joint event, which was held online on 1 December 2021. Taking into account the emergency posed by climate change, the main purpose of the event was to shed light on the potential threats to the climate of Georgia as well as present one of the more effective ways of mitigating its outcomes.

The event was attended by approximately 30 farmers representing various sectors of the industry, ranging from wineries, vegetable and fruit farms, to family-owned guesthouses and lodgings. The attendants had the opportunity to familiarise themselves with the GEFF credit line as a financial resource as well as learn about the availability thereof at local partner financial institutions.

As outlined by GEFF expert Andro Bukhuzi: “The

average temperature in Georgia is expected to increase by 1.4°C, which will increase the frequency of extreme weather, heavy rainfall and overall unpredictable conditions that can be detrimental to agricultural businesses”. For this reason, seeking out measures that can help businesses mitigate some of these effects and adapt to expected changes could be crucial to the future livelihood of enterprises. The presentation went on to outline some of the key benefits of adopting solar energy, such as reduced utility costs, significant energy savings, and increased energy independence. The main message of the event was that solar energy remains one of the most affordable ways to improve business operations and lessen the negative impact of economic activities.

As usual, the event was concluded with a Q&A session during which GEFF in Georgia experts and GFA representatives answered the technical, financial and environmental questions of participants.

GEFF in Georgia plans to collaborate with various associations throughout the year. Topics and dates will be announced on our website.



Featured technology

Windows and doors

Windows and doors are significant components in a home's envelope. Ensuring they are energy-efficient will enable you to save energy, reduce heating and cooling costs, improve the comfort of the home or office and reduce carbon footprint. Old windows and doors can contribute to heat loss of up to 26%, while their energy-efficient counter-

parts keep the warm air in during the cold seasons and maintain a cool temperature inside during warm seasons.

See which energy-efficient technology suppliers are available in the Georgian market in the [Green Technology Selector](#).

Success stories

JSC Graali-92

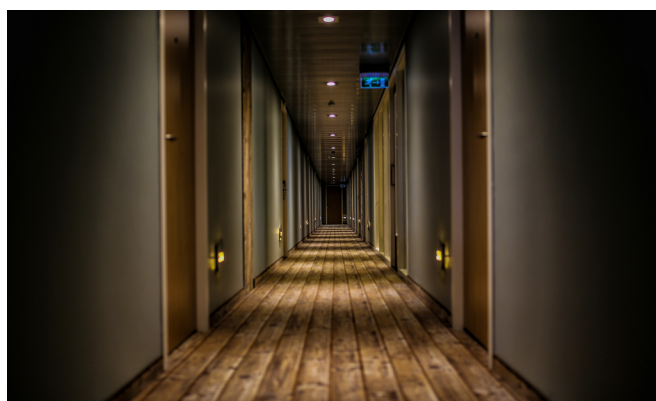
JSC Graali-92 has been successfully operating in the metal construction market in Georgia since 1936. The company designs, produces, delivers, and installs metal structures, including bridges, building frames, industrial rooftops, and various types of masts. JSC Graali-92 operates throughout the Caucasus region.



Investor	JSC Graali-92
Location	Tbilisi, Georgia
Investment	Solar power station (solar panels, inverter, and installation)
Investment size	US\$ 400,000
Energy savings	643 MWh/year
CO ₂ savings	258 tonnes/year
Impact	Leading position in the industry and energy independence
Donor	GCF, BMF

Khaled Alrajhi Holding Company

Established in Saudi Arabia in 1995, Khaled Alrajhi Holding Company decided to expand its area of operation and build a design hotel in Tbilisi, Georgia. The future four-star hotel will have a total of six floors (two underground and four above ground) with 80 rooms, restaurants, a conference hall, and a swimming pool.



Investor	Khaled Alrajhi Holding Company
Location	Tbilisi, Georgia
Investment	Windows and doors, heating and cooling systems, LED lighting, elevators
Investment size	US\$ 3,181,255
Natural gas savings	452 MWh/year
Energy savings	55 MWh/year
CO ₂ savings	113 tonnes/year
Impact	Significant annual savings and increased comfort for future building users
Donor	GCF, BMF

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