



## Where finance and green technologies meet

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### A case for investments in solar energy

With more and more people taking energy generation into their own hands, solar energy has become one of the most democratic sources of power. Electrification, or switching from using fossil fuels to electricity as a source of energy, has become a priority around the globe. Some argue that electricity will be the energy of the future.

But what about ways of generating electricity? There are a number of alternatives such as wind, water, and sun. However, out of these three, solar energy appears to be the safest, most accessible and, by many accounts, the cheapest means of production, as not everyone has their own river to install an HPP, and wind turbines require substantial investment and large parcels of land.

Today's advances in technology are making solar energy more and more accessible. As the director of a solar energy technology and service supplier in Georgia points out, when they began operating in 2017, the price for a solar panel was close to USD 40-45 cents per watt. Today, the price is at around 20-25 cents per watt. In the last six to seven years alone, the price has decreased by half, and with the quality of technology vastly improving, efficiency has increased by approximately 20%. As time goes on, prices are expected to decrease even further.

A business case for investing in solar energy is clear: with electricity rates rising continually, employing means of generating one's own energy is becoming a viable option. Despite the fact that utilising solar energy requires investment capital, GEF in Georgia's experience shows (and the solar energy supplier confirms) that most investments can be repaid in approximately four to six years. With savings achieved in utility costs, the full investment amount is swiftly repaid, and the owner of a solar power station can enjoy reduced or eliminated electricity costs for the remaining lifespan of the solar PV equipment, which is typically around 15-20 years.

Although financial savings are clearly the primary motivation for many businesses to begin using solar energy, they are not the only reason for considering an investment. Some companies operating in the EU require their partners and suppliers in Georgia to maintain cleaner operations. Other companies use solar energy to reflect their conscious environmental efforts, while others aim to increase their reputational capital. Furthermore, all businesses want to decrease their energy vulnerability and become less dependent on energy imports. Whatever the case, GEF in Georgia's solar project portfolio has been increasing over the last three years, with more businesses installing solar power stations on their premises.

GEF has yet another instrument that makes investing in solar energy easier: the Green Technology Selector (GTS) is an online platform that catalogues energy-efficient and renewable energy technologies available around the world. Finding the desired technology and printing out its certificate from the catalogue makes applying for financing at GEF's [partner financial institutions](#) quicker and easier. Georgian solar technology vendors have also made their products available on the GTS for anyone interested in [browsing](#).

Last but not least, solar energy, as a renewable energy form plays a critical role in reducing greenhouse gas emissions and in mitigating climate change, which is critical for safeguarding humans, wildlife, and ecosystems. Transitioning to solar energy can also enhance air quality and reduce the water consumption associated with conventional energy production.

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## What are green mortgages and how can they revolutionise home energy efficiency?

*This article uses excerpts from an interview with Stephen Richardson, WorldGBC's Technical Lead for Energy Efficiency Mortgages. Click [here](#) to view the full interview.*

Briefly stated, “a green mortgage is a mortgage specifically targeted at green buildings.” This type of mortgage offers preferential terms for properties that meet certain environmental standards and can apply to a newly built home or a renovation project to improve the environmental performance of an existing home.

Essentially, a green mortgage is a standard mortgage with beneficial terms. In the UK, for instance, green mortgages are split into three categories:

- Mortgages that offer lower interest rates if you purchase an energy efficient home
- Mortgages that offer cashback to buyers who purchase an energy efficient home
- Mortgages that offer cheaper borrowing rates or cash incentives to buyers who make energy efficient home improvements

According to Mr Richardson, there is growing evidence that suggests that green buildings are a lower risk investment for banks. There are two reasons this. First, due to decreased utility bills, the running costs for green buildings tend to be lower, thus bettering the financial position of a borrower. Second, green buildings are believed to have an increased value, compared to equivalent property without green credentials.

But why are green mortgages important? It is a fact that buildings consume significant amounts of energy, and in order to meet the climate change targets set out in the Paris Agreement, there is an urgent need to increase the current number of energy efficient buildings. By offering incentives for buying green homes, banks can contribute significantly to the development of green buildings. The availability of green mortgages also puts efficiency and sustainability front of mind for building owners as well as developers who will have to take these standards into consideration in the early stages of construction and/or renovation.

Preferential terms on mortgages will also motivate buyers to look for homes that meet environmental standards. Those planning to take out a mortgage to purchase a home, will be more critical of the choices on the market, and thus explore the options available with regard to green buildings.

Despite the theoretical benefits of green mortgages, there are still barriers to them.

According to Stephen Richardson, banks need to better understand green buildings, and gather enough data to prove that “green” translates into lower risk. Borrowers on the other hand need more information about the benefits of green buildings, so that choosing to go green can become a common and much more attractive option.



## Where is Georgia on the sustainability map?

All signatories to the Paris Agreement are working towards reducing their carbon footprint. As a party to the agreement, Georgia has made commendable strides towards greening its economy, but the road is long, and many challenges still lie ahead.

A collaborative event entitled “Green Finance for Sustainable Economy” was held in Tbilisi on 16 February 2023. The event was hosted by the European Bank for Reconstruction and Development (EBRD) and the National Bank of Georgia (NBG) and highlighted the progress made by Georgia in mainstreaming sustainable finance as well as the challenges being currently addressed.

The NBG recently approved the Sustainable Finance Taxonomy (SFT) and the Regulation on Loan Classification and Reporting in accordance with the SFT. As of January 2023, this regulation also requires commercial banks to submit monthly reports on green loans. As part of the green taxonomy, loans in specific categories, such as solar PV projects or electric vehicles, can automatically be classified as green; however, for other categories,

there are technical requirements and specifications which must first be checked to determine whether a loan qualifies as green according to the approved taxonomy.

As the TBC Bank's ESG Coordinator, Maka Bochorishvili, pointed out, banks face internal as well as external challenges. The starting point is developing internal criteria and choosing the right products for green investments. Ms Bochorishvili noted that the public is largely unaware of the benefits of "green" projects. Raising awareness and educating its clients, both in the capital city and in the regions, is high on TBC Bank's agenda. The head of Environmental Management at ProCredit Bank, Aleksandre Jashiashvili, cited two "green" areas of investment in Georgia today: energy-efficient technologies and solar power plants. The former category stems from the country's long history of energy efficiency financing, while the latter emerged in the light of increasing electricity prices for businesses.

Despite these steep challenges, Georgia has strong allies. Along with financing facilities and programmes, such as GEF, which operates in 28 countries, including Georgia, through its partner financial institutions (including TBC and ProCredit Bank), the EBRD offers many tools and services for financial institutions and businesses that can aid in broadening knowledge about green financing, creating a strong network and a support system for SMEs, and facilitating trade and relationships between businesses. The EBRD presented some of the principles, tools, and knowledge it is employing to achieve its ambitious goal of making at least 50% of its investments green by 2025.

The event concluded with a panel discussion with various business representatives, which revealed that major entities in Georgia are striving towards greening their operations. A major logistics operator has fully upgraded its network to reduce its carbon footprint; developers of both large and medium-scale residential buildings are using energy-efficient building materials as well as heating/cooling and lighting systems; and supermarkets are taking care to ensure that their new branches are aligned with energy efficiency standards.

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## EV is great, EV is terrible – the PROs and CONs of driving an electric car

Electric vehicles are the future of driving. It seems like every day another giant in the automotive industry is either unveiling a new electric vehicle or is planning to develop one.

Driving an electric car can be incredibly rewarding: you save money on fuel costs, there is no noise, and you can feel better about doing your part to protect the environment. But driving an electric vehicle can also be a huge hassle. Can the PROs outweigh all the CONs?

### **PRO – driving experience, CON – price**

Owing to the absence of growling engines, electric vehicles have no sound. This can be unusual at first, but it is actually very easy to get used to this unfamiliar silence. But can the “noiseless experience” really be a motivating factor when shopping for an electric car? The current prices for EVs are higher than those for their fuel counterparts. Furthermore, with technology advancing day by day, a model purchased a couple years back can now be found at a cheaper price somewhere else. In other words, the waiting game can be long, with customers often choosing to stick with a fuel-powered vehicle.

## **PRO – longer battery life, CON – calculating distances**

Batteries are now better than ever, and EV producers promise much longer travel distances than a few years back. However, in reality, the average person does not differentiate between driving in the city and driving on a highway. Nonetheless, battery utilisation in both cases is vastly different, owing to factors such as the type of road driven on and the weather conditions (colder temperatures deplete the battery at a faster rate as does driving up and down hills). Therefore, estimating the distance a vehicle can travel with its current charge can be a guessing game.

## **PRO – financial savings, CON – charging stations**

Owning an electric vehicle will most likely have significant benefits for your wallet. Fuel prices are volatile, but in general it is not cheap to own an automobile. Yes, an EV owner does not have to worry about spending excessive amounts on fuel or about waiting in line at the petrol station. However, an EV still needs to be charged and this presents another significant challenge, especially in Georgia. There are free charging stations available throughout the capital, but these are frequently occupied by other vehicles. Finding a charging station outside the city or elsewhere in the country is an even more troublesome task. So, unless you're travelling to the west, it is virtually impossible to find a charging station.

In short, owning an EV is great, it can also be quite limiting and anxiety inducing. Nevertheless, addressing the cons is simply a matter of time. After all, there is a reason why all the major car producers are moving toward electric or hybrid vehicles. Soon batteries will become even better, prices will decrease, and the infrastructure will eventually catch up – if you think about it, there was once a time when there were not enough petrol stations.

Another encouraging development comes from the private sector. One of GEFF in Georgia's PFIs is currently developing a financial product catered to potential buyers of electric vehicles. The EV loans envisaged will enable the purchase of new as well as used electric vehicles, which will aid those looking to switch to lower emission vehicles but that are not willing to pay full price. Meanwhile, GEFF's [Green Technology Selector](#) is available to anyone wishing to find EV models (for private or business purposes) that are at least 20% more efficient than their fuel-powered counterparts.

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**Featured technology:**

## No-tillage seeder

No-tillage seeding is the practice of planting forage crops directly into the soil without additional tillage performed after the harvesting of previous crops. The use of a no-tillage seeder has numerous advantages: (1) lower fuel costs, as the machine needs fewer passes across the field, (2) less soil moisture loss, thus preventing soil erosion and degradation, and (3) time and labour saved with fewer soil operations required. Investing in an efficient no-tillage seeder can be of great benefit to any farm or agricultural enterprise looking to increase its harvest and ensure the long usage of their soil.

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

## Success story



Kristali LTD is a brewery located in Chabukiani, Kakheti in Eastern Georgia.

It produces a wide variety of beers (lagers, ales etc.). It prides itself in using all-natural ingredients and is popular among local consumers.

In 2022, the brewery decided to add yet another natural ingredient to their production processes and decided to install a solar power station, which helps the company save around US\$ 20,000 in expenses annually.

### Investor

Kristali LTD

### Location

Chabukiani, Georgia

### Investment

Solar power station

### Investment size

US\$ 57,000

### Energy savings

211 MWh per year

### CO<sub>2</sub> savings

79 tonnes per year

### Payback period

3 years



View more success stories on our [website](#).

### Impact

Strengthening the company's reputation as a natural brewer, and "cleaning up" production processes

### Donor

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