

## Where finance and green technologies meet

GEFF in Armenia Newsletter N19: Q3, 2023

### Key results as of September 30, 2023

- GEFF in Armenia has financed **349 projects worth EUR 30.49 million** through five Partner Financial Institutions (PFIs), thus reducing primary energy usage by **148,204 MWh/year**, saving **34,142 tonnes of CO<sub>2</sub> annually** and **5,653 m<sup>3</sup>/year of water savings**.
- **46.24 MW installed capacity** of renewable energy projects makes it possible to avoid **26,546 tonnes of CO<sub>2</sub> annually**.
- **1,263 EE and RE technologies provided by 181 vendors from 21 sites** throughout Armenia are now available through the [Green Technology Selector](#).

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### Armenia's Ararat Valley: Battling Water Scarcity and Climate Change Challenges



Armenia's Ararat Valley, known as the heart of the country's agricultural production, is facing severe water scarcity. Groundwater levels in the valley's aquifer have diminished by approximately two-thirds since the early 1980s, according to measurements conducted by scientists. This dramatic decline can be attributed, in large part, to the rapid expansion of the fish farming industry in the region.

More than 200 aquaculture sites, some of which operate without proper permits, are consuming over half of the region's annual groundwater supply. Unfortunately, these fish farms have exceeded the aquifer's capacity to replenish itself, leading to significant over-extraction of water from underground reserves. Lenient permitting practices allowed the fish farming industry to flourish in the Ararat Valley.

The situation is further exacerbated by climate change, as the Ararat Valley receives less than 30cm of rainfall annually. Forecasts indicate that the valley is likely to become even drier, with an anticipated 8 percent decline in precipitation by the end of the century. Additionally, the region's snowpack is melting earlier in the year, causing unpredictability in the basin's regeneration timeframe and posing a significant challenge for farmers who rely on this water for irrigation.

Moreover, not all fish farmers in the Ararat Valley employ eco-friendly harvesting methods. While some farmers reoxygenate and recycle their water for future use, others have reportedly been draining their tanks into the Aras River, thereby polluting the riparian ecosystem with nitrogen.

This water scarcity issue in the Ararat Valley underscores the urgency of addressing both unsustainable water management practices and the impacts of climate change to ensure the region's long-term sustainability and agricultural viability. It is a stark reminder of the interconnected challenges that Armenia faces in managing its natural resources and adapting to a changing climate.

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## Sustainable development strategies to mitigate climate change risks



While Armenia may not be a leading contributor to climate change, it is undeniably one of the nations bearing the brunt of its adverse effects. As Armenia grapples with the consequences of climate change, there is a growing recognition of the importance of adopting sustainable practices and green technologies. These solutions offer hope in the face of adversity.

Businesses, particularly small and medium-sized enterprises (SMEs), play a pivotal role in mitigating climate change risks. By embracing eco-friendly practices and integrating sustainability into their operations, SMEs can not only reduce their environmental footprint but also enhance their competitiveness and long-term viability. Renewable energy sources, energy-efficient technologies, and eco-friendly agriculture practices are among the tools

that can help reduce greenhouse gas emissions, enhance resilience, and pave the way for a more sustainable future.

- **Solar Power:** Solar photovoltaic (PV) systems harness energy from the sun to generate electricity. Installing solar panels on rooftops and open spaces can reduce reliance on fossil fuels and lower greenhouse gas emissions, making it a valuable green technology for mitigating climate change.
- **Building Design:** Improved building insulation materials and energy-efficient architectural design can greatly reduce the energy needed for heating and cooling. This includes using materials like double- or triple-glazed windows, proper insulation, energy-efficient heating systems, etc.
- **Drip Irrigation:** Drip irrigation systems deliver water directly to the roots of plants, minimising water wastage through evaporation and runoff. This technology is especially valuable in regions with water scarcity.
- **No-Till Farming:** No-till or reduced tillage farming methods minimise soil disturbance during planting. This helps retain soil moisture, reduce erosion, and improve soil health by preserving beneficial microorganisms and organic matter.

All of the above technologies are available for financing through GEF in Armenia and its partner financial institutions. Furthermore, their availability on the [Green Technology Selector](#) makes the financing process even easier, with no additional technology review requirements since all of the listed options offer at least 20% efficiency improvement.

[Several businesses](#) in Armenia have started adopting green technologies thanks to financing provided by GEF in Armenia. Although the primary motivation may not always be climate change mitigation, with cost reduction often taking precedence, the end result remains consistent: a valuable contribution towards climate change mitigation.

Financial institutions are not immune to the impacts of climate change. Increasingly frequent and severe climate-related events can pose significant credit risks. To safeguard their investments and support climate resilience, financial institutions must incorporate climate risk assessments into their lending practices. This involves evaluating the vulnerability of borrowers to climate risks and developing strategies to manage and mitigate these risks effectively.

While Armenia grapples with the immediate challenges posed by climate change, it is essential to recognise that pro-active measures can make a substantial difference. The adoption of green technologies and sustainable practices, and the active involvement of businesses and financial institutions, are vital components of a comprehensive strategy to mitigate climate change risks. By working collaboratively, Armenia can build a more resilient and sustainable future for its people and its environment.

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## Armenia inaugurates first floating photovoltaics in the region

In a groundbreaking development, Armenia inaugurated the region's first floating solar photovoltaic (FPV) system on Lake Yerevan, in its capital city, on September 13. With a capacity of 150 KW, the FPV system was the product of a collaboration between the Armenia Renewable Resources and Energy Efficiency Fund and the French company NEPSEN, which secured an EUR 800,000 grant from the French government. The chairman of the Armenia Renewable Resources and Energy Efficiency Fund, Tigran Avinyan, lauded the station as 'unique' and underscored Armenia's ongoing progress in the field of solar energy since 2018. Avinyan also revealed plans for a substantial 200 MW solar power station, in partnership with Masdar, further showcasing Armenia's transition towards green energy.

The introduction of innovative green technologies, such as the FPV system, holds significant relevance for stakeholders of the GEF in Armenia. While this specific FPV project may not be directly associated with GEF, it serves as a compelling example of the evolving landscape of green technologies in Armenia. As new and sustainable technologies enter the market, they offer opportunities for vendors and Partner Financial Institutions (PFIs) to explore and potentially finance in the future. This underscores the importance of keeping GEF stakeholders informed about emerging green projects and technologies in the region, as they may play a pivotal role in Armenia's sustainable energy journey. By staying attuned to innovative developments like the FPV system, GEF stakeholders can proactively identify investment opportunities that align with their commitment to advancing environmentally responsible and energy-efficient solutions in Armenia.

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## Tax exemption on electric vehicle imports extended one year



Electric vehicles (EVs) are not just a modern trend; they represent a pivotal shift towards sustainable transportation. They have gained significant attention globally, and Armenia, like many other countries, recognises the compelling benefits of embracing electric cars. One of the key incentives for the adoption of electric vehicles in Armenia is the Value Added Tax (VAT) exemption when importing them.

The Armenian government has taken a significant step by extending the tax exemption for the import of electric motor vehicles, including buses, passenger cars, motorcycles and mopeds, by one more year, until January 1, 2025. During the Government session, Deputy Minister of Economy, Armen Khojyan, highlighted the substantial increase in such imports in recent years.

In 2022 alone, the import volume of electric cars grew by 1.8 times compared to 2021, and an astounding 12 times compared to 2020. Electric motorcycles and mopeds also experienced substantial growth, with imports in 2022 surging by a factor of 3.8 compared to 2021.

EVs offer numerous advantages for individual consumers, businesses and the environment. They are known for their remarkable energy efficiency and the reduction of greenhouse gas emissions. Besides environmental benefits, electric vehicles can help reduce the country's dependence on imported fossil fuels, leading to greater energy security and cost savings. Their quiet and smooth operation also improves the overall quality of urban life, reducing noise pollution. Moreover, the tax exemption incentivises

individuals and businesses to embrace this cleaner mode of transportation, facilitating a transition towards a more sustainable and eco-conscious future.

By extending the VAT exemption, the Government underscores its commitment to fostering sustainable transportation and to reducing the country's carbon footprint. As the volume of electric vehicle imports continues to surge, Armenia aligns itself with the goals of the green economy.

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## Featured technology:

### Hot water storage tanks

A specialised container is designed to store and maintain a supply of heated water for domestic or commercial use. These tanks are equipped with heating elements or are connected to external heating sources such as boilers or solar panels. Hot water storage tanks allow consistent and readily available hot water. They can also improve energy efficiency by allowing users to heat water during off-peak hours when electricity or gas rates are lower. These tanks can be essential for locations with unreliable hot water supply, ensuring a steady and convenient source of hot water for various applications, from showers to dishwashing.

See which energy efficient technology suppliers are available on the Armenian market through the [Green Technology Selector](#).

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## Success story



Established in 1998, Slav Group serves as the official representative of esteemed brands such as Ferrero (chocolate and confectionery products), Kimberly Clark

### Investor

Slav Group CJSC

### Location

Yerevan, Armenia

(personal care and paper-based consumer goods), Nutricia (medical products), Perfetti Van Melle (confectionery and gum), Ficosota (home and personal care items), Orimi Trade (tea and coffee), and Swedish Match (tobacco). Slav Group's team supplies these products to wholesalers in various regions in Armenia, and also operates retail sales outlets in Yerevan. Demonstrating their commitment to sustainability, the management has made a forward-thinking decision to invest in a 216 kW solar photovoltaic station on the plant's roof to meet internal energy needs.

### Investment

Solar PV Station

### Investment size

US\$ 140,000

### Payback period

5 years

### Energy savings

437.63 MWh/year

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

69.7 t/year

### Impact

Energy savings

### Donors

GCF, CIF

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