



Energy Efficiency and Renewable Energy in Retail



GEFF stands for Green Economy Financing Facility. GEFF in Uzbekistan is a grant supported loan facility, that helps privately owned companies invest in energy efficient and resource efficient technologies and in renewable energy solutions – we call them **GREEN TECHNOLOGIES**.

GEFF in Uzbekistan also provides free technical assistance to applicant companies to help them implement the optimal solution.

Technology examples and their benefits in retail

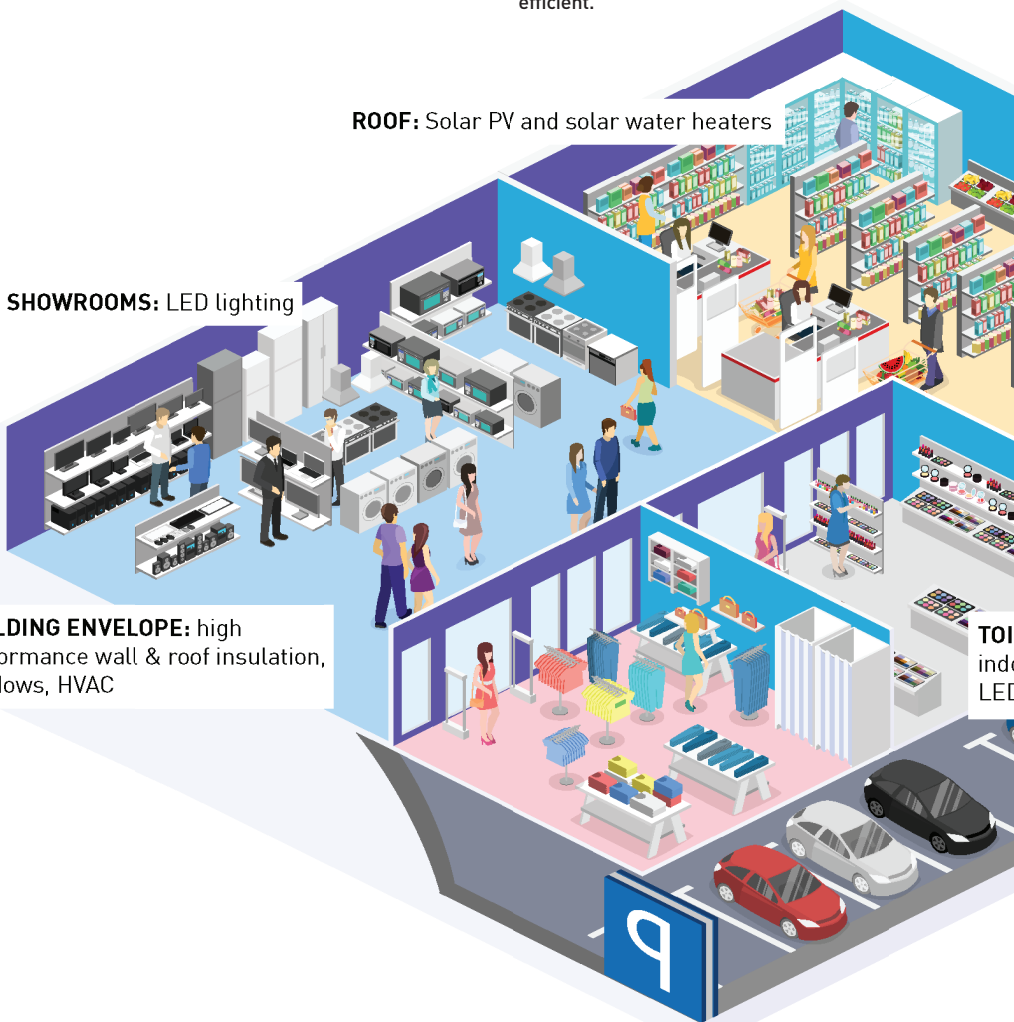
Much of the equipment discussed here are standard solutions that can be found in our Technology Selector – the list of automatically eligible equipment, which meets the **GEFF** Uzbekistan requirements. Invest in any of the technologies listed in the Technology Selector and obtain a **10% cash-back grant**. The Technology Selector also includes renewable energy technologies such as Solar PV and Solar Water Heaters, which are eligible for a **20% cash-back grant**.

- Warehousing (non-food) can save 20% in energy by installing an energy management system.
- For warehouses with more than 6 meters height, use high performance T8 or high-output T5 lamps to save energy. **BUT** – LED lighting is the most efficient.

ROOF: Solar PV and solar water heaters

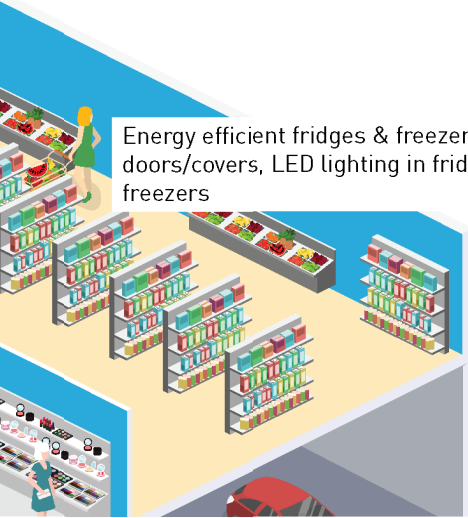
SHOWROOMS: LED lighting

BUILDING ENVELOPE: high performance wall & roof insulation, windows, HVAC



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- New high- efficiency motors (reference: IE3/ IE4) on conveyors can save 30% energy.
- HVAC: accounts for 47% of energy use in retail. Replacing a 15 year old RTU can save 20-40% energy.
- Refrigeration systems account for 40 to 60% of electricity consumption in food retail. Replacing lighting in refrigeration and freezer with LED technology can save over 40% energy.
- Installing doors on refrigerated display cabinets saves up to 60% energy
- Lighting represents up to 35% of energy use in retail. Minimize your lighting costs:
 - Compact fluorescent lamps (CFLs) save 20-25% energy
 - LEDs saves up to 60-80% energy
 - Use occupancy sensors in staff and utility areas (including corridors, bathrooms, storage rooms) to save energy



Energy efficient fridges & freezers with doors/covers, LED lighting in fridges & freezers

LET ROOMS, OFFICES, UTILITY ROOMS:
 door/outdoor LED lighting, occupancy sensors,
 0 signage, water saving WCs and taps



Examples of Retailers that went 'Greener'

CHECK YOUR PIPING

A supermarket refrigeration system consists of many components that act together as one system. Display cases, compressor racks, condensers, and walk-in refrigerators and freezers are the major energy consuming components. Walk-in cold storage chambers and compressors are located in the back of the store, with condensers typically on the roof. In the conventional "remote condensing" refrigeration system configuration, an extensive network of piping delivers refrigerant gas from the compressor to the condenser to the display cases and back to the compressor, resulting in substantial opportunities for refrigerant leaks along the way. While the display cases and compressors together account for about 85% of the system's energy consumption, engineering studies highlight many opportunities within the extensive piping system to improve energy efficiency at net cost savings. Therefore, a professional evaluation of the piping system and replacing leaky parts can generate substantial energy savings.

REFRIGERATION

A small retailer with six stores installed an integrated CO2 transcritical system (natural refrigeration) in the central warehouse that serves all six retail outlets. The installed unit has a capacity of 100 kW at medium temperature and 16 kW at low temperature. The system also provides heating in the winter thanks to a heat recovery unit that uses the waste heat from the refrigeration rack.



GEFF in Uzbekistan provides grant supported loan finance and technical advice to privately owned companies that aim to make their business resource efficient and improve their competitiveness through investments in high performance technologies and practices:

SMALL-SCALE INVESTMENTS - UP TO US\$ 300,000

For small-scale investments we offer a simple process, which enables companies to reap the benefits of energy savings much quicker. Choose your desired equipment from our Technology Selector, which contains a vast selection of pre-approved technologies.

LARGE-SCALE INVESTMENTS – UP TO US\$ 5 MILLION

For larger investments or complex technical solutions that lead to improved energy and resource efficiency performance, companies can apply for loans up to US\$ 5 million.

Apply to one of the GEFF Partner Finance Institutions for a GEFF loan and receive a cash-back grant upon successful project implementation:

10% grant for energy efficiency projects

20% for renewable energy projects

Do you need ideas or assistance? The **GEFF** package also includes advisory services provided by an international team of experts. The technical assistance package is free of charge to clients.



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