



Energy Efficiency and Renewable Energy in Agricultural Production



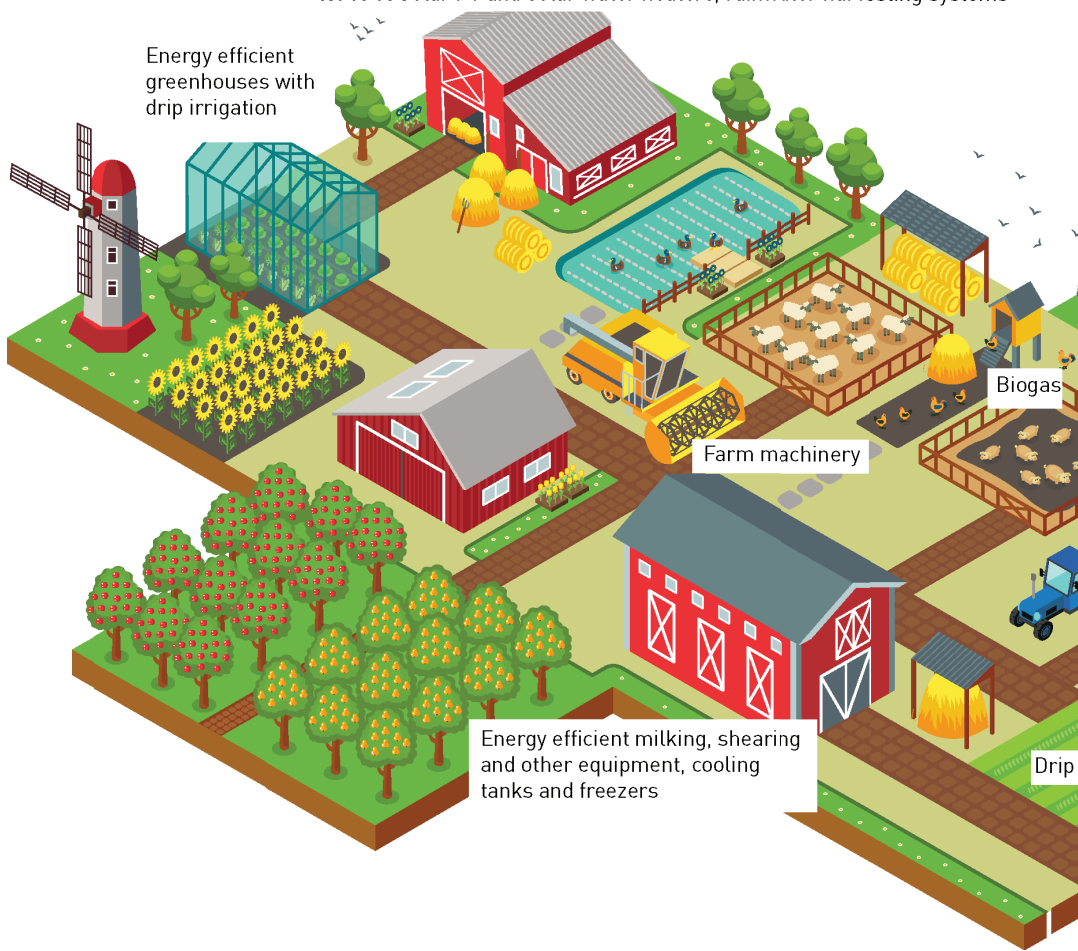
GEFF stands for Green Economy Financing Facility. GEFF in Uzbekistan is a grant supported loan facility, that helps privately owned companies invest in energy efficient and resource efficient technologies and in renewable energy solutions – we call them **GREEN TECHNOLOGIES**.

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

Technology examples and their benefits in agriculture

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**.

ROOFS: Solar PV and solar water heaters, rainwater harvesting systems



DAIRY OPERATIONS

Dairies rely on electrical energy for milking (vacuum pumps), cooling and storing milk, heating water, and lighting. Savings opportunities include for example energy efficient:

- Energy efficient LED lighting saves up to 40-70% energy per unit (Based on LED T8 or T12)
- Energy efficient ventilation systems save up to 50% energy
- Modern milking equipment and milk coolers can save 30-50% electricity
- Solar hot water heaters can save up to 90% in energy costs (compared to a solid fuel boilers)
- Variable Frequency Pumps or drives, which change the pumps capacity to meet the milking needs, can result in energy savings of 50- 80%
- Heat recovered from cooling processes can be used to preheat water for sanitation use
- Biogas plants are perfect for dairy operations and produce energy whilst reducing waste

- Solar PV on stables and building roofs reduces the amount of energy purchased from the grid
- On-demand livestock watering systems significantly reduce water and energy consumption

GREENHOUSES AND CROP FARMING

- Modern grain and fruit drying systems can save 40% energy. Solar drying systems consume practically no energy.
- New farm machinery has a 25-30% energy saving potential
- Installing poly film with an infrared inhibitor on the inner layer in greenhouses saves around 15% energy
- Thermal blankets can achieve 20-50% energy savings
- Further energy savings in greenhouses can be achieved with modern ventilation and heat exchangers

Examples of Agricultural Companies that went 'Greener'

FARM MACHINERY

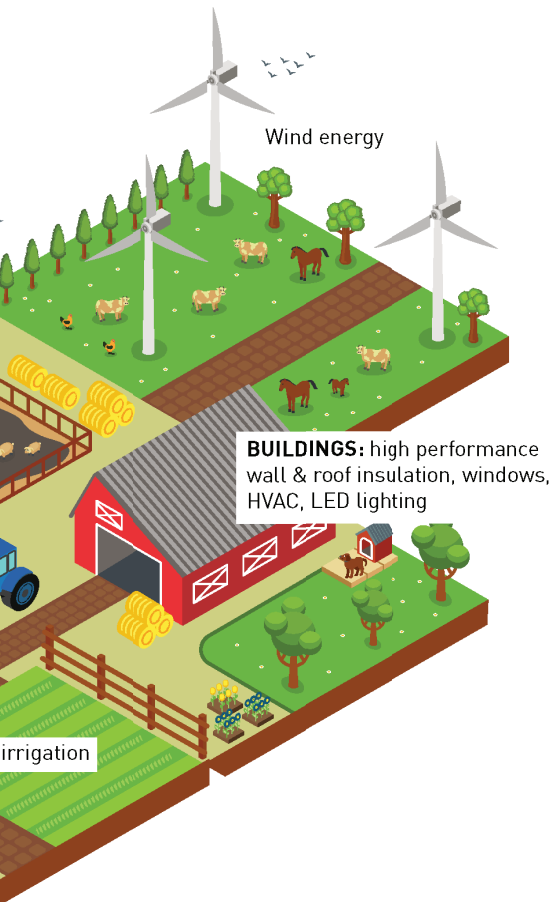
An agricultural company operated several types of tractors for its fields. Some of them were quite old and had high fuel consumption. In order to increase the farm's productivity and reduce fuel costs the company replaced 3 of the old tractors against modern efficient models. This resulted in annual fuel savings of 11,200 liters (25% saving) and a 30% decrease in processing time.

CROP FARMING

A crop farmer replaced his continuous cross flow dryer with a continuous flow in-bin dryer. The investment reduced annual energy consumption by 120 MWh, which represented a 40% reduction in the case of this farm. Additional savings were achieved by installing a control system for measuring grain humidity.

POULTRY FARMING

Ventilation is essential for maintaining a stable and high air quality in poultry breeding. A poultry breeder equipped 25 fan motors with a total capacity of 100 kW with variable speed drives. The average energy consumption of motors was reduced by 45% annually! In addition, the motors used in egg conveyors, fodder and manure transportation were modernized.



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.



GEFF

Green Economy Financing Facility



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