

Biogas-powered milk chiller

Provides milk cooling on farm, off-grid, enabling smallholder dairy farmers to get more value for milk by storing, delivering and selling high quality milk

Unique Selling Points



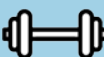
Complies with the international milk cooling standard: from 35°C to 4°C within 3 hours; 7x faster than regular refrigerators



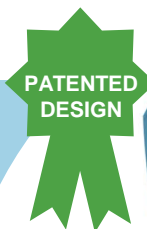
Has a cooling capacity of 10L of milk; sufficient for >80% of all dairy farmers in East Africa



With the amount of manure produced by a cow, enough biogas can be made to refrigerate her own milk.



Durable and modern design with 'Engineered in Holland' branding and 2 years warranty



Runs off-grid, on any type of domestic anaerobic digester, and uses the proven and reliable absorption cooling technology; it always works



Affordable and easy payment with lease-to-own finance and milk payback scheme



Problem & Solution

In East Africa, the dairy sector is crucial for rural development, poverty reduction and food security. Its full potential remains unexploited today, as evening milk produced by smallholder farmers does not get to the market (in adequate quality). Farmers live simply too far away. The amounts retained at farm are estimated at 30-50% of produced milk. Further up the value chain, dairy processors operate at low capacity utilisation rates, while there is a growing domestic demand of milk.

The solution lies in small-scale off-grid milk cooling at farm level using a reliable and renewable energy source: biogas produced from cow manure



Our Power



exchanging energy



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Dairy Cooperative

We have doubled our milk collection from our members that live far away, and reduced the risk of milk rejection by the processor

Dairy Farmer

I don't face the risk of milk rejection anymore, and I save time by delivering only once a day instead of twice

Dairy Farmer

We have doubled our milk income by delivering both evening milk and morning milk to the collection center

Impact throughout the dairy value chain with biogas milk chilling



Dairy Processor

The supply of high quality milk has increased; it enables us to expand our sales of high value dairy products like cheese

Integrated farm solution

Each day, the farmer nourishes the bacteria in the digester with manure from livestock and water. The biogas that is produced is a clean fuel that is used for cooking and milk chilling, and replaces wood fuel, charcoal and kerosene. Using biogas thereby lowers household energy expenditures. It also increases the income from evening milk and makes households independent of unreliable or non-existent power grids.

Biogas not only takes away the health hazards of indoor air pollution, cooling on biogas also eliminates milk spoilage and saves time.

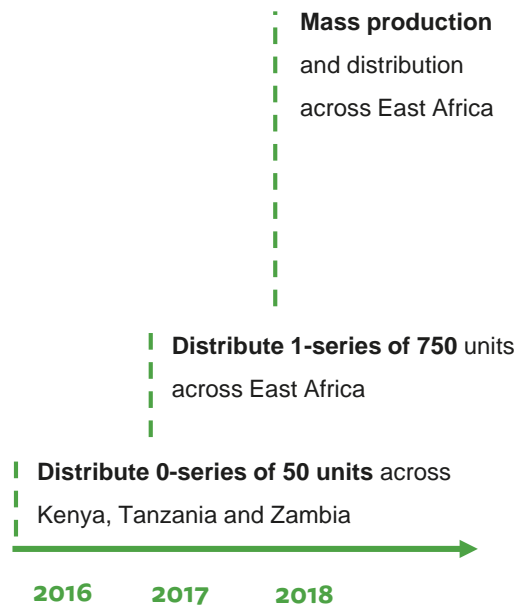
The improved crop yield from slurry application enables better feeding of cows, leading to more milk and manure.

This self-perpetuating cycle is enhancing businesses of smallholder dairy farmers and increases milk quality throughout the chain.

Timeline 2016 - 2018

SimGas completed testing of four prototypes in two regions of Tanzania. These tests proved that the technology enables off-grid cooling of 10 Litres of milk from 35°C to 4°C within three hours using biogas.

Currently, we are in the process of manufacturing the first batch of market-ready products. Soon, we will install the first 50 in Kenya, Tanzania and Zambia.



Want to find out more? Let's talk!



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About the consortium

SimGas: R&D and sales of biogas systems in East Africa. *Roles: product design, field testing, commercialization.*

SNV: over 550,000 biogas systems installed in SNV programs worldwide. *Roles: market analysis, training, promotion.*

Mueller: specialized in milk chilling equipment in over fifty countries. *Roles: technology provider, sector expertise, commercialization.*

BoP Innovation Center: BoP strategy and multi-national corporation collaboration. *Roles: consortium management, business strategy.*