

## USING BIOGAS TO COOL MILK AND REINFORCE ALL LEVELS OF THE NICARAGUAN MILK VALUE CHAIN

The Nicaraguan magazine [Energía Limpia XXI](#) has published the news that in the framework of the [Nicaragua Biogas Programme PBN](#) experiments have been conducted with successful results to cool the milk with electric energy generated from biogas.



Based on the strategic importance of this technological solution to enhance the development of the milk value chain in the country, the [Universidad Tecnológica La Salle \(ULSA\)](#) and the Holland Cooperation signed a collaboration agreement to accompany the PBN Programme in the validation of these tests. The stand point is that these studies will allow to define the technical and financial viability of the biogas technological solution for its promotion and adoption by the whole dairy sector of Nicaragua.



All the organizations and actors involved, in fact, estimate that the possibility to use biogas to cool the milk after milking, augmenting its lifetime, opens a new impact perspective in the use of this fundamental product for food and health of the population and to favour the manufacture of cheese and by-products of milk.



The Nicaragua Biogas Programme estimates that the technological biogas solution, that is based on a renewable energy source widely available to producers, can strengthen the dairy chain allowing milk to cool down at its most basic level represented by the farms. The low access to energy by different rural areas make that at present the dairy chain in Nicaragua can have cooling centres only at an intermediate level, in cooperatives or associations of producers. The use of biogas to cool milk at farm level allows producers to offer processors and the market a quality product, achieving better and stable prices.



The PBN Nicaragua Biogas programme is operating in the country since 2012, economically supported by the Nordic Development Fund (NDF) and the Multilateral Investment Fund (FOMIN). It is [executed by the Netherland Development Organization SNV](#) and HIVOS. The Programme installed 750 bio-digester in farms of the departments of Boaco, Matagalpa, Chontales, Jinotega, Río San Juan, producing energy by converting agricultural waste to meet energy needs in rural households.

In a first phase the program assisted farms in the use of biogas for cooking, to ensure basic lighting and for the [production of biofertilizer](#), an organic fertilizer resulting from the decomposition process of manure, allowing to substitute the chemicals and reducing the operational costs of the farms.



Based on these achievements and on capabilities to manage bio-digesters created in the farms, the Programme evolved getting new challenges in order to increase production in the livestock sector and to ensure the security of the dairy production by supporting producers in new uses of biogas as irrigation systems, water pumps, milking machines, grass choppers and water heaters.

All these technological achievements at rural farm level give the producers the possibility to stabilize the volumes of quality milk offered on the market and to gain better and more steady prices. It is in this operational framework that the new milk cooling equipment was installed counting on the energy produced by biogas and that scientific validations necessary to provide solidity to this application will be proved.

The *Universidad Tecnológica La Salle ULSA-León* through its *Centro de Investigación e Innovación para el Desarrollo Tecnológico de Energías Alternativas (CIDTEA)* will ensure the validation process with its multidisciplinary working group skilled in biogas investigations and with the contribution of its equipped laboratory. The PBN will make available to ULSA a biogas based cooling equipment useful to carry out the validation also in order that in the future it can continue to train biogas professionals at national level.

The agreement provides that in six months milk cooling equipment by biogas will be evaluated and validated (measurement of technical parameters on the biogas cooling, returns, efficiencies, and more), developing operational methodologies and procedures and defining the financial viability of the milk cooling solution with biogas.

The Pan American Dairy Federation FEPAL has disseminated among its members of Latin American countries the news on the results attained in Nicaragua strengthening the milk production chain and its main producers thanks to technologies based on renewable energies, which can reduce costs and increase the quality of their products.

### To know more

[Article in PBN website](#)

[Programa Biogás Nicaragua in Facebook](#)

[Programa Biogás Nicaragua in SNV website](#)

[Article in finanzascarbono.org](#)

[Article in SNV website](#)

[Article in website of Unión Nacional de Agricultores y Ganaderos UNAG](#)

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