

Implementation of a livestock waste management system with energy use

Summary

The project aims to find a sustainable solution to the problem of waste management on farms vaccines region. The intensive production of these generates a high concentration of waste.

This project proposal aims to study the possibility of developing an anaerobic digestion system of low cost, to be used individually for each operation, thus avoiding the waste initial transport. It also wants to design a system of utilization and use of the products of digestion: biogas and digestate.

Objectives

The targets are mainly the following:

- Get a new model of waste management operations to reduce the impact thereof on the environment, territory and society.
- Improve operating costs
- Change the energy model of the operation, giving priority to consumption, with the ultimate goal of self-sufficiency.
- Individualize model adapted to each farm.
- Ease and simplicity of operation of the system.

The main objective of the establishment of the task force is drafting a project studying the technical, environmental, social and economic model of management of manure and slurry. Based on anaerobic digestion and alleviate the negative effects of intensive farming in the same generation, we generate benefits and social energy with the energy of the generated gases and the reduction of odors regarding the social impact. Reducing emissions of greenhouse gases and ammonia are also positive effects achieved with the proposal.

The project to design a low-cost system, adapted to different production capacities of waste, and different needs of power consumption.

Conclusions

The final project and after characterizing three well differentiated livestock farms, has managed to adapt the production of biogas in the energy system of each farm. The consumption of diesel and propane for heating and hot water production has been modified. They have replaced electric or propane heating systems for ACS have been replaced or modified to take advantage of biogas. The electrical production during milking hours has been projected with cogeneration engines with biogas. To complete the treatment of slurry, the digester is heated with hot water produced by the heating boiler. To reduce the digestate volume, in addition to recirculating this to reduce the volume of digestate, in addition to recirculate this to reduce the density of the slurry, passed through the sieve and compactor-dehydrator to screw, the remaining liquid is heat treated, To evaporate and reduce pathogens more, with hot water from cogeneration and the heating boiler that takes advantage of surplus biogas produced daily. This process improves the competitiveness of the farm, converts it from an energy point of view into a self-sufficient one, and significantly reduces some of the management problems of slurries, such as transport, odors, pathogens and bad seeds, while conserving The totality of the minerals of the same.

Operational Group Leader

Entitat: **PIRENAICA, SCCL**
E-mail de contacte:
asolans@coopirenaica.com

Tipologia d'entitat:
Cooperativa

Keyword-category

Energy management
Farming practice
Fertilisation and nutrients management

Territorial scope

Província	County
Lleida	Alt Urgell

Project dissemination *(publications, seminars, multimedia...)*

Project website

www.originaenergia.com
<https://cooperativapirenaica.com>

Other project information

Project period

Starting date (month-year): Novembre 2015
End date (month-year): Setembre 2016
Project status: *Finalised*

Approved budget

Total budget:	28.571,43 €
<i>Funding source DARP:</i>	11.400,00 €
<i>Funding source EU:</i>	8.600,00 €
<i>Own funds:</i>	8.571,43 €

With the support of:

Project funded by Operation 16.01.01 (Cooperation for innovation) of the Rural Development Program of Catalunya 2014-2020.

Ordre ARP/258/2015, de 17 d'agost, per la qual s'aproven les bases reguladores dels ajuts a la cooperació per a la innovació a través del foment de la creació de grups operatius de l'Associació Europea per a la Innovació en matèria de productivitat i sostenibilitat agrícoles i la realització de projectes pilot innovadors per part d'aquests grups, i es convoquen els corresponents a 2015.

Id. projecte: 96 2015