Keteninitiatief Bosman Watermanagement CO2-reductie 2020-2022

1. Project Life+ Smart Fertilizer – Transnational partnership

Doel:

1. Excess of digestate (rich and dense residue in organic matter and minerals but very complicated to manage
2. The largest vector turns out to be the liquid fraction of the digestate, which involves difficulties of management, logistics, storage and disposal. Furthermore, treatment technics are complex and expensive
3. Farmers use expensive and non-sustainable chemical fertilisers
4. New approach to management of digestate which will increase the viability of biogas plants and improve their added value, both of the liquid part (nitrogen irrigation) and of the solid part (low cost pellets)
5. Important reduction of environmental impact by improving fertilization processes, minimizing losses of nitrogen and CO2 emissions
6. Low cost, sustainable, ready on demand liquid fertilizer available for farmers

Partners: 5 Companies from Spain, 1 Company in Germany and Bosman Watermanagement bv Netherlands
Investering Bosman: € 400.000,- excl. urenbesteding in werkgroep overleg, e.d.
Looptijd: Project is gestart in 2019. Duur: 3 jaar.
Status: Eerste testfase is uitgevoerd.

Verantwoordelijke namens Bosman Watermanagement BV:

Bart Jan Brandt

Datum: 7 oktober 2020

CARBON FOOTPRINT

This project can be considered a contribution to climate change mitigation, namely due to its "**efforts to reduce or prevent emission of greenhouse gasses**".

Life Smart Fertirrigation aims to demonstrate the environmental and economic feasibility of an innovative approach to processing digestate from pig manure at biogas plants. By replacing mineral fertilisation in a cost-effective way, win-win opportunities for biogas producers, farmers and the environment are created.

While biogas can be transformed into renewable energy, the digestate has untapped potential. This project aims to demonstrate that digestate can be used as a high-quality, suitable and safe biofertiliser.

 The goal concerning to the carbon footprint is:

-Substitute mineral fertilisers, lowering their negative impact on the environment: The environment impact of Nitrogen and Phosphorus present in manufactured fertilizers will be neutralised, **reducing greenhouse gas emissions** and preventing soil acidification and eutrophication, therefore, **minimization of the environment footprint** of agriculture.

 Demonstrate environmental savings:

-Prevention of CO_2 emissions vs inorganically fertilised fields (3600 t CO_2)
-Increased nutrient absorption capacity of the plant vs inorganic leading to reduction nitrogen and phosphorus in the ecosystem (soil, water, air)
-Savings in energy and chemical use through biological treatment of ammonia in the gas stream.

 Efforts for reducing the project´s "carbon footprint":

-It has been estimated below the CO_2 equivalent emissions saved by producing fertiliser from treated digestate instead of inorganic origin.

An estimation of the amount of carbon emissions prevented by producing organic fertiliser from digestate has been done, it will be used as a baseline since these processes are very complicated:

-The treatment of the **liquid fraction** in the Integral Digestate System would save **2,9 t of CO_2 eq per day.**
-The treatment of the **solid portion** in the Integral Digestate Treatment System would save **0,8 t of CO_2 eq per day.**
-The treatment of the **solid and liquid fractions as biofertiliser** would save close to **3 t of CO_2 eq per day.**
-At a daily rate, the **emissions of approx. 3600 t of CO_2 eq** would be prevented by producing bioferiliser from treated digestate instead of chemical fertiliser throughout the duration of the project.

Transport:

-The only potentially significant contribution to the carbon footprint will be the transport of the equipment manufactured at Bosman´s facilities in Netherlands to Spain.
-Measurements will be done to make sure that transport of the prototypes is done in as few containers as possible.
-Biofertiliser will be delivered to field tests near Pural´s facilities plants inside the province of Soria, so transport will not involve great distances.

LCA

-A LCA (Life Cycle Assessment) must be done at the end of the project by COPISO, the coordinator of the project to evaluate the environmental savings.