

# Equimeth: Anaerobic Digestion Plant

## Development Plan Summary (Economic Hub Les Renardières, Seine & Marne County, France)

**Overview: A preliminary study, carried out by Les Mines de ParisTech, Fontainebleau & Gâtinais Biosphere Reserve and Naskeo Environnement, highlighted the potential of horse manure methanisation. This resulted in Equimeth, a wholly owned Naskeo Environnement subsidiary, to seek support from the BioenNW project to investigate alternative ways to add value to horse manure in the Fontainebleau area, including the implementation of an anaerobic digester (AD) in Les Renardières.**

### Project detail

There are around 8,000 horses in the Fontainebleau region of France, producing around 72,000 tonnes of manure which is then used by the mushroom farming industry in neighbouring counties. As part of the BioenNW project, BioenNW partner Fondaterra helped Equimeth meet their objectives to:

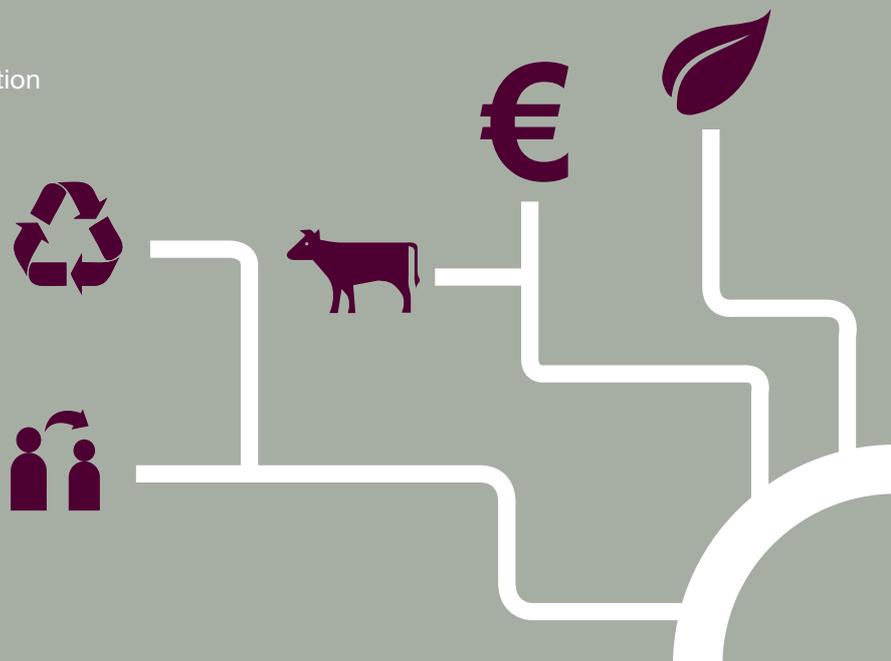
- develop a local solution to add value to horse manure in the Fontainebleau area
- replace natural gas by biomethane, a renewable energy
- decrease greenhouse gases
- process organic waste following AD legislation and in accordance with regional policy
- add value to solid and liquid digestates in accordance with water legislation on nitrates.

The advantages of the proposed project include:

- lower waste treatment costs
- a reduced quantity of waste

- gas to grid injection
- reduction of transport costs and reliance on petrol
- development of a local supply chain

The implementation of a 40,000 tonnes per annum (tpa) AD would set a precedent in the Ile-de-France county. A value would be added to local digestate which would be used as a fertilizer for farmers and could also be used for other activities.



## Project detail

The project looked to add value to local horse manure (60%) complemented by organic waste from crop residues as well as the processing of fruit, vegetable, cereals and sugar, the dairy industry, green waste, oils and fats sourced in the Ile-de-France county. The implementation of an AD would allow the production of methane, which could be injected into the grid, as well producing a digestate rich in azote, phosphorus and potassium which could be used as fertilizer.

A supply of horse manure has been secured on a five year contract and industrial organic waste will be subject to a gate fee.

The planned development site is located South West of Paris in the economic hub Les Renardières in the town of Ecuelles. It is neither located in a natural protected area, nor in the vicinity of historical monuments or drinking water. The feasibility study carried out through BioenNW showed that a dry mesophilic (37°C) AD process with a volume of 2,500m<sup>3</sup> and 30 days residence time would be most suitable. This would produce 4,825,300 Nm<sup>3</sup> of biogas per year with 55% methane (2,372,500 Nm<sup>3</sup> per year of 99% content). The detailed processes for the pre-treatment of various feedstocks were included in the full report.

The implementation of this project would be subject to lengthy administrative approvals and high capital investment associated with waste storage, pre-treatment, digester and other equipment and gas

cleaning, as well as costs linked to engineering, commissioning, maintenance etc which would total around € 9 million. Equimeth decided to open its capital to external investors. Revenues would mainly come from the sale of biomethane to the French electricity company and industrial waste gate fees. The scheme would also benefit from the new legal compulsory purchase of biomethane in natural gas grid injection. The initiative would also be eligible for subsidies from the French Environment and Energy Control Agency as well as from the Ile-de-France county to a contribution of 30%.

The digestate would be given free of charge to local farmers to spread on their land.

Potential threats to the project include increased competition to add value to this waste stream, regulations and possible residents' concerns. There are very few similar installations in France, however this project is a unique opportunity to set a precedent of AD implementation in the Ile-de-France area, using local biomass to generate profit and benefit the local farmers.

This development plan has been produced through BioenNW – a €7.9m strategic initiative of the European Union INTERREG IVB North West Europe Programme (2011-2015). BioenNW is led by the European Bioenergy Research Institute at Aston University, UK and sees 11 partners working together to deliver small-scale bioenergy schemes throughout North West Europe.



Report issued in November 2013

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