

International Climate Initiative

Climate Partnerships with the Private Sector: Pilot plant for the denitration of chicken manure

In South Africa, the poultry industry is the largest and most important animal protein producer with providing roughly 65% of the local demand and producing about 1.8 Mio tons of poultry meat each year. From this large poultry production a high amount of chicken manure is being produced, estimated at over 500,000 tons by the 3 main poultry producers only. The manure, in most cases directly applied to land, contains a high amount of nitrogen which quickly leads to negative effects on the soil and prohibits the direct use of chicken manure for energy production in biogas plants. The opportunity to produce renewable energy from chicken manure is therefore very limited. To overcome the need to heavily dilute the manure, the Poul-AR process, which separates nitrogen and converts it to Ammonium-nitrate, shall be introduced to the South African market within this project.

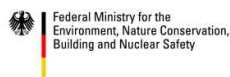
Colsen, a Dutch company specialized in bio-mass digestion, digestate treatment, waste water treatment and nutrient / energy recuperation developed the Poul-AR process and successfully proved its ability during a pilot phase in the Netherlands. During the duration of the project, Colsen is planning to transfer a modified Poul-AR plant to South Africa, where it will be installed at a chicken farm and adopted to the local conditions. The plant will serve as a demonstration object to raise awareness amongst local poultry farmers about the benefits of the technology. The system provides the opportunity, to directly use the manure to cover the farms electricity demand while at the same time producing a valuable fertilizer which can generate additional income.

The successful implementation of the project will lead to a more sustainable production, by reducing the environmental impact and improving the energy supply on the farm. In addition, heat energy required for conventional fertilizer production can be avoided and therefore significant energy savings can be established. The total CO₂ emission savings due to electricity or steam production by Poul AR, leads to a total of 1.07 ton CO₂ equivalent per ton of poultry manure. Alternatively, the CO₂ emission savings expressed per MWh generated are 3.27 ton CO₂ equivalent.

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Country:	South Africa
Implementation:	DEG - Deutsche Investitions- und Entwicklungsgesellschaft mbH, Köln
Private sector partner:	Colsen Adviesburo voor Mileutechniek B.V.
Total project costs:	398,890 €
BMUB-funding:	199,445 €
Project duration:	08/2016 – 01/2018

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INTERNATIONAL CLIMATE INITIATIVE (IKI)



KFW DEG

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