

xergi



# Ownership Structure



# Xergi R&D



## Process Research- Foulum

- ▶ In-house process and biological research
- ▶ Gas potential. Batch testing.
- ▶ Continuous testing and trials

## Concept Development - Alborg

- ▶ Development of new technical concepts
- ▶ Development of new equipment



# Laboratorie Batchcooker



# Xergi fokus from 2007 unused biomasses from the Agricultural sector

An analyses of the future market for biomasses for the biogas sector including LCA analyses.

1. Manure plus food industri waste (limited)
2. Manure plus energy crops (food to energy plus LCA)
3. Manure alone (dewateret) (use of waste)
4. Unused biomasses – manure + deep litter cattle and poultry + other agricultural waste (straw, grass etc.). (Unused waste potential)





# Xergi pre-treatment technologies



## **Extruder**

Dudendorf, D, 1 MW - deep litter and maize

Barkip, UK, 2 MW - grass

Foulum, DK – deep litter and grass silage



## **Hammermill**

Tiper Methanisation, FR – 2 MW deep litter and straw



## **X-Chopper**

Full-scale X-chopper undergoing testing



## **NiX<sup>®</sup> (thermochemical pre-treatment)**

Retford, UK, 3 MW – poultry litter

Effect documented through a number of test

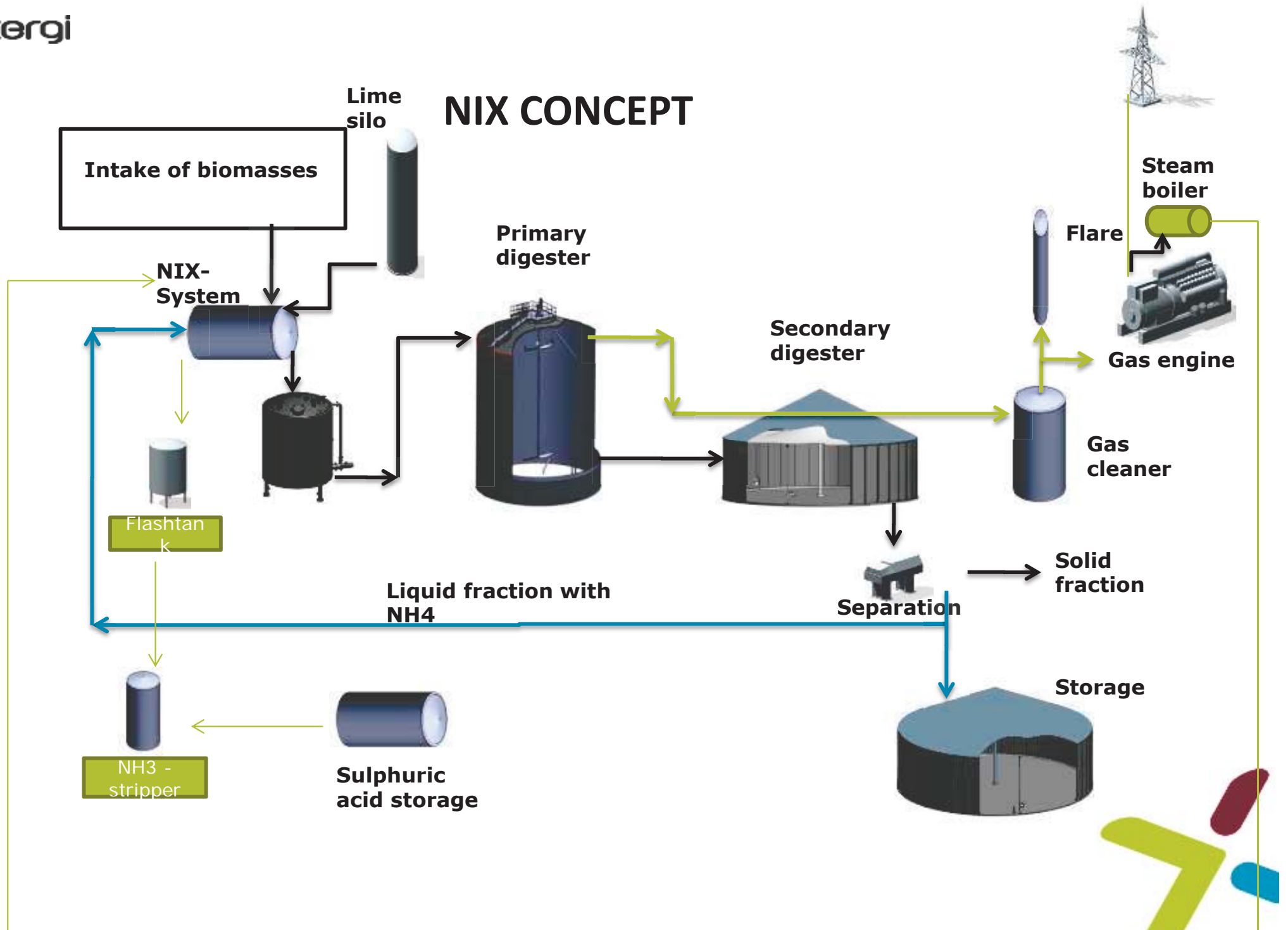


# Why make the NiX<sup>®</sup> pre-treatment?

1. Digest biomasses with high nitrogen content
2. Higher gas yield from fibre-rich biomasses
3. Homogeneous not floating biomasses after the pre-treatment
4. Possible to receive biomasses that follow the demands of the category 2 in the regulation of by-products.
5. Separation of Phosphor and Ammonium to be used as commercial fertilizer.



# NIX CONCEPT





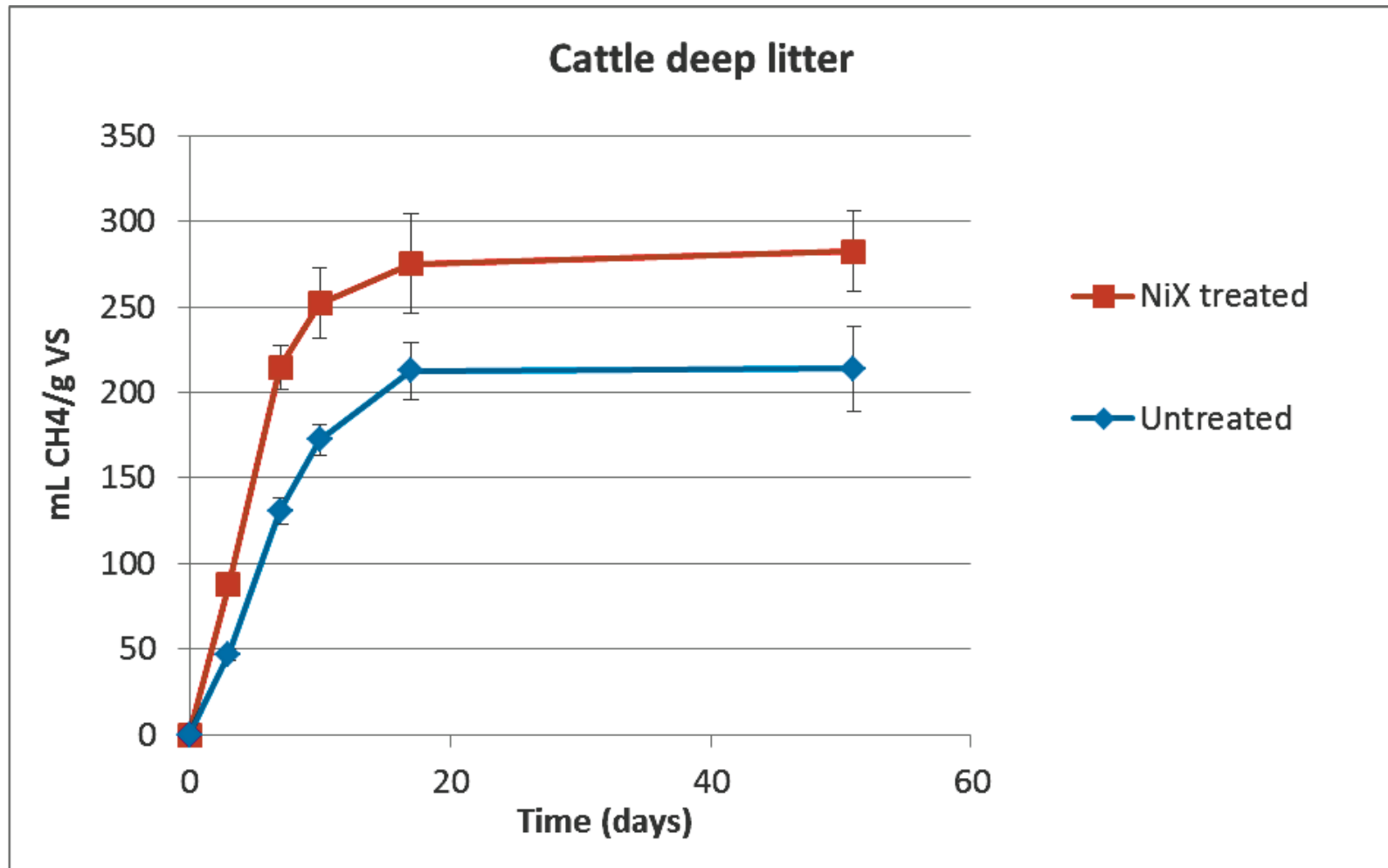
# Poultry Power

Effect of the NIX pretreatment:

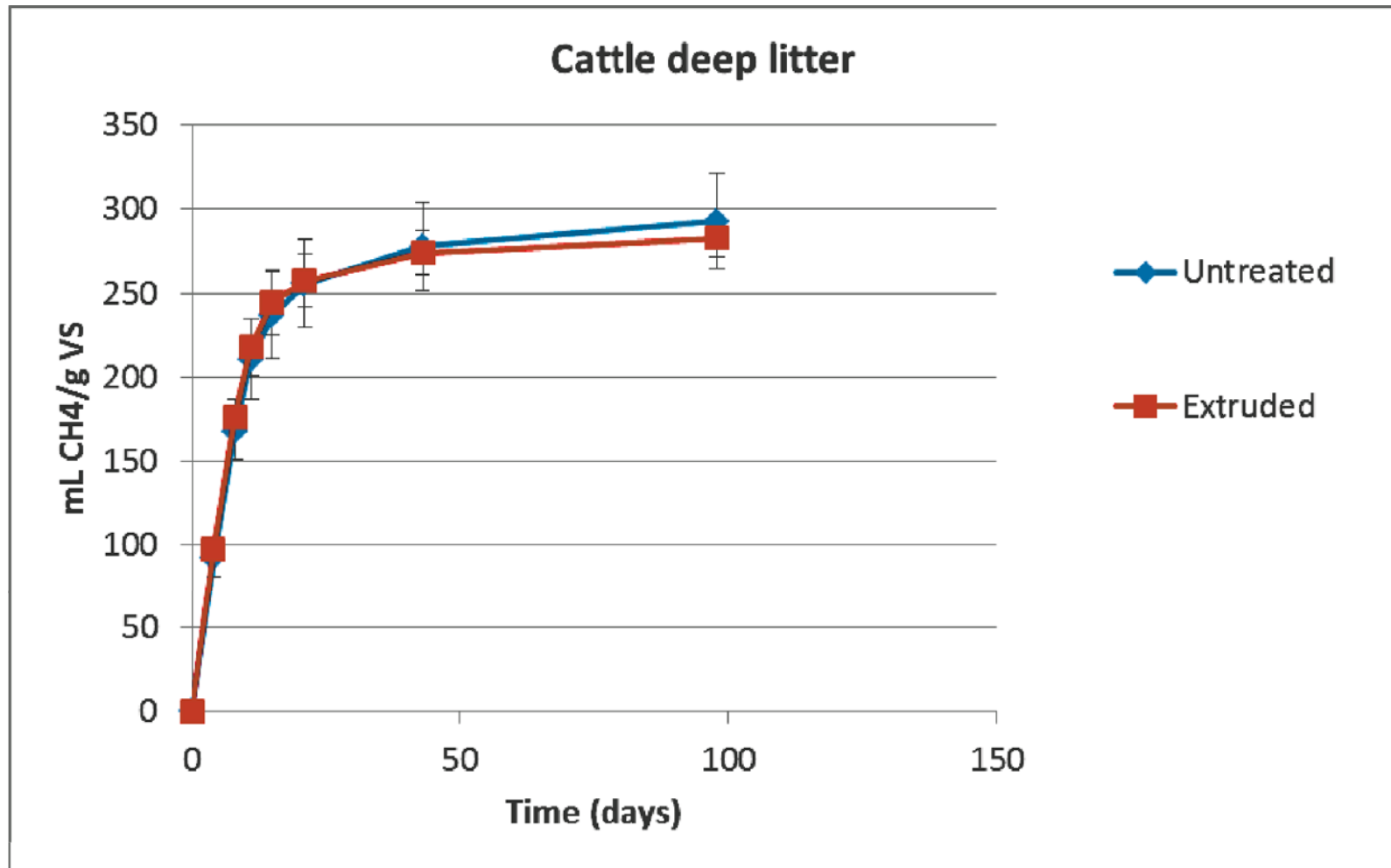
1. Removes 65 % of the ammonium in the Cocker or around 15 - 20 % of total N
2. A new NIX patent with a pre N- mineralisation proces removes 55 % of the total N.
3. The NIX makes it possible to operate with 100 % Poultry Litter without adding water or other biomasses.
4. First 3 MW project under construction in UK.



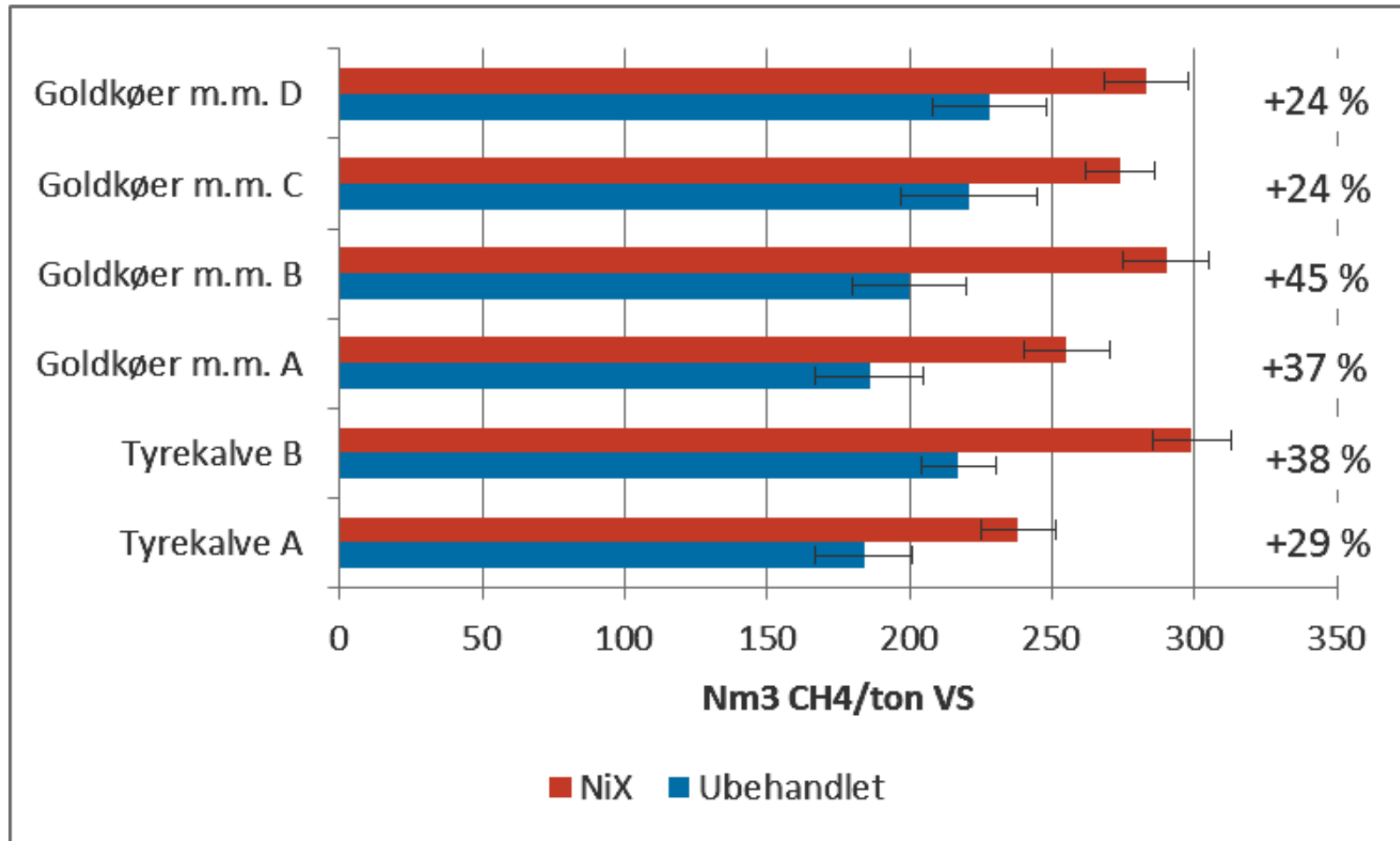
# Beef cattle litter - NiX



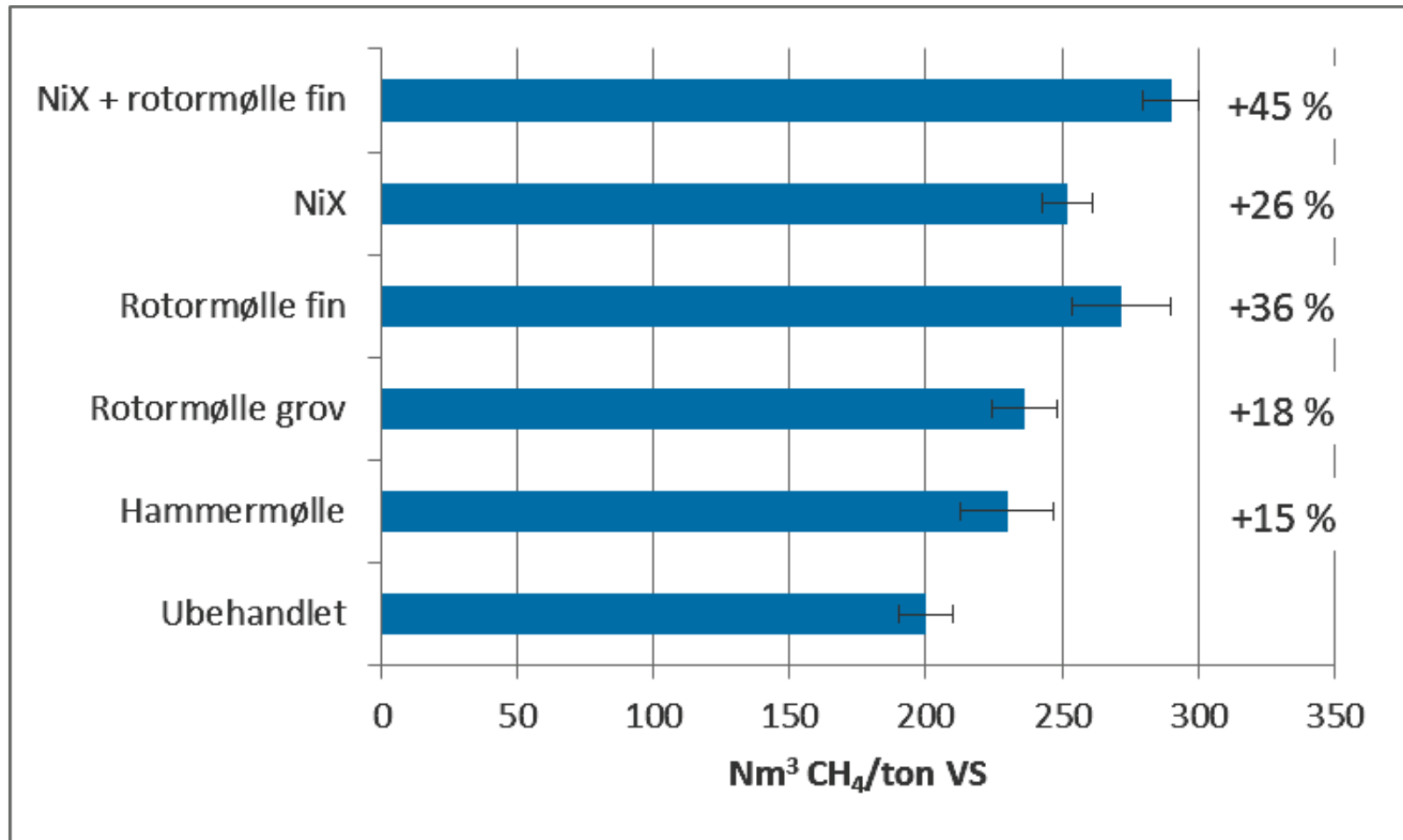
# Beef Cattle deep litter - Extruderering



# Kvægdybstrøelse



# Halm



# New batch cooker

For all pretreatment technologies its essential to compare the cost of the pretreatment with the effect of the tretreatment:

## **A new patented cooker focused on deep litter:**

1. Will reduce the electricity consumption with 60 %
2. Will reduce the investment cost with 25 %.

Result documented in a low presure model.

Full scale documentation in an EUDP project in Ribe.

Including a complete deep litter documentation in cooeration with Aarhus university.





# Dokumentation af ny Nix koger på Ribe Biogas – EUDP.

Ribe Biogas A/S

Anlægsvært og daglig drift.

GasCon A/S

Rådgiver for Ribe Biogas.

Lildal A/S

Udvikling og leverance af NiX-koger.

Aarhus Universitet

Screening af dybstrøelse i DK  
Sammenligning af NiX,  
kædeneddeling og ekstrudering.

Xergi A/S

Projektledelse og udviklings-  
samarbejde med parterne.

