



# FLOC

AMMONIA SOLUTIONS

## **From waste to value**

Recovering Nitrogen from animal dejections and valorising it as inorganic biofertiliser.

[www.floc-ammonia-solutions.com](http://www.floc-ammonia-solutions.com)  
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**Xavier Crusat, CEO**

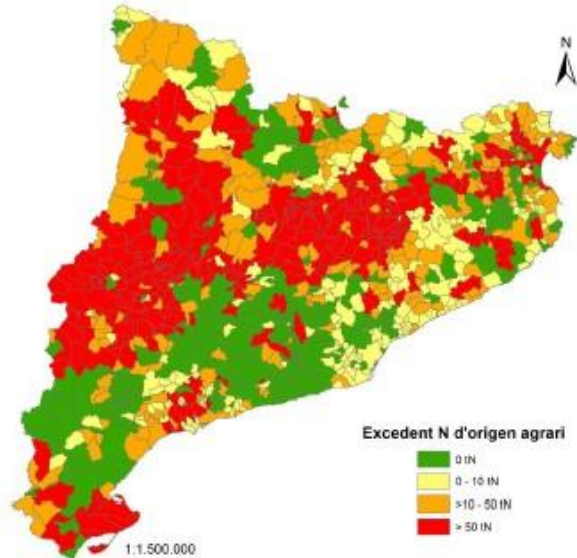
27 June, 2024



# PROBLEMS

**Ammonia contamination due to overfertilisation from animal dejections in intensive livestock areas**

Mapa 3. Situació actual d'excident de nitrogen als municipis de Catalunya.



Font: Agència Catalana de l'Aigua (ACA).

**Fertilizers supplies are not sustainable and based in non renewable sources**  
(mineral mining & natural gas)



Ammonia production:  
1'8% world energy, 500 Mt of CO<sub>2</sub>  
(=1,256 gas power plants/year)

# OPPORTUNITY: ANIMAL DEJECTIONS

Europe  
**Over 5 million**  
intensive farms

Ammonium  
sulphate content  
**94 million**  
tons/year

**Over 14 billion**  
€/year

CO<sub>2</sub> saved  
**40 million**  
tons/year

Carbon credits  
**3,000 million**  
€/year wasted

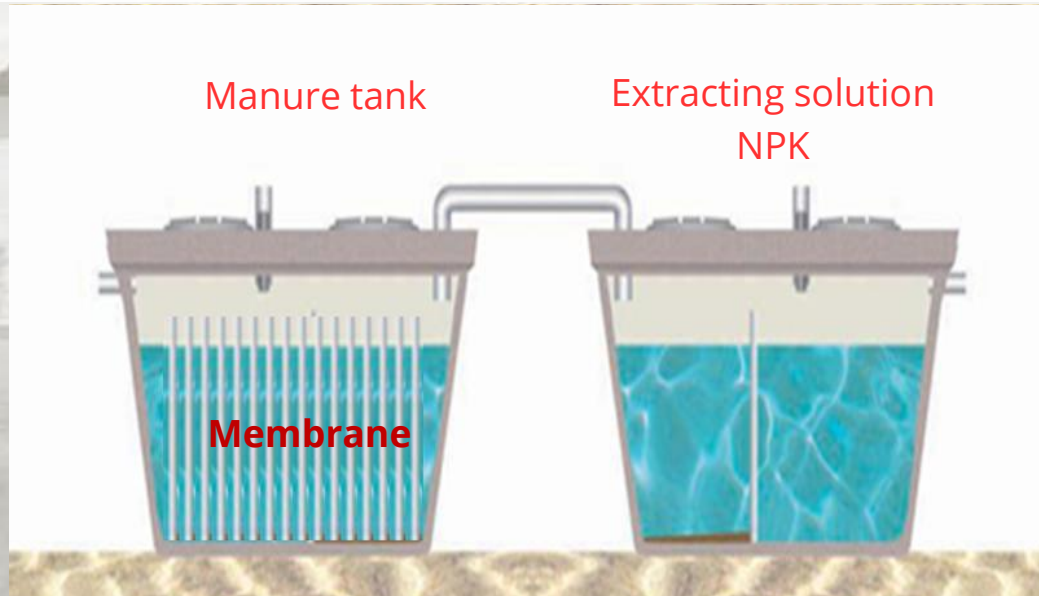


## SOLUTION

**Recovering** Nitrogen, Phosphorus and Potassium from animal dejections and **valorising** them as inorganic **biofertiliser**

# PRODUCT & TECHNOLOGY

- Equipment with a **patented** membrane technology.
- Barcelona University laboratory test.
- Pilot plant for slurry treatment in Lleida.
- **TRL 7**



# MARKET & BUSINESS MODEL B2B2C

11.000 intensive farmers in CAT

**CAT potential market is  
€ 825 M.**

Goal 2024 = € 0'4M

70.000 intensive farmers in ES

**ES potential market is  
€ 5.250 M.**

Goal 2025 = € 1'2M

5M intensive farmers in EU

**EU potential market  
is € 375.000 M.**

Goal 2026 = € 37M

**TAM > 375,000 M€    SAM > 37,500 M€ (10%)    SOM > 37 M€ (0'1%)**



> Ammonium Sulphate recovered (EU): **14 billion €/year**

> Carbon Credits (EU): **3,000 million €/year**

# IMPACT & METRICS



> 65% nitrates' contamination in soils and waters.



Tons of mineral mining of Phosphorus and Potassium.



Tons of natural gas for producing Ammonium.



New revenue streams for farmers.



Face climate deniers in rural areas (votes).



Reduction of costs (externalities) (LCA).

# COMPETITORS

	FLOC	Contactor 3M	Biogas plant ECOBIOGAS	Stripping DEPLAN	Tecnapur ROTECNA
<b>Technology</b>	Membrane	Membrane	Anaerobic	Evaporation/ condensation	Physical/ Chemical
<b>N recovery</b>	√	√	X	X	X
<b>Modular</b>	√	√	X	X	√
<b>Price</b>	€	€€	€€€	€€€	€€€
<b>No need of lab conditions</b>	√	X	X	X	√
<b>No need civil works</b>	√	√	X	X	√
<b>Energy consumption</b>	√	X	X	X	X

# TEAM



**Xavier Crusat**

Co-Founder & CEO

*B. Business & entrepreneur*



**Francesc Mas**

Co-founder & Scientific advisor

*PhD Chemistry, B. Physics*



**Tomàs Romero**

CTO

*B. Chemistry, MSc Environmental*

# ROADMAP & FUNDING NEEDS

## ... 2023

- Lab plant for liquid.
- Validated results.
- Patent filling.
- EIT Jumpstarter.
- Catalan Pitch Competition.

## 2024

- Pilot plant for liquid.
- Pilot plant for gas.
- Certified results.



- *Pilots' validation.*  
**120K€**

## 2025

- Certified results.
- Water Partnership.



- *Pilot validation.*  
**160K€**
- *Chemical Engineer.*  
**40K€**

## 2026

- 100 users.
- Distributors.

- *Production plant.*



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