Kalundborg Bioenergi
Part of Bigadan

## Bioenergy with Carbon Capture and Storage Denmark

# Kalundborg Bioenergy - first BECCS in Denmark

### Project in focus

Kalundborg Bioenergy will be one of Denmark's first biogas plants to capture and permanently store biogenic $CO_2$, commisioning in april 2026. By utilizing Bioenergy with Carbon Capture and Storage (BECCS), the facility will achieve a net-negative carbon footprint. This will documented through a Carbon Removal credit, which will be issued when the biogenic $CO_2$ is stored.

The plant primarily processes organic waste from Novo Nordisk and Novonesis, like enzyme byproducts and insulin waste, along with agricultural residues such as manure. Converting these biomasses into bioenergy prevents the decomposition and release of GHG emissions like methane and $CO_2$ into the atmosphere, while maximizing resource efficiency and promoting a circular economy.

The biogenic $CO_2$ will be transported by bio-CNG trucks to Esbjerg Port and offshore by ship. The $CO_2$ will be permanently stored in a depleted oil reservoir below the North Sea under Project Greensand operated by INEOS Energy Denmark.

Carbon capture and storage at Kalundborg Bioenergy goes further - it permanently removes biogenic $CO_2$ from the carbon cycle through geological storage for centuries and thereby contributing to Denmark's climate goals and global Net Zero targets like SBTi.

### Supported by Danish authorities

In 2024, Bioman ApS won the Danish Energy Agency's Negative Emission Carbon Capture and Storage (NECCS) tender, securing subsidies for the permanent storage of $CO_2$.

### Certification

The project will generate high-quality Carbon Removal Credits, which are planned to be certified under the Isometric standard. Isometric is actively aligning its methodologies with the European Commission's Carbon Removal Certification Framework (CRCF), and it is expected to be formally acknowledged under the directive once implemented. This ensures that the project's credits meet stringent EU requirements for transparency, durability, and environmental integrity.

### Timeline

**Q1 2024**
Bioman wins NECCS tender by Danish EA
Project receives

**Q4 2024**
FID on project

**Q1 2026**
BECCS operation start

**2026**
1st issuance of Carbon Removal credits

Carbon capture capacity: **25,000 t CO2/y and 175,000 t CO2 from 2026 to 2032**

Kalundborg Bioenergy generates **335,000 MWh of energy annually —enough to cover the heat consumption of 17,500 households and to fully supply Novo Nordisk's energy needs of 100,000 MWh per year.** Additionally, the processed waste is returned to farmers' fields as fertilizer.

**BECCS contributes to several Sustainable Development Goal targets:** (7.2, 7.3), (13.2, 13.3). (9.4, 9.5) and (12.2, 12.4).

### SDGs


**Biogas Plant** Kalundborg

**Storage** North Sea