Solid biofuels | Carbon credits | Soil restoration

# Jord: Rebalancing the carbon cycle from the ground to the atmosphere

Overview

# About Jord

Jord is a **Swedish** company founded in 2017 and headquartered in Stockholm, dedicated to rebalancing the carbon cycle through the production of solid biofuels from C4 grass.

At Jord, we envision a future unburdened by fossil fuel emissions. Inspired by the pristine beauty and innovative spirit of Sweden, we sustainably harness nature's power to produce renewable fuels—without encroaching on fertile farmland essential for food production or drawing from our cherished forests. Our approach centers on using C4 grass, planted on marginal and degraded land, to produce fuel pellets that are not only renewable but also $CO_2e$ negative.

Our products go beyond replacing fossil fuels; what we do removes carbon from the atmosphere and sequesters it in the soil. This process not only revitalizes depleted lands but also restores the natural cadence of the carbon cycle, nurturing the earth for generations to come.

Founded in

**2017**

Headquarters

**Sweden**

N° of facilities

**2**

Product

**Fuel pellets**

Production capacity

**36 tons per hectare**

Hectares

**570**

Our mission

# Jord’s mission is to restore the biosphere while delivering renewable products

Harnessing nature to tackle climate challenges.

# Addressing three challenges at once

Once a harmonious cycle sustaining life on Earth, the carbon cycle is now disrupted by excessive emissions and unsustainable land use practices—casting significant challenges and risks upon our environment. Jord steps forward to address three critical issues simultaneously.

**Dependency on fossil fuels**
We drive the shift from fossil fuels to renewable solid biofuels, innovating sustainable energy solutions that reduce emissions.

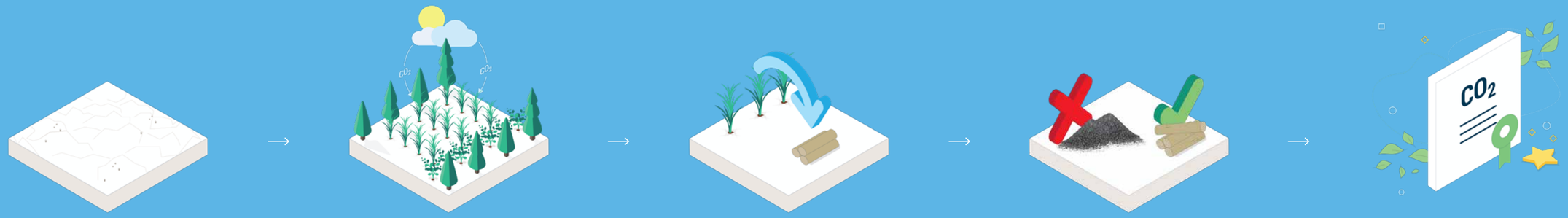
**Increasing levels of $CO_2$ in the atmosphere**
Lowering atmospheric $CO_2$ levels to combat climate change and improve air quality, thereby reducing health risks associated with pollution.

**Degraded land unfit for food production**
We focus on regenerating degraded soils, making them suitable for food production.

We aim to create a healthier planet by aligning with the natural carbon cycle and supporting communities in achieving sustainable development and environmental resilience.

The solution

# Our holistic approach




1. Jord establishes plots on marginal and degraded lands, implementing a regenerative agroforestry.
2. C4 grass absorbs $CO_2$, storing it in biomass and roots.
3. Jord transforms the C4 grass into solid biofuels.
4. Companies replace fossil fuels with Jord's solid biofuels.
5. Jord generates carbon credits, which companies purchase to reduce hard-to-abate emissions.

Where we are

# Global operations

Jord is headquartered in **Sweden**, where our business development, sales, and marketing teams are based.

To meet the specific needs of our operations, we've established production facilities in tropical regions with ideal growing conditions for our specialized grasses. Currently, we operate two production sites—one in the **Dominican Republic** and another in **Senegal**. These locations allow us to efficiently supply solid biofuels to meet both local and international demand, contributing to a more sustainable energy landscape.

Senegal

# Dagana

The Senegal project began in 2018 in the Dagana region with the objective of establishing a Jord unit that will serve as the first of several larger plantations in the country, in line with Jord's long-term expansion plan.

In the heart of Senegal, we intertwine nature's enduring wisdom with innovative technology to breathe new life into degraded and marginal lands. By planting resilient C4 grasses, we restore soil fertility and draw CO2 from the atmosphere. Our journey reduces reliance on fossil fuels by producing solid biofuels at scale—energizing communities while nurturing the earth beneath our feet. Through this harmonious blend of natural solutions and modern advancements, we aim to transform barren landscapes into fertile grounds, fostering sustainable livelihoods and paving the way toward a fossil free future for Senegal.

## Project overview

Start date
**2018**

Time span
**10 to 20 years**

Hectares
**70**

Dominican Republic

# San Pedro de Macorís

Jord launched its second project in the San Pedro de Macorís Province, located in the central region of the Dominican Republic. This area holds strategic importance due to its proximity to Santo Domingo and its historical role in the sugar industry. Jord's project is established on degraded and marginal lands, including low-productivity areas previously used for sugarcane cultivation. The initiative employs a regenerative agroforestry model centered around perennial C4 grasses. This approach aims to regenerate the soil, enhance biodiversity, and support the development of sustainable biomass production.

## Project overview

Start date
**2020**

Time span
**10 to 20 years**

Hectares
**500**

Pellets production capacity
**18,000 tons**

FTEs (as of September 2024)
**22**

The feedstock

# Harnessing C4 grasses

In net-zero scenarios, the demand for pellets will surge due to the global shift away from fossil fuels, emphasizing the need to scale up renewable fuel production, highlighting the need to scale up renewable fuel production. The agricultural sector can support this expansion through dedicated energy crops like C4 grasses, which are ideal for sustainable pellet production due to the following advantages:

**High biomass yield**
Approximately 40 oven-dry tonnes per hectare per year.

**Photosynthetic efficiency**
Improved nutrient and water use.

**Adaptability to degraded soils**
Tolerant to heat, drought, and salinity, which are common in degraded soils.

**Perennial nature**
Reduces tillage and increases below-ground biomass.

**High lignin content**
Acts as a natural binding agent for high-quality pellets.

**Carbon sequestration**
Efficient in sequestering carbon in the soil, thanks to their deep root systems.

Biomass

# Pressed grass

Jord’s pressed C4 grasses are a sustainable biomass source with high energy value, ideal for industrial processes that require heat and power. Grown on marginal or degraded lands, they do not compete with agricultural land or contribute to deforestation. As a perennial crop, they allow for multiple harvests per year, ensuring a continuous supply. Pressed grass can also be used as a feedstock for bio-based materials and biofuels.

## Pressed grass

| | |
|---|---|
| **Energy content** | ≥ 17,52 MJ/kg |
| **Moisture content** | ≤48% |
| **Ash content** | <5% |
| **Sulfur content** | ≤ 0,08 |

Renewable products

# Fuel pellets

Jord processes C4 grass into two types of pellets. White pellets are produced by directly pelletizing the pre-treated grass, resulting in compact, high-energy pellets with low ash and moisture content, ideal for power generation. Black pellets undergo an additional torrefaction step. Black pellets made of napier grass feature high energy content, mechanical durability and grindability, hydrophobic and low ash content.

### White pellets

| | |
|---|---|
| **Energy content** | ≥18 MJ/kg |
| **Moisture content** | ≤10% |
| **Ash content** | <5% |
| **Sulfur content** | ≤ 0,08 |

### Black pellets*

| | |
|---|---|
| **Energy content** | ≥ 20 MJ/kg |
| **Moisture content** | ≤5% |
| **Ash content** | <5% |
| **Sulfur content** | ≤ 0,08 |

*This information is subject to change and will be updated as soon as we have samples available for testing.

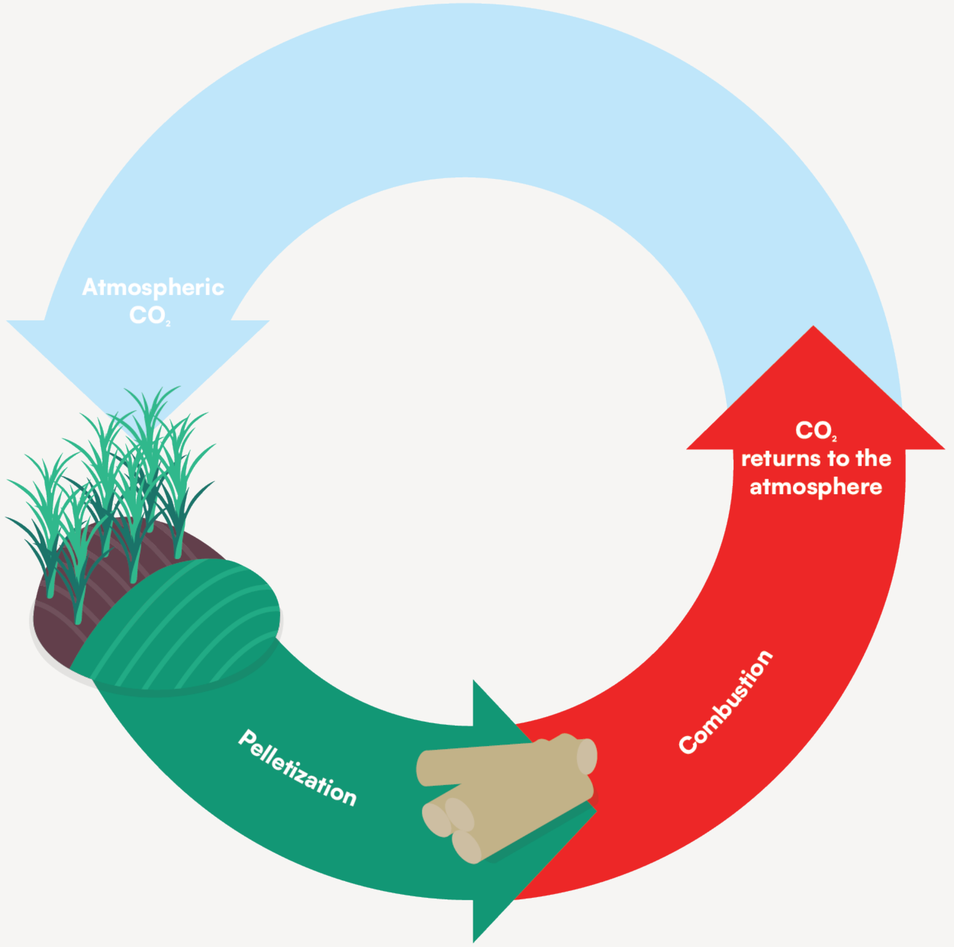
The transition

# Replacing fossil fuels

Pellets are one of the most versatile and efficient forms of solid biofuel, offering a high-energy, renewable alternative to fossil fuels.

When we burn fossil fuels, we release $CO_2$ that's been stored underground for millions of years, adding new $CO_2$ to the atmosphere and accelerating human-driven climate change. But with grass pellets, it's different. Burning these pellets aligns with nature's balanced carbon cycle. The $CO_2$ released during combustion is offset by the carbon absorbed by the grass as it grows, creating a sustainable, closed-loop system that nurtures our planet.

At Jord, we supply clients with substantial energy demands, using our pellets as a clean replacement for fossil fuels like coal in industrial heat and power generation. While coal is still widely used, switching to Jord's pellets or cofiring can significantly reduce fossil $CO_2$ emissions. Our fuel pellets are $CO_2e$ negative, making them a powerful choice for companies committed to sustainability.



Do you have hard-to-abate emissions?

# Carbon credits

At Jord, we offer a portfolio of carbon credits designed to address both carbon avoidance and carbon removal. This dual approach allows us to create tailored carbon solutions that meet the unique needs of businesses committed to reducing their carbon footprint.

## Fuel switch

**Mechanism:** Avoidance
**Pathway:** Fuel switch

Avoiding the release of new carbon into the carbon cycle and reducing reliance on fossil fuels. DNV, an independent certification body, has validated the methodology.

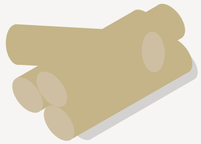
## Soil sequestration

**Mechanism:** Removal
**Pathway:** Soil carbon sequestration

Storing carbon in the soil and deep root systems of C4 grass, ensuring long-term sequestration. These credits are based on Jord's DNV-validated methodology.

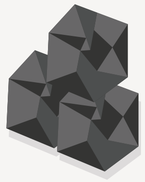
Environmental and social

# Impact



**~18,000 tons of pellets** produced annually.

+



**~20,140 tons of brown coal** could be replaced annually.

+


**~35,000 tons of new $CO_2$ e** are avoided from entering the atmosphere.

+

**570 ha of degraded soil** in the process of regeneration.

+

**+30 direct jobs** created in high unemployment and poverty-stricken areas.

# Partners

## LCA

CHM ANALYTICS

## Methodology validation

DNV

## Project partners

TEXEL®

Votion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