ENERGY MANAGEMENT PROGRAM

Updated as of May 2025

adecoagro

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ENERGY MANAGEMENT & EFFICIENCY PROGRAM

COMMITMENT

ENERGY PROGRAM
OUR COMMITMENT

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GENERAL COMMITMENT

Since our inception we have been working through sustainable production models to generate food and renewable energy, while being efficient in the use of natural resources.

In our **Environmental Policy** we state our commitment to **maximizing the generation of renewable energy** from by-products and residues, such as sugarcane biomass, vinasse, animal manure, or other by-products from our operations as well as to contributing to mitigate climate change by measuring our carbon emissions and implementing measures to reduce them.

In 2021, we created our **ESG Committee** to analyze and monitor the impact of sustainability trends on our business. During the ESG meetings, we analyze the environmental, social, economic and governance impacts for each of our businesses. The main environmental indicators measured in each business are carbon balance, water consumption, **renewable energy generated, energy consumption**, effluents and waste management.

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STRATEGY

ENERGY PROGRAM

Energy Transition Strategy

As renewable energy producers, we play a key role in ensuring energy security in the regions where we operate while supporting their transition to a greener energy matrix.

Our Strategy

Our Energy Strategy is based on two main pillars: reducing energy consumption and generating renewable energy:

Generating Renewable Energy

- Producing **ethanol** from sugarcane
- Producing **bioelectricity** from by-products (such as cow manure and bagasse)
- Producing and using **biomethane** for sustainable logistics
- Using **biomass** (such as rice husk) as fuel for rice-drying process
- Using **solar panels** to power sprinklers and fans for cow's comfort

Reducing energy consumption

- **Drones and machinery** for selective applications of phytosanitary products (reduces energy consumption)
- **Stripper headers i**n rice harvesters instead of draper headerss (reduce energy consumption through harvesting efficiencies)
- **Efficient irrigation technologies** (precision leveling and polypipes reduce water consumption and energy consumption related to irrigation and pumping)
- **Replacement of fuels**: transitioning to cleaner fuels

We focus on enhancing energy efficiency through technological improvements and innovations that reduce our energy intensity. Measuring our energy intensity is part of our strategy to monitor and enhance efficiency.

Energy Intensity

(GJ consumed per ton produced)

87% **of the energy we consume is self-generated and renewable**

ENERGY PROGRAM

Energy Transition Strategy

As renewable energy producers, we play a key role in ensuring energy security in the regions where we operate while supporting their transition to a greener energy matrix.

Driving Green Energy Growth

Each year, we generate **over 14 million GJ of renewable energy:** ethanol, biomethane and electricity.

We are already active players in the energy transition pathway as **20% of our sales in 2024 were green -** since they came from ethanol, bioelectricity and CBios (carbon credits) - and could reach up to 46% of our total sales when maximizing ethanol production (as in 2019).

ETHANOL

- Ethanol
- RenovaBio
- SAF

BIOELECTRICITY

- Sugarcane bagasse based
- Dairy biomass based
- Solar panels

BIOGAS

- Biogas and biomethane
- GAS-RECs

We use by-products of our dairy and sugarcane businesses to generate renewable energy

55% of the company's assets are destined for the production of renewable energy

ENERGY PROGRAM

Renewable Energy Production

ZOOM INTO ETHANOL

ETHANOL

We produce ethanol from sugarcane at our mills in Brazil.

Compared to gasoline, sugarcane-based ethanol reduces GHG by more than 87% and is the most efficient source of ethanol production in terms of m3/ha.

We have a capacity of production of 888,541 m3 in our mills

In 2024, we produced **533 thousand m3** of ethanol generating revenues of **USD 243 million**

RENOVABIO

Our three mills in Brazil are certified under the RenovaBio Program, and we were the first company to issue and sell carbon credits (CBios) through the Program.

In 2024, we traded **601,426 CBios**, generating revenues of **USD 8.5 million**

SAF

Our Angelica and Ivinhema mills received the ISSC CORSIA Plus certification for ethanol production intended for SAF.

This green fuel has the potential to reduce GHG emissions by up to 80% compared to fossil ones.

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Renewable Energy Production

ZOOM INTO BIOELECTRICITY

BAGASSE-BASED

We produce electricity from bagasse, a sugarcane processing by-product

We use part of this energy to power our own operations.

And the surplus, around 65% of the production, is sold to the local grid, being this energy enough to supply a city of nearly 1 million inhabitants.

The cogeneration capacity is 246 MW.

In 2024, we produced **1.1+ million MWh of bioelectricity**

DAIRY BIOMASS-BASED

We generate electricity through biodigesters using cow manure from our over 14,400 milking cows.

We have two biodigester-based plants with a combined installed capacity of 3.4 MW and a potential to generate around 25,000 MWh of electricity annually.

In 2024 we processed **128,712 tons of cow manure**, generating **16,477 MWh** of bioelectricity

SOLAR PANELS

We have a solar energy park located at our free-stalls with 1,550 solar panels that have an installed capacity of 0.5 MW. We use this energy to power fans and sprinklers that ensure the comfort and welfare of our cows.

In 2024, the solar park produced **407 MWh of energy**

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Renewable Energy Production

ZOOM INTO BIOGAS & BIOMETHANE

BIOGAS & BIOMETHANE

We produce biogas from concentrated vinasse, a by-product of ethanol production.

Biogas can be converted either into renewable electricity or biomethane. We are already using biomethane as biofuel to power our fleet vehicles and trucks at our mill.

In 2024, 130+ light vehicles, 10 trucks, 2 tractors and 6 irrigation pumps were powered by the biomethane we produced

GAS-REC

Our biogas unit in Brazil is certified to issue and sell Renewable Natural Gas Certificates (GAS-REC).

These certificates allow Brazilian industries to voluntarily decarbonize the gas they consume in their operations.

In 2022, we became the first company in Brazil to commercialize GAS-RECs.

Our biodigester in Ivinhema

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TECHNOLOGY AS AN ALLY

ENERGY PROGRAM

Technology as an Ally

TECHNOLOGY LEVERAGING ENERGY

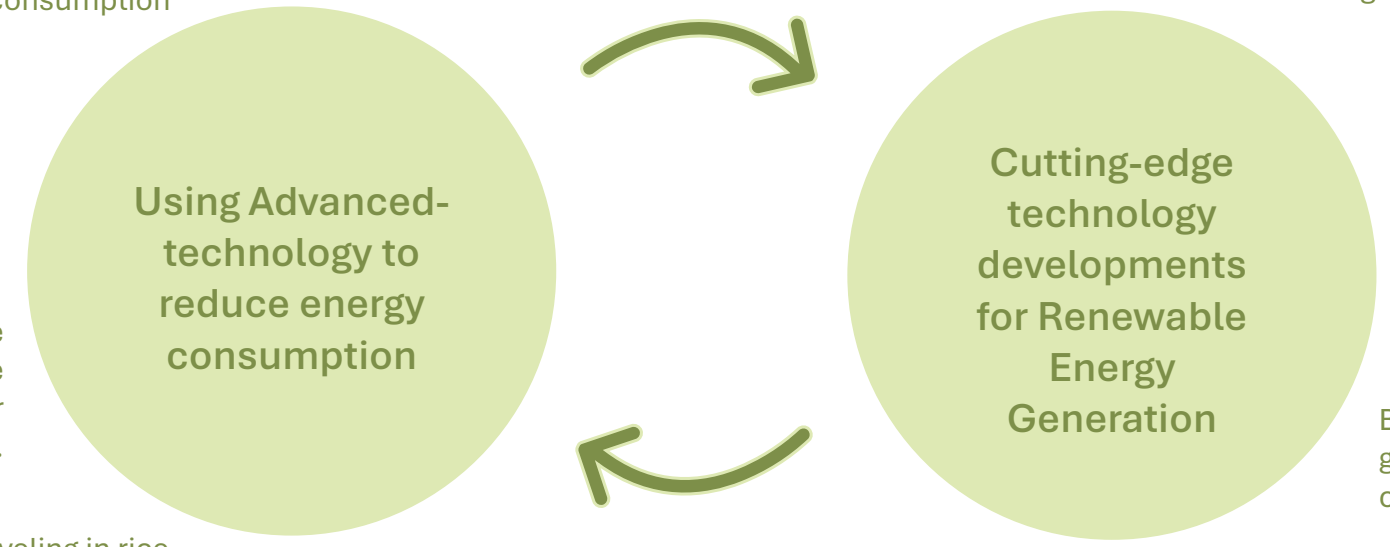
Our sustainable development model leverages technology to enhance efficiency in the various processes of our production chain. Our innovative mindset is based on the pillars of technology development, R&D projects and collaborative network.

Two-row harvesters, grunners and triple row trains in sugarcane fields increase efficiency and reduce up to 46% of diesel consumption

Implementing drones and solar-powered robots for selective application in sugarcane fields reduce fuel consumption

Using stripper headers in the harvesters of our rice fields reduce diesel consumption by 43% per hectare.

Using polypipes and precision leveling in rice irrigation - as well as technologies such as IoT, buoys - reduces water and energy consumption



3 Mills producing Ethanol

Bioelectricity generation from sugarcane bagasse (+1.1 million MWh annually)

Biodigester producing biomethane from vinasse replacing diesel consumption

1,550 solar panels powering sprinklers and fans for cow comfort in our dairy operations

Biodigesters in our Dairy operations generating renewable electricity from cow manure (25,000 MWh annually).

IN PROGRESS Analyzing the use of vinasse to produce biodiesel

IN PROGRESS Constructing new biodigester for biomethane production in sugarcane operations

More than USD 500 MILLION invested in all of these projects over the years

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PROSPECTS & OPPORTUNITIES

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Prospects and Future Opportunities

"FUEL OF THE FUTURE" BILL IN BRAZIL

In 2024, Brazil signed the Fuel of the Future Law (Federal Law 14.993/2024) which aims to regulate and set targets for the use of biofuels and renewable fuels.

These initiatives will help to reduce carbon emissions related to fossil fuel usage and to switch to a low carbon mobility.

Main takeaways:

- **Ethanol in gasoline**: minimum blend rises to 22% and maximum rises to 35% (~+4%);
- **Biomethane requirement** demand of biomethane should stand at 1% of natural gas demand in 2026, reaching 10% in 2036.
- **SAF**: increase in the blend with jet fuel, from 1% in 2027 to 10% in 2037.
- **Carbon Capture and Storage**: Regulates storage in geological formations, with authorizations valid for 30 years;

OPPORTUNITIES FOR AGRO

Additional demand of ethanol →	Our mills have the capacity to produce anhydrous ethanol, and dehydrate our hydrous stocks by using our own bagasse as fuel
Additional demand of biomethane →	Our biodigester in Ivinhema mill has the capacity to produce 6,000 nm3/day of biomethane, which equals to an annual replacement of 2 million liters of diesel
SAF 1-10% in jet fuel blend between 2027-2037 →	Our Angelica Mill is certified by ISCC Corsia Plus, as per required for SAF production
Carbon Capture and Storage Opportunity →	As ethanol producers, for each cubic meter of ethanol produced, 0.8 ton of CO_2 is generated, which we could sequester and storage underground

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Please CLICK HERE to access our Sustainability website

Please CLICK HERE to access our 2024 Integrated Report

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