BELÉM ACCORD

BIOFUELS AND THE GLOBAL ENERGY TRANSITION

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Brazil arrives at COP30 with a clear message to the world: **large-scale decarbonization of mobility is not a future aspiration – it is already a reality.**

For more than five decades, the country has demonstrated that it is possible to grow, generate renewable energy, and protect the planet simultaneously.

The Brazilian experience with **ethanol and other sustainable fuels** represents a successful model of innovation, circular economy, and consistent public policies — such as **RenovaBio** — that have enabled the country to develop a diversified and resilient energy matrix.

Currently, **bioenergy accounts for 29% of Brazil's energy supply**, complemented by an additional **20% from other renewable sources**. This framework consolidates one of the most renewable energy matrices in the world and reflects Brazil's long-standing commitment to sustainability.

Brazil is self-sufficient in the production of ethanol from sugarcane and corn, **with the capacity and potential to meet both current domestic and international market demand**, as well as to supply emerging needs.

Sugarcane residues also generate bioelectricity from bagasse and straw, producing more than **21,000 GWh in 2024**, equivalent to **4% of Brazil's total electricity consumption.**

Ethanol is a mature, low-carbon-intensity solution with immediate potential for expansion by promoting land restoration and sustainable agricultural practices to enable low carbon biofuels production without compromising food security. Together with **biodiesel, biogas, and biomethane**, these renewable sources reinforce a diversified and reliable pathway toward the **energy transition**, contributing simultaneously to climate mitigation, energy security, and rural development.

Beyond national borders, **ethanol stands as a key global instrument for climate mitigation**, particularly when combined with innovative technologies such as **flex-fuel hybrid vehicles**, which integrate internal combustion and electric propulsion.

This synergy demonstrates that **biofuels and electrification are complementary**, offering immediate, scalable, and cost-effective pathways to achieve emissions reduction targets.

Significant production of biogas and biomethane is possible to be recovered from existing and non-used residues in Brazil, specially from the sugar cane industry and municipal organic waste. It has low or negative carbon intensity and has the potential to produce biomethane in 120 million Nm3/day, which could substitute 60% of Brazilian diesel consumption. As liquefied biomethane (BioLNG) can also help reduce emissions in the shipping industry and together with ethanol fermentation provide biogenic CO2 for the sustainable fuel industry.

Biodiesel is another important sustainable fuel experience in Brazil being used 15% mixed to diesel in regular national fleet (E15). Different vegetable oil sources can be explored, especially grown on degraded areas. The residues from this production also support animal feed in strong circular economy approach. Vegetable oils are key economical basis for new sustainable fuels like Hydrogenated Vegetable Oil (HVO) and Sustainable Aviation Fuel (SAF).

The **International Energy Agency (IEA)**, in its report Delivering Sustainable Fuels – Pathways to 2035, emphasizes that **liquid biofuels, biogases, renewable hydrogen and hydrogen-based fuels** are essential for sectors that remain dependent on fuel-based energy, such as **aviation, maritime transport, and heavy industry**.

In parallel, both the **International Civil Aviation Organization (ICAO)** and the **International Maritime Organization (IMO)** have acknowledged that achieving **net-zero emissions by 2050** will depend largely on the development and deployment of **sustainable fuels**, including ethanol-based solutions.

The **Global Stocktake (GST)** has reaffirmed this convergence of perspectives: 161 out of 168 countries prioritized renewable energy generation in their Nationally Determined Contributions (NDCs), and 29 explicitly included biofuels in their transport strategies.

Currently, around **70 countries and regions operate minimum biofuel blending mandates**, a clear signal of the growing international consensus on the role of sustainable fuels in advancing the energy transition and enhancing energy security.

To consolidate and expand these achievements, **long-term policies and predictable financial mechanisms** are essential to guarantee regulatory stability, competitiveness, and infrastructure development.

The **Baku–Belém Roadmap** stands as a cornerstone for strengthening the international financial architecture, with the potential to mobilize up to **US$ 1.3 trillion** in climate finance and enable the **tripling of renewable energy** and the **doubling of energy efficiency** by 2030 — an estimated US$ 29–30 trillion investment between 2025 and 2030.

The benefits of such transformation extend well beyond emissions reduction.

The sustainable fuels agenda also promotes **social inclusion, green employment, agricultural resilience, and circular economy models**, particularly in developing nations.

In Brazil, the sugarcane and bioenergy sector generates thousands of **skilled rural jobs**, enhances **energy access**, and directly contributes to the **Sustainable Development Goals (SDGs)** by integrating environmental, social, and economic dimensions of sustainability.

During the **Pre-COP30 meeting**, the **Government of Brazil launched the Belém *Commitment for Sustainable Fuels – Belém 4x*,** drawing upon the conclusions of the IEA report *Delivering Sustainable Fuels – Pathways to 2035*. The initiative calls for a global effort to **quadruple the production and use of sustainable fuels** and to pave the way toward a **just and inclusive energy transition.**

Given the centrality of sustainable fuels for a net-zero pathway up to 2050, and the trigger to spur energy transition already agreed at the Global Stocktake, **it is now essential that COP30 transforms this collective momentum into concrete action. To that end, the following recommendations are proposed as practical steps to support countries and stakeholders to accelerate the deployment of sustainable fuels worldwide.**

RECOMMENDATIONS TO COP30

- **Acknowledge** the strategic role of sustainable fuels in supporting the implementation of Parties' NDCs and in advancing the energy transition consistent with the Global Stocktake outcomes.

- **Endorse** the goal of **quadrupling the production and use of sustainable fuels by 2035**, emphasizing low-emission biofuels such as ethanol, which already demonstrate scalability and measurable GHG reductions.

- **Encourage** the adoption of **long-term blending mandates and regulatory frameworks** that facilitate the incorporation of sustainable fuels according to national contexts and updated NDCs.

- **Promote** investment and finance through **predictable, concessional, and innovative financial instruments**, including **differentiated interest rates, favorable payment terms, and targeted infrastructure funding**, in line with the **Baku–Belém Roadmap.**

- **Incorporate the role of sustainable fuels at the United Arab Emirates Dialogue** on implementing the Global Stocktake outcomes up to the GST 2 in 2028.

- **Foster** international cooperation aimed at **harmonizing sustainability criteria** and methodologies for life-cycle assessment, recognizing sustainable fuels superior GHG performance as a proven decarbonization pathway.

- **Recognize** the socio-economic co-benefits of sustainable fuels — such as energy security, job creation, and rural development — as integral elements of a **just and inclusive transition.**

- **Support capacity building, technology transfer, and dissemination of best practices** to accelerate the deployment of sustainable fuels, particularly in developing regions.

A CALL FOR COORDINATED GLOBAL ACTION

Building on these recommendations, it is equally vital to strengthen collective ambition through coordinated global action. The energy transition requires integrated efforts across sectors, countries, and financial systems — aligning national strategies with international cooperation to ensure a fair, inclusive, and technology-open path toward decarbonization.

The **Action Agenda** should mark a decisive milestone in implementing the global climate agenda by:

- **Tripling renewable energy capacity and doubling energy efficiency;**
- **Accelerating the adoption of zero- and low-emission technologies in hard-to-abate sectors;**
- **Transitioning away from fossil fuels in a just, orderly, and equitable manner;**
- **Promoting land restoration and sustainable agriculture** that enables low-carbon biofuels production without compromising food security; and
- **Fostering the harmonization of carbon markets and accounting standards**

The Brazilian sugarcane and bioenergy sector reaffirms its commitment to **concrete and collaborative climate action**, advancing initiatives that deliver **energy transition, innovation, green employment, and sustainable development** worldwide.

Brazil's long-standing leadership in bioenergy positions the country as a **trusted partner** in the pursuit of a cleaner, more resilient, and inclusive global energy future.

Ethanol is a cornerstone of this transformation — a proven, scalable, and sustainable solution that bridges ambition and action.

The future of energy is renewable. And it is already underway.

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