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**SAF Potential in Colombia: from
Colombian soil to decarbonizing aviation**



ICAO

2023 ICAO
STOCKTAKING

& SAF-LAB EXHIBITION



SAF Potential in Colombia Liquid Renewable Energy

From Colombian soil to
decarbonizing **transport**

Carolina Rojas – Colombian Biofuels Federation

Montreal, July 11, 2023

Colombian Biofuels Federation (Fedebiocombustibles)

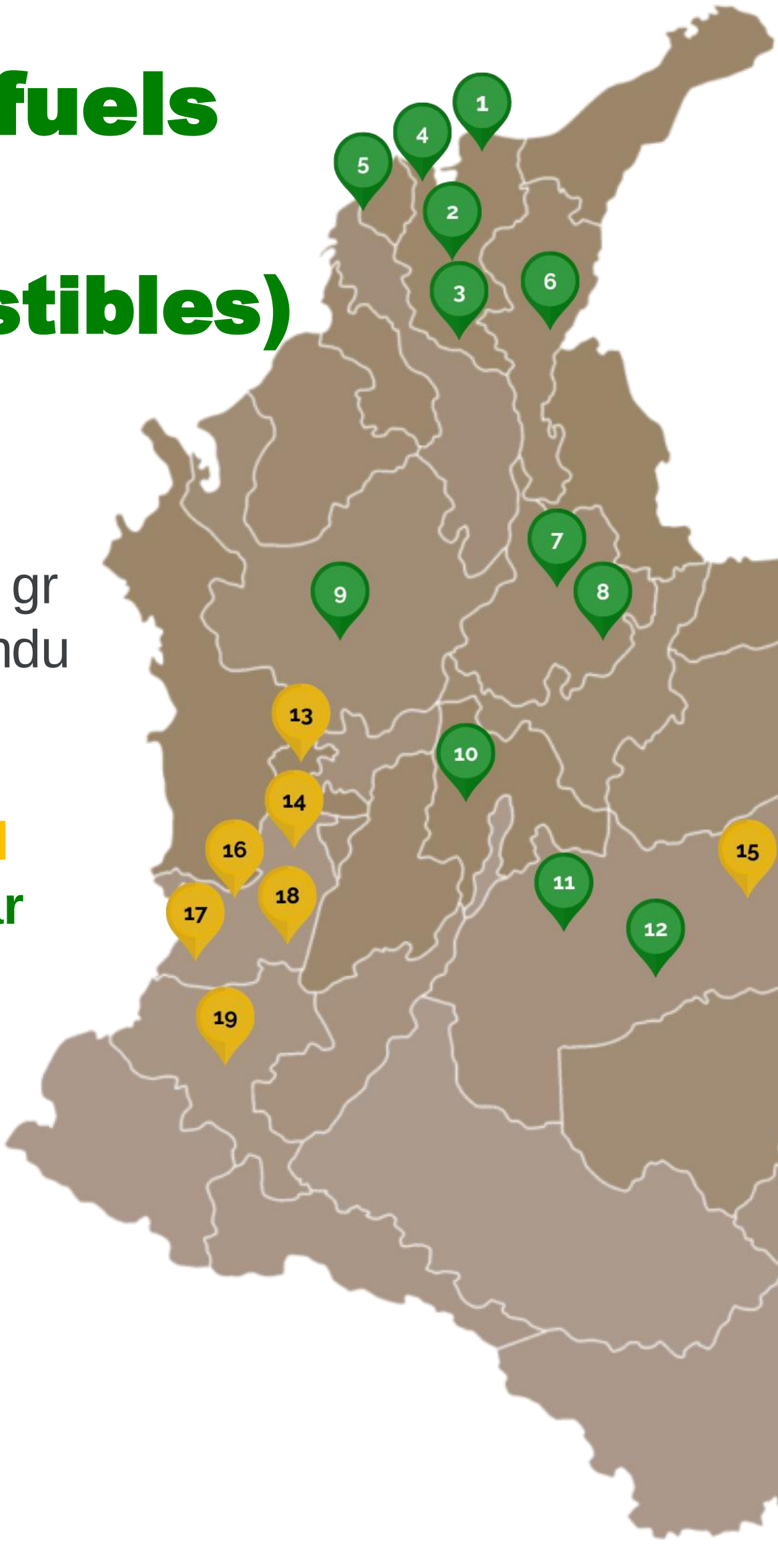
Our Mission

Contribute to the sustainable growth of Colombian biofuels industry.

Represent **renewable liquid energy** producers from **sugar cane** and the **Palm oil** that grow in the Colombian fields.



Current Blends
B10 and E7



Biodiesel Production Plants

1	Biosc	Magdalena
2	Odin energy	
3	Bgreen	
4	Romil de la Costa	Atlantico
5	Biodiésel de la Costa	
6	Oleoflores	Cesar
7	EcoDiesel	Santander
8	Alpo	
9	Biodiésel y Derivados	Antioquia
10	Bio D	Cundinamarca
11	Manuelita	Meta
12	La Paz Investments	



Bioethanol Production Plants

13	Ingenio Risarlda	Risaralda
14	Ripaila Castillo	Valle del Cauca
15	Bioenergy	Meta
16	Ingenio Providencia	Valle del Cauca
17	Manuelita	
18	Ingenio Mayaguez	Cauca
19	Incauca	

Colombia has an established **biofuels agro-industry**

Biodiesel

- 13.7kbd (208MG)*
- 10% blend*
- **Current biodiesel production capacity:**
235MGY

Ethanol

- 7kbd (394ML)*
- Average 7% blend
- **Current Ethanol production capacity:**
756MLY

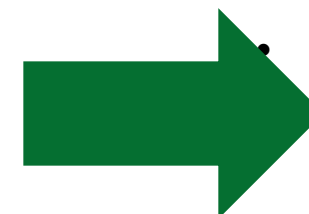




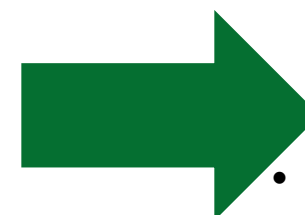
Colombia is working towards enabling SAF: regulatory framework

Regulatory Framework

- **Climate Action Act (L2169/2021)**

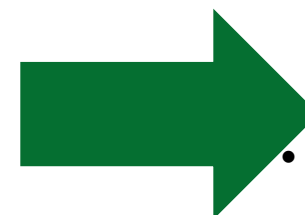


- **Energy Transition Policy (2022)**



- **National Development Plan (2022 – 2026)**

- Advanced Bios
- SAF



Included Provisions

ARTICLE 12. Measures in the transport sector. ... 11.
*"The national government, through the Ministries of Mines and Energy and Transport, **will promote the development and use of sustainable aviation fuels (SAF)**, in order to contribute to the reduction of greenhouse gas emissions from the transport sector.."*

*"...to advance in the identification of alternative energies, the Ministry of Mines and Energy, in 2023, will establish **the sectoral roadmap for...** ...the definition, analysis, design, evaluation and formulation of guidelines and regulations for the promotion of the alternative use of biofuels and... ...the requirements of relevant aspects for the use of renewable diesel, biojet, **Sustainable Aviation Fuels (SAF)**, or other sustainable fuels".*

*"...In addition, **roadmaps and programs will be defined and implemented** for biomass, biogas, small hydroelectric uses, geothermal energy, ocean energy and advanced biofuels including, but not limited to, **sustainable aviation fuels.**"*



Colombia has potential in feedstock and renewable energy for SAF production

Feedstock Availability

- **Palm Oil***
 - Palm Fruit: 7.8 MTon
 - Current Production: 1.8M tons
- **Sugar Cane****
 - Cane milling: 22,8 MTon
 - Sugar and ethanol eq Production: 2,4MTon
- **Waste Biomass*****
 - Potential: 71.0 Mton

Renewable Energy and Hydrogen

Renewable Energy

- 70% hydro energy generation
- 2.000 MW of solar and wind projects under construction

Green Hydrogen Potential****

- 5.8 Mt (including offshore wind) 1-3GW to 2030

*Fedepalma

** Asocaña

*** Mining and Energy Planning Department (UPME)

****National Hydrogen Strategy and Road Map



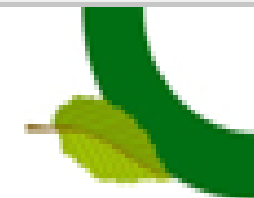
And is advancing in the understading of its feedstock and project feasibility

Feedstock Feasibiliy

- **ISCC** (World Bank financing)
 - Life Cycle Analysis (LCA) of palm oil for SAF
- **World Bank** – Orinoquía Region
(Ricardo Energy Consultants)
- **LATAM MIT**
- **Washington State University** ASCENT 93
- **Aeronáutica Civil Colombiana**
(preliminar study)

Project Feasibility

- At least **3 private pre-feasibility studies** underway.
 - 50-100 MGY
- Technologies HEFA – FT - ATJ



Final thoughts: Colombia as part of the solution for SAF

- SAF production will require an **increased supply of feedstocks** to respond to aviation decarbonization targets.
- **Colombia has an established biofuels industry** based on feedstocks (palm oil and sugar cane) that can be expanded to supply SAF projects.
- Additionally, Colombia has a **clean energy matrix** and potential in other renewable energy (solar, wind, biomass), to support **green hydrogen production**.
- **Colombia can be part of the solution to decarbonize aviation:**
 - Recognizing feedstock availability and potential
 - Appropriate regulatory and incentives framework
 - Clear aviation decarbonization targets





The Colombian biofuels industry looks forward to contributing to the decarbonization of the world's aviation sector.



Es Bio, Es Transición, Es buena Energía



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