

# The Implementation of RenovaBio: National Biofuel Policy

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## Polycymaking



PRESIDENT OF REPUBLIC

National Energy Policy Council - CNPE

MINISTÉRIO DE  
**MINAS E ENERGIA**



## Regulation and Policy implementation





**Brazil is the 4th largest  
consumer of  
transportation fuels  
(116 billion liters in 2015)**

## SUPPLIERS

**18** Refineries  
**383** Ethanol plants  
**363** Importers e Exporters of Oil and Oil products  
**49** Biodiesel producers

## DISTRIBUTORS

**167** Distributors of Liquid Fuels  
**20** Distributors of LPG  
**6** Distributors of Aviation Fuels

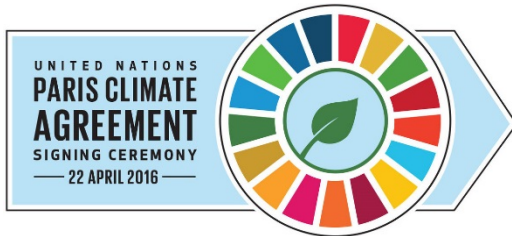
## DEALERS

**41,165** Retailers  
**63,831** Resellers of LPG  
**356** Retail Carrier Dealer  
**249** Aviation Resellers  
**17** Retail Carrier Dealer - rivers

## CUSTOMERS

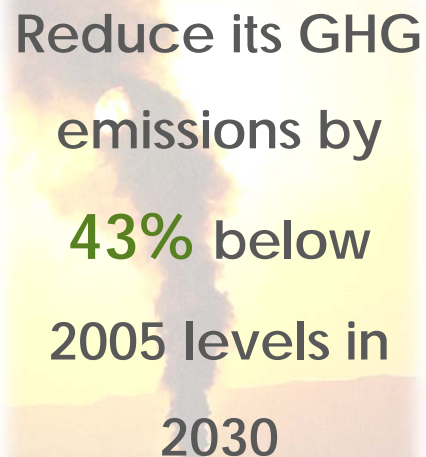
**15,617** Supply points facilities

**Total: 122,241 players**



➤ 09/12/2016 → Brasil ratified the Paris Agreement

## BRAZIL INTENDS TO...



Reduce its GHG  
emissions by  
**43%** below  
2005 levels in  
2030

Achieve **45%** of renewables in the energy mix, expanding “ (...) increasing the share of **renewables (other than hydropower)** in the power supply to at least 23% by 2030”

Increase the share of sustainable biofuels in Brazil’s energy mix to **18%** “ (...) by **expanding biofuel consumption, increasing ethanol supply**, including by increasing the share of advanced biofuels (2<sup>nd</sup> generation), and increasing the biodiesel in the diesel mix”

- **Renewable Fuels Standard (RFS) – United States**

- Consumption target of 36 billion gallons of biofuels in 2022, out of which 21 billion are "advanced" biofuels (as Brazilian sugarcane ethanol)



- **Low-Carbon Fuel Standard (LCFS) - California**

- Reduce by 10% the intensity of CO<sub>2</sub> emissions from transport fuels by 2020, taking into account the life cycle of the biofuel



- **Renewable Energy Directive – European Union**

- All Member States must mandatorily obtain 10% of its energy for transport from renewable sources up to 2020



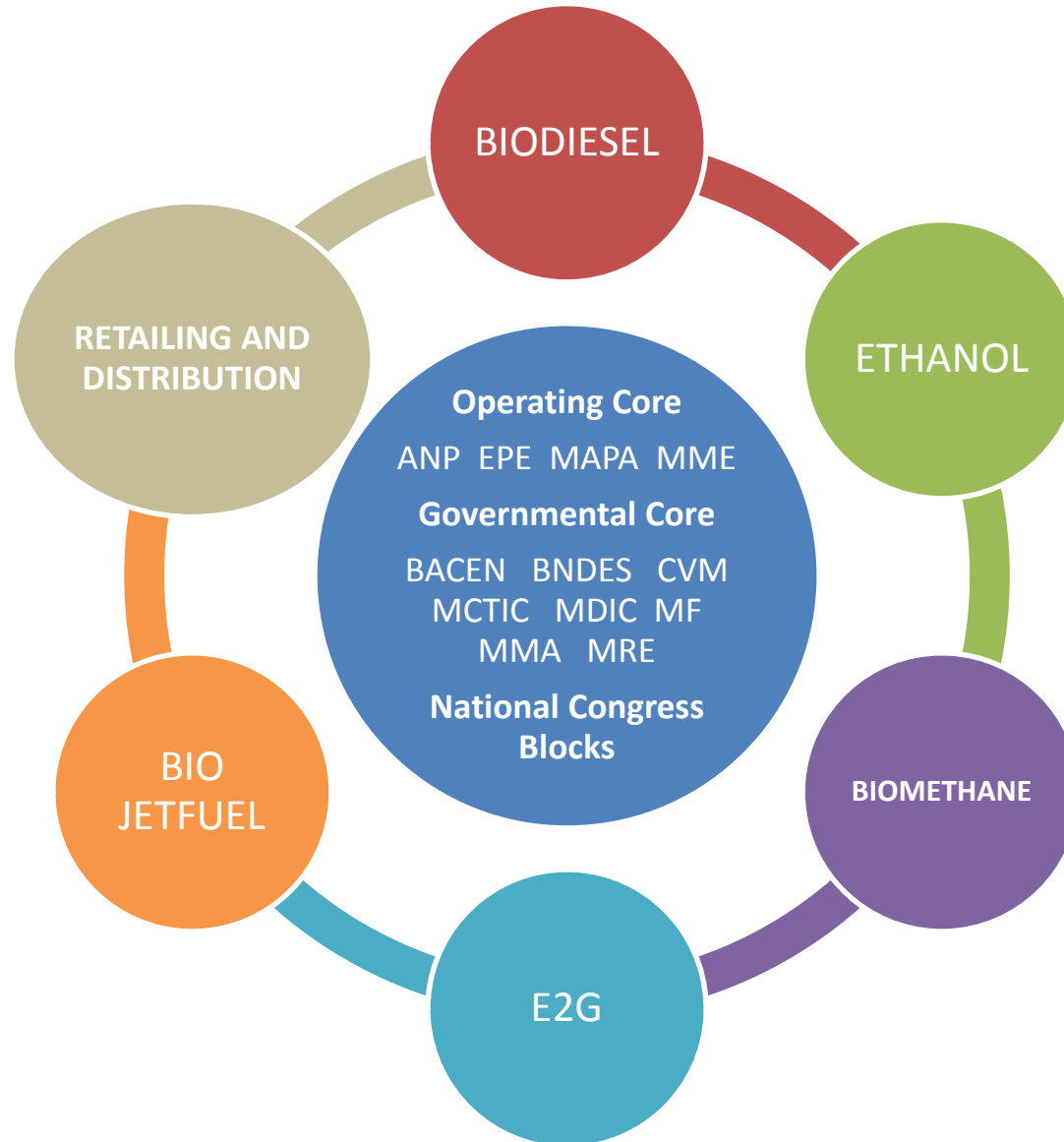


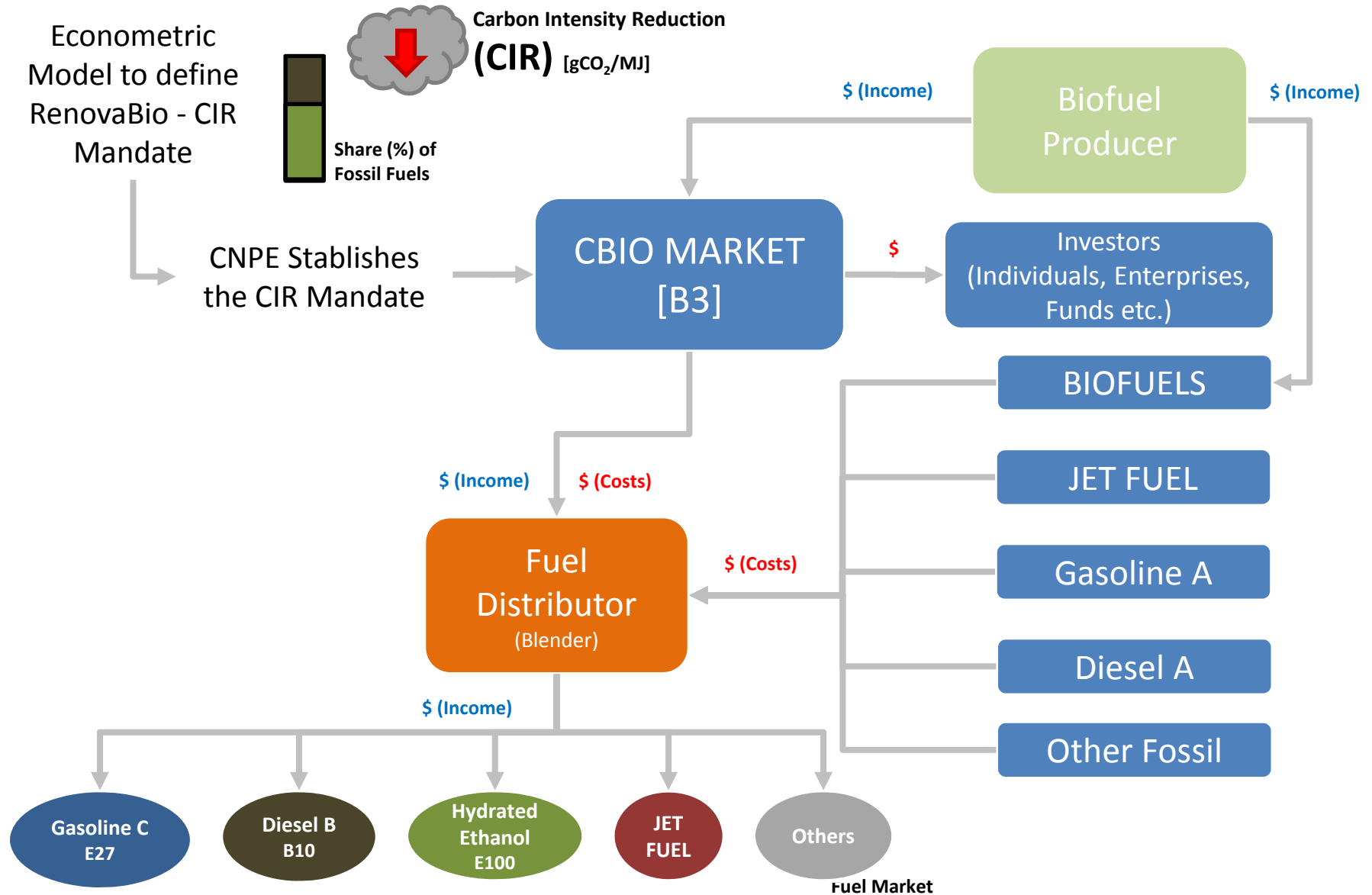
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Gás Natural e Biocombustíveis

# Dialogue and Transparency



RenovaBio

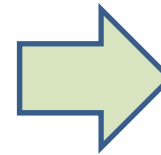








- Model and Emission Factors based on Life Cycle Assessment
- Input of agricultural data and industry data



## ENERGY AND ENVIRONMENTAL EFFICIENCY RATING



RESULTS  
Emissions of biofuel  
from producer A



Fossil used as  
reference

*Each producer will be evaluated individually*

CNPE

Set national target

Climate  
Change  
Committee

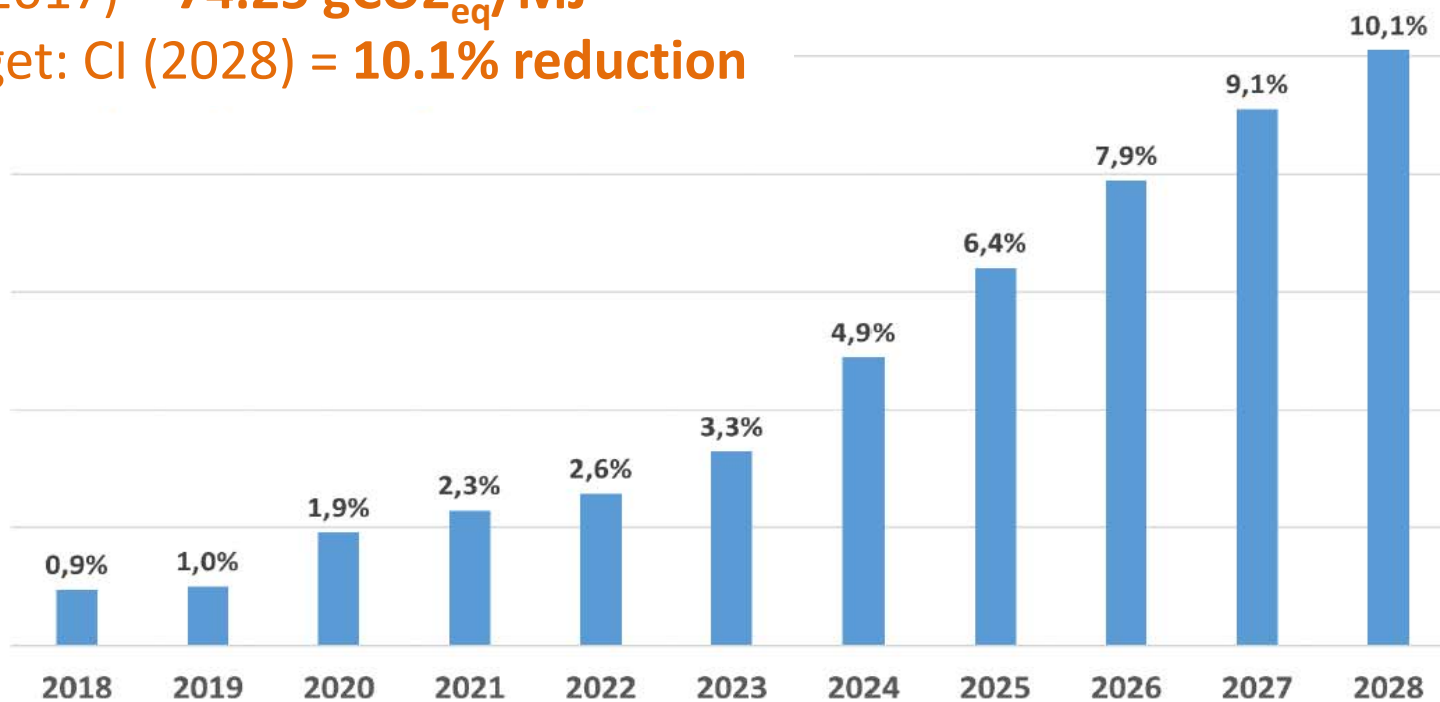
RenovaBio  
Committee

Public Consultation  
30/04 – 16/05

- o Created by Decree nº 9.308/2018
- o Operation: Ministerial Ordinance nº 103/2018
- o Provide technical support to CNPE (National Council for Energy Policy), which will define annual mandatory GHG reduction targets for fuel sector based on the recommendation of both Committees.
- o Suggest the maximum limits of Brazilian emissions reduction targets, considering commitments made under Paris Agreement, consumer's interest and domestic fuel supply
- o Coordination: Ministry of Mines and Energy
- o Other Ministries (Agriculture, Environment...), public and private institutions, specialists will attend

**Target definition: CNPE Resolution nº 5/2018  
(6/5/2018)**

CI (2017) = 74.25 gCO<sub>2</sub><sub>eq</sub>/MJ  
Target: CI (2028) = 10.1% reduction



## Fuel Transport Matrix

Carbon Intensity Reduction Target	-10% (2028)
Share of biofuels	20% -> 28.6%
Share of fossil fuels	80% -> 71.4%
External dependence	11.5% -> 7%

## CBIO = R\$ 34.00

Fuel	Price (2028)
Gasoline A	+0.7%
Diesel A	+1.1%
Jet Fuel	+1.6%
Anhydrous ethanol	-2.3%
Anhydrous ethanol	-2.1%
Biodiesel	-2.4%
Gasoline C	-0.1%
Diesel B	+0.6%

Source: MME, 2018.

Fuel	2018 (MM m <sup>3</sup> )	2028 (MM m <sup>3</sup> )
<b>Otto Cycle (gasoline eq)</b>	<b>56.0</b>	<b>69.5</b>
<i>Gasoline A</i>	31.1	30.0
<i>Anhydrous Ethanol</i>	11.5	11.1
<i>Hydrous Ethanol</i>	15.2	36.0
<i>Total Ethanol</i>	26.7	47.1
<b>Diesel Cycle</b>	<b>56.9</b>	<b>73.9</b>
<i>Diesel A</i>	51.2	62.8
<i>Biodiesel</i>	5.7	11.1
<b>NGV</b>	2.5	2.5
<b>Biomethane</b>	0	0.25
<b>Jet Fuel</b>	7.2	9.5
<b>BioJet Fuel</b>	0	0.36

Source: MME, 2018.

Category	Projects	US\$ (billion)
Ethanol Mills	<ul style="list-style-type: none"> <li>- 19 new units</li> <li>- 37 expansion</li> <li>- 9 new corn ethanol mills</li> <li>- 25 new second generation ethanol mills</li> </ul>	14.07
Agriculture		1.03
Pipeline	<ul style="list-style-type: none"> <li>- 1 Ethanol pipeline</li> </ul>	1.02
Biodiesel	<ul style="list-style-type: none"> <li>- 40 new units</li> <li>- 36 soybean oil extracting plant</li> </ul>	4.09
<b>Total</b>		<b>20.21</b>

Source: EPE, 2018.



Brazil is the 4rd largest consumer of transportation derivatives, but it has significant external dependence.



RenovaBio will contribute to Brasil's NDC in the Paris Agreement, guarantee the national supply of fuels and expand the supply of biofuels with regulatory predictability.



RenovaBio's investment will inject US\$ 20.21 billion in Brazilian economy.



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