

## **RENOVABIO – THE NEW BRAZILIAN BIOFUELS POLICY**

On December 26, 2017, the Brazilian National Biofuels Policy, known as RenovaBio, was published after being approved by the Congress. The bill aims to reduce the carbon footprint of the national fuel mix as well as ensuring a long-term demand for low carbon fuels in the country. These goals are underpinned by Brazilians commitments at the Paris Agreement for climate change and aligned with the local supply and demand (S&D) forecast over the next decades. The new regulatory framework should be built throughout 2018 and 2019, and the carbon credits trading should come into effect in early 2020. The program aims specifically to:

- Promote the reduction of greenhouse gases (GHG) emissions by the fuel mix, in accordance with the ambitious commitments established under Paris Agreement in December 2015 - 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change;
- Contribute to the security of domestic fuel supply by encouraging biofuels production and use.

These goals reflect the strategic role played by biofuels (all kinds of biofuels can be part of the Program) in the domestic energy matrix and its contribution to Brazilian energy security. Furthermore, they reflect the core principles upon which RenovaBio is based: predictability and environmental, economic and social sustainability.

It is important to highlight that RenovaBio does not require any subsidies or tax increase to biofuels, nor create a carbon tax or offer any tax break for biofuels producers. The core of the Program is to create a market-based mechanism that incentivizes the search for better energy efficiency together with the reduction of the carbon footprint.

### **HOW WILL RENOVABIO WORK?**

In order to accomplish its objectives, RenovaBio is founded on three pillars:

- Annual decarbonization targets set by the government for a minimum 10-year period;
- Issuance of GHG emissions reduction certificates, named “CBio” in Portuguese (an acronym for “*Crédito de Descarbonização*” – Decarbonization Credit);
- Biofuels production certification through life cycle analysis.

Firstly, the National Council for Energy Policy (CNPE) will recommend an annual decarbonization targets (gCO<sub>2</sub>eq per Mega Joule) to be set by the executive for a minimum period of 10 years. Then, the National Agency of Petroleum, Natural Gas and Biofuels (ANP in Portuguese) will split the national mandatory target into individual targets to be applied to all fuel distributors in proportion to their respective shares in the fossil fuel market of the previous year.

In its turn, each fuel distributor may accumulate a certain volume of “CBio” pursuant to their strategy to achieve their targets. The fuel distributors can only prove their compliance to their individual targets by acquiring CBio at the same volume of their obligations; otherwise, they will be liable to penalties. The current penalties include fines that range from R\$ 100.000 up to R\$ 50 million (around USD 15 million). Alternatively, ANP can also impose administrative and monetary sanctions.

## **WHAT DOES CBIO MEAN?**

Similar to the US Renewable Identification Number (RIN), “CBio” is a tradeable certificate. **One CBio corresponds to a reduction of one ton of carbon dioxide equivalent (CO<sub>2</sub>eq), in comparison to fossil fuel emissions.**

RenovaBio recognizes that different biofuels have different capacities to contribute to GHG emissions reduction, as well as the California’s Low Carbon Fuel Standard (LCFS) and the Renewable Fuel Standard (RFS). Therefore, each fuel will be graded with a specific level of carbon emissions, which will be defined based on its life cycle assessment and its potential to meet the decarbonization target. Hence, biofuels produced with lower carbon intensity (relative to liquid fossil fuel) will generate more CBio per volume unit.

Authorized biofuel producers will issue CBio according to the volume of each invoice of their biofuel sales. Imported biofuel will also be certified. The CBio generated by biofuel producers will be sold in the Brazilian stock exchange market. Fuel distributors may buy CBio in order to comply their individual mandates.

The ratio between the quantity of CBio that fuel distributors must purchase to meet their targets and the quantity of certificates available in a given year will set its price. In this context, demand for CBio will directly depend on the national annual decarbonization target and, ultimately, on market factors, such as gasoline prices, biofuels supply and fuel-efficient vehicles.

It is worth mentioning that the fuel distributor must prove achievement of his individual target in accordance with his commercial strategy, without prejudice to other mandates determined in specific laws, such as the current national mandate of 27% addition of ethanol to gasoline.

Another important aspect of the RenovaBio policy is that it offers flexibility to fuel distributors to meet part of their individual targets in the following year. It is because up to 15% of the individual distributor target for a given year may be proven in the subsequent year, as long as he has met full compliance with his mandate in previous year. This flexibility will induce equilibrium in the market as the distributor may use it as a strategy of for regulating the price of CBIO.

## **THE CERTIFICATION OF THE PRODUCTION**

Life cycle assessment is a central element of the RenovaBio policy as it is used to measure the contribution of the each biofuel in the decarbonization process.

RenovaBio adopts a mechanism for qualifying biofuels according to their respective levels of energy-environmental efficiency through an individual and voluntary certification process, which is conducted by inspection companies nominated by the Ministry of Mines and Energy (MME).

It is worth noting that all biofuels consumed in Brazil, produced domestically or even imported, are subject to the above certification process, always on a voluntary basis. However, once joining the Program, the agro-industrial unit (biofuel producer) is obliged to provide technical parameters of its production process, including the all stages of production, treatment and

conversion of biomass to biofuel, in order to feed the “**RenovaCalc**”, RenovaBio's official calculation tool.

RenovaCalc counts the carbon intensity of the biofuel (in g CO<sub>2</sub> eq./MJ) and compares it to its equivalent fossil fuel, generating the “Energetic-Environmental Efficiency Score”. The combination of this score with the volume of biofuel produced results in a specific amount of CBIO.

Compliance of the data reported in RenovaCalc for the calculation of the Energetic-Environmental Efficiency Score and the production volume declared by the producer is verified by a third party inspection, which generates the Biofuel Certificate of Efficient Production.

As a result, producers that are more efficient are rewarded with the possibility of issuing more financial assets (CBio) proportionally to the score of the biofuel produced. Suppose that, in its life cycle assessment, an ethanol mill with a production capacity of 100 thousand m<sup>3</sup> is rated with 90 score (out of a scale from zero to 100) due to its ability to reduce GHG emissions. Then, this mill will have 9 million CBios to sell. Now, consider another mill with the same production capacity but now with a 50 score. This mill will have 5 million CBios to trade at the stock market. This is exactly the incentive instrument for energy and environmental efficiency RenovaBio introduces in the Brazilian fuel market.

## **IN CONCLUSION**

RenovaBio is 100% market oriented program. The main idea of RenovaBio is to create a Policy able to separate what the biofuel producer receives for fuel from what he should receive for providing the public good of decarbonization and improving air quality. Biofuel producers will receive additional revenue from CBio's sales to other interested parties. Moreover, it should be noted that the CBio market may, over time, become a reference in the pricing of the carbon market - increasing biofuels' share in final energy demand on transport, in compliance with sustainable practices and increased energy-environmental efficiency.

- CBio implies an additional income to producers and importers, beyond the price received by them due to biofuels sales in regular market. Simultaneously, the distributor, who must purchase CBio in order to meet his individual target, is allowed to transfer (or not, accordingly to its commercial strategy) the respective value of this Certificate to the market price. The proportion of this possible price transfer will depend on the market fundamentals and commercial strategies of each distributors.

Incentives to agricultural productivity gains and industrial efficiency encouraged by RenovaBio may avoid an increase of biofuels production costs, despite domestic demand growth for those renewable sources.

RenovaBio is poised to take a radically new approach to expand biofuels supply in Brazil, favoring the decarbonization of fuel sector. Moreover, it has the potential to lift the biofuels sector expanding its production in a sustainable basis.

- All requirements must be clearly defined and monitored, in order to avoid unfair, deceptive and fraudulent business practices. In California, for example, local authorities enlarged and strengthened the enforcement of LCFS – stately program that inspired Brazilian model.

- The legislative framework covering RenovaBio is both comprehensive and complex, but it nationally recognized best practices.
- The provisions designed by RenovaBio still depend on proper regulation concerning the procedures related to CBio's issuance and custody, among other aspects.

This model will positively influence biofuel sector: as it stimulates a competition between different renewable sources, valuing the fuels of lower carbon intensity, the program will certainly encourage the environmental and economic efficiency in production in a continuous path. It will also bring predictability to the biofuels market, in coexistence with fossil fuels.

- The fact that the government has now devised a steadied program to encourage biofuels use in the country suggests a long-term visibility on policy.

Incentivizing sustainable practices through certification standards, government regulations and market-based pressures is a valid option for reducing global warming effects.