



METHODOLOGICAL NOTE

SUBSIDIES TO FOSSIL AND RENEWABLE FUELS IN BRAZIL (2018-2022) REFORMING FOR A FAIR ENERGY TRANSITION

BRASÍLIA, DECEMBER 2023.

METHODOLOGY FOR ESTIMATING SUBSIDIES TO FOSSIL AND RENEWABLE FUELS

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1. Foreword

This note details the methodological procedures adopted by the Institute of Socioeconomic Studies (Inesc) to estimate federal subsidies to energy sources.

Inesc's goal is to analyze the Brazilian federal government's financial support to expand the energy sector. **Government policies and measures that directly encourage the expansion of production or consumption of fossil or renewable energy are the main defining criteria.**

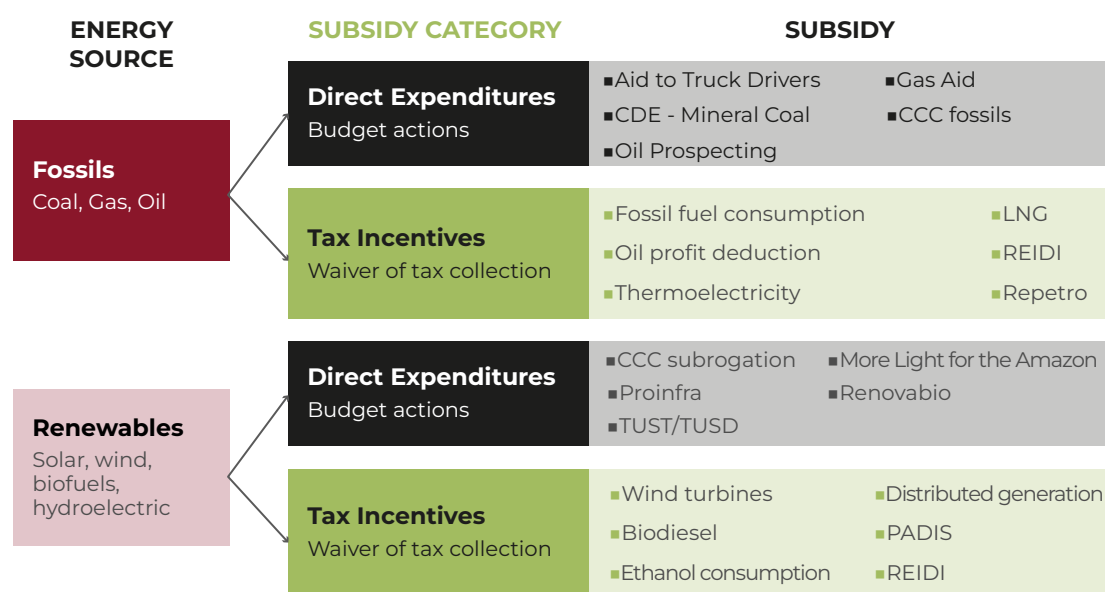
Therefore, government policies and measures that aim at efficiency gains in the energy sector, better planning, regulation, administration of contracts or studies on the sector are not considered in the methodology, because these are considered indirect support for the expansion of the field. Subsidies to states and municipalities are also not considered.

Unfortunately, due to the lack of transparency in government information, it is not possible to specify the amounts of subsidies by energy source. However, it is possible to make a distinction between fossils and renewables for most measures that grant tax benefits.

Subsidies for which is not possible to distinguish between fossil or renewable are not considered.

In the methodology adopted by Inesc, 22 measures that represent these subsidies were selected. They are listed throughout the document and summarized in Figure 1.

FIGURE 1 SUBSIDIES TO ENERGY SOURCES: HOW THE FEDERAL SUPPORT FOR THE EXPANSION OF THE ENERGY MATRIX IS ORGANIZED?



Source: elaboration by Inesc.

The figures presented in the 2023 edition, relating to the years 2018 to 2022, differ from the figures presented in past editions. This is due to adjustments made to the calculation methodology, notably:

- 1) change in the calculation basis for consumption subsidies, with a new baseline defined for the year 2017, which resulted in a reduction in the amounts for tax losses associated with the Contribution for Intervention in the Economic Domain (CIDE) and the PIS/Cofins, in addition to the inclusion of the consumption of liquefied petroleum gas (LPG);
- 2) greater detail for the Special Incentive Regime for Infrastructure Development (REIDI), which made it possible to separate subsidies to fossil fuels from subsidies granted to renewable sources; and
- 3) separation of the three operations that make up the Fuel Consumption Account (CCC), with the breakdown between fossils and renewables.

These adjustments and other methodological choices are presented in this document.

2. Criteria for definitions and categorization of subsidies

- A) Subsidies:** subsidies are understood as the set of government policies and measures that provide resources, directly and indirectly, to companies and to the population. We use the definition of the World Trade Organization (WTO), which considers that a subsidy exists if there is a financial contribution from a government or public body. This involves a range of modalities such as transfer of funds, potential direct transfers (such as investment guarantees), lost government revenues (such as tax waivers), provision of goods or services other than for general infrastructure, and price support.
- Credit and financing programs which, simply put, are loans with reduced interest rates, are not considered, because they are different tax categories and because it is not possible to separate the value of the subsidy included in the loan from the value of the loan.
- B) Direct expenditures and tax waivers:** subsidies to energy sources are divided here into direct spending and tax waivers. Direct expenditures are government budgetary actions, while tax waivers are regimes or laws that, according to their rules, companies and people pay less taxes—in the form of charges, fees or contributions—to promote an activity in a given period. These are waivers, exemptions or benefits.
- For direct expenditures, our main source is the Federal Senate website, Siga Brasil, which records data from the Integrated Financial Administration System (Siafi), updated daily. For tax waivers, the Tax Expenditure Statement (DGT) is the main government source. However, not all tax waivers examined here are considered by the Federal Revenue Service as tax expenditures. Therefore, they can be found in other sources, such as the annex of established exemptions, or are obtained through the Access to Information Law (LAI). The sources for each subsidy are described in later chapters.
- C) Stages:** the stages considered for energy production and consumption are as follows: purchase, extraction of inputs for generation, prospecting, exploration, production, development, and consumption.
- Stages not considered are those in which it is not possible to differentiate between fossil or renewable expansion, such as transmission and distribution of electrical energy.
- D) Energy sources:** to establish that a subsidy is a stimulus to fossil energy, it must come from oil, natural gas or mineral coal. In regard to renewable energy, we take into account wind, solar, hydroelectric sources (from large and small plants), and

bioenergy. However, due to the lack of transparency in government information, it is not possible to disentangle the targeted incentive individually for each source.

- Nuclear energy is not estimated, because, despite being finite (therefore, non-renewable), it is not energy that comes from fossil resources. *Note:* It is important to point out that by renewable energy we do not mean clean energy, given the social and environmental impacts that can result from the expansion of renewable energy.

E) **Energy uses:** most of the subsidies that are presented in our methodology are linked to electrical energy generation, but we have also included subsidies to fuels within the transport sector.

3. Subsidies to fossil fuels

3.1. Tax Waivers

SUBSIDY NAME: **liquefied natural gas (LNG).**

Description: exemption from the following taxes: Contribution to the Worker's Social Integration/Public Servant Asset Formation Program (PIS/Pasep) and Social Contribution for the Financing of Social Security (Cofins), for the import of liquefied natural gas intended substantially for electricity generation.

Duration of the incentive: duration of the tax waivers allocated to LNG is undetermined..

Data source: Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil, Effective Bases.

Extraction methodology: extraction of complete DGT data, without applying filters or sectors.

SUBSIDY NAME: **thermoelectricity.**

Description: exemption from PIS/Pasep and Cofins rates levied on revenue arising from the sale of natural gas and mineral coal intended for the production of electrical energy.

Duration of the incentive: duration of the tax waivers allocated to thermoelectricity is undetermined.

Data source: Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil, Effective Bases, as up-to-date data as possible.

Extraction methodology: extraction of complete DGT data, without applying filters or sectors.

SUBSIDY NAME: **Special Customs Regime for Export and Import of Goods Intended for Research and Mining Activities in Oil and Natural Gas Deposits (Repetro).**

Description: Repetro allows the import or acquisition of raw materials, packaging materials and intermediate products for the manufacture of products intended for the oil and natural gas industry in the domestic market with the exemption of collection of federal taxes (IPI, II, PIS/Pasep, Cofins).

Duration of the incentive: 2040.

Data source: data obtained through the Access to Information Law (LAI).

Extraction methodology: the data received through the LAI demonstrate the exemption from IPI, II, PIS/Pasep and Cofins and CIF freight (cost, insurance and freight) for three regimes that are part of Repetro: temporary admission, definitive admission, and Repetro Industrialização. The values of the three regimes and all taxes are added together, excluding the CIF, since it is not a domestic tax.

SUBSIDY NAME: **exemption for the consumption of fossil fuels (gasoline C, diesel B and liquefied petroleum gas).**

Description: reduction in rates (Cide, PIS/Pasep and Cofins) levied on operations conducted with diesel oil (type B), liquefied petroleum gas (LPG) and gasoline (type C). The year 2017 is adopted here as the baseline for calculating the subsidies implicit in waivers linked to the collection of these taxes. The main increase in subsidies occurred in 2022, due to Complementary Law No. 194, which aimed to respond to the rise in fuel prices, influenced by the war between Russia and Ukraine. The changes were in force during 2022 and the beginning of 2023 and were not structured into long-term policies.

Duration of the incentive: duration of tax waivers for the consumption of fossil fuels (in particular, gasoline, diesel and LPG) is undetermined. Duration is defined by Complementary Law No. 194/2022 and its subsequent amendments.

Data source: Brazilian National Petroleum, Natural Gas and Biofuels Agency (ANP), and legislation that establishes the rates.

Extraction methodology: Inesc considers the adoption of the commercialized volume of each fuel (gasoline C, diesel B and LPG) by the Fuel Commercialization Summary, published monthly by the National Agency for Petroleum, Natural Gas and Biofuels (ANP). Based on the volume, the exemption for the fuels analyzed is calculated using the year 2017 as the baseline, obtaining the rate in force for each year, established by the legislation in force in each period. It must be noted that, for LPG, the volume available to consumers up to the P-13 cylinder (13 kg) is considered. Also, for this fuel, when converting volume (m³) to mass (kg), the density of 2.5 kg/m³ is adopted.

SUBSIDY NAME: **deduction of resources applied to the exploration and production of oil and natural gas deposits to determine the profit for calculating the IRPJ [Corporate Income Tax] and the CSLL [Social Contribution on Net Profits].**

Description: Law No. 13.586/2017, which renewed and extended Repetro by 2040, also brought, in its article 1, the possibility of deduction, for the purposes of determining the calculation basis of the Social Contribution on Net Profits (CSLL), of the amounts invested in the exploration and production of oil and natural gas deposits, also considering the depletion expense arising from the asset.

Duration of the incentive: validity of Law No. 13.586/2017.

Data source: Federal Revenue Service of Brazil.

Extraction methodology: the figures of this tax waiver are presented by the Revenue Service as “instituted exemptions,” but are restricted to three-year estimations as of the approval of the law that enacted them (from 2018 to 2020), in order to comply with the Fiscal Responsibility Law (LRF).

3.2. Direct expenditure

SUBSIDY NAME: **geology and geophysics services applied to oil and natural gas prospecting.**

Description: conducting geological and geophysical studies, surveys and services mainly to identify areas and blocks to be offered in future public tenders.

Data source: Siga Brasil.

Extraction methodology: 2053 Budget Program. Budget Action 2050. Extraction of values paid + outstanding balances paid (financial execution)..

SUBSIDY NAME: **Mineral Coal – Energy Development Account (CDE).**

Description: present within the Energy Development Account (CDE), it is an energy policy for the use of domestic coal, providing an economic subsidy for the entire production chain, from coal exploration to electricity generation, for a certain group of plants that were in operation in 1998. It defines that national coal-fired thermoelectric plants will be entitled to coverage of fuel costs.

Duration of the incentive: according to Law No. 12.783/2013, this subsidy is expected to end in 2027.¹

Data source: Energy Development Account Report from the National Electric Energy Agency (Aneel).

Extraction methodology: based on Aneel's Energy Development Account (CDE) Report, which details CDE's annual budgets, the amounts allocated to the mineral coal subsidy are extracted.

¹ Law No. 12.783/2013, which promotes the subsidy and competitiveness of energy produced from national mineral coal in areas served by interconnected systems. Available at: <https://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2013/Lei/L12783.htm>. Accessed: 20 Sep. 2023..

SUBSIDY NAME: **Gas Aid for Brazilians.**

Description: intended to mitigate the impact of the price hike in liquefied petroleum gas (LPG) on the budgets of low-income families. Beneficiary families receive, every two months, an amount in cash corresponding to a portion of at least 50% of the average national reference price for a thirteen-kilogram LPG cylinder, established by the Price Survey System (SLP) of the National Agency for Petroleum, Natural Gas and Biofuels (ANP), in the previous six months, as established by regulation. Eligible beneficiaries are families registered in the Single Registry for Social Programs (CadÚnico) of the Federal Government, whose monthly per capita family income is less than or equal to half the national minimum wage, or families that have members residing in the same household and who are granted the Social Assistance Continuous Payment Benefit (BPC).

Data source: Siga Brasil.

Extraction methodology: Budget Program 5033. Budget Action 21DV. Extraction of values paid + outstanding balances paid (financial execution).

SUBSIDY NAME: **Payment of Assistance to Independent Cargo Transporters.**

Description: Payment of Assistance to Autonomous Cargo Transporters is made to the aforementioned duly registered professionals as a way of compensating for the increase in prices that occurred in 2022. Drivers received up to six installments, which could reach R\$ 1,000.00 each. The benefit was terminated in December 2022.

Data source: Siga Brasil.

Extraction methodology: Budget Program 2213. Budget Action 2213. Extraction of amounts paid + outstanding balances paid (financial execution). The choice to include this program is due to the fact that Brazilian trucks are, for the most part, powered by diesel oil, which is a fossil fuel. However, it is important to point out that in Brazil it is mandatory to mix diesel with biodiesel. Therefore, this subsidy also creates stimulus for renewable fuels. Even though the mixture contains only 12% of biodiesel (with a gradual increase of up to 15% in the coming years), as fossil diesel still accounts for the majority of the fleet's consumption and there is no way to separate the subsidy between fossil and renewable, we chose to consider the total value in our calculation.

4. Subsidies to renewable fuels

4.1. Tax Waivers

SUBSIDY NAME: **Support Program for Technological Development of the Semiconductor Industry (Padis).**

Description: the program supports the implementation and maintenance of companies whose activities include the conception, development, design, and manufacturing of semiconductor devices and displays through the reduction of PIS/Pasep, Cofins, Import Tax (II), Tax on Industrialized Products (IPI) and Cide. Thus, it is aimed at expanding the market and increasing the supply of strategic component projects by the national industry on a competitive and sustainable basis, as well as increasing the consumption of strategic components developed and manufactured domestically. In return, companies are required to make minimum investments (5% of gross revenue) in research, development, and innovation activities. Semiconductors and displays are integral parts of equipment for sources such as wind and solar. Thus, tax reduction applied to these materials stimulates national industry and the production of renewable energy in the country.

Duration of the incentive: duration for PIS/Pasep, Cofins, II and IPI taxation is 2026. For Cide, validity is undetermined.

Data source: Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil, Effective Bases.

Extraction methodology: extraction was conducted through the Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil within the “science and technology” budgetary function. The methodology considers that all companies registered and qualified with their products and models are integrated into the renewable energy sector, as the majority of companies registered with Padis are classified in the renewable energy sector. Another possibility would be to extract the values from the Economic and Technological Results Reports of the Ministry of Science, Technology and Innovation (MCTI), available on the program’s website. However, until the date of preparation of this study, only data for the period ranging from 2010 to 2019 were available. Furthermore, the data, compared to the two official sources, did not match in regard to the years in which it was possible to carry out this exercise.

SUBSIDY NAME: **Wind turbines.**

Description: reduces tax rates (PIS/Pasep and Cofins) levied on materials and equipment for wind sources and that appear in the tax rate table of the Tax on Industrialized Products (IPI).

Duration of the incentive: duration of the tax waivers allocated to wind turbines is undetermined.

Data source: Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil, Effective Bases.

Extraction methodology: extraction was conducted through the Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil within the “energy” budgetary function.

SUBSIDY NAME: **Biodiesel.**

Description: reduction of tax rates (PIS/Pasep and Cofins) levied on the production and sale of biodiesel, which is a biofuel derived from renewable biomass for use in internal combustion, compression-ignition engines or for the generation of another type of energy, which can partially or completely replace fossil fuels.

Duration of the incentive: duration of the tax waivers allocated to biodiesel is undetermined.

Data source: Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil, Effective Bases.

Extraction methodology: extraction was conducted through the Tax Expenditure Statement (DGT) of the Federal Revenue Service of Brazil within the “energy” budgetary function.

SUBSIDY NAME: **Distributed Generation (DG).**

Description: distributed generation refers to the generation of electricity conducted by consumers themselves in the consumption center, the main example being the installation of photovoltaic panels in homes (both urban and rural) and in commercial establishments. Until 2022, those who qualified for DG are partially exempt from paying the Distribution System Usage Tariff (TUSD).

Duration of the incentive: with the approval of the Legal Framework for Distributed Microgeneration and Mini-generation, this exemption, from 2023, will be gradually extinguished until 2029. Those who were already registered in the system prior to approval are guaranteed exemption until 2045.

Data source: Subsidiometer of the National Electric Energy Agency (Aneel).

Extraction methodology: extraction was conducted using the virtual tool provided by Aneel, known as Subsidiômetro [Subsidiometer].

SUBSIDY NAME: **exemptions for the consumption of renewable fuels.**

Description: reduction in tax rates (Cide, PIS/Pasep and Cofins) levied on operations conducted with hydrated ethanol. The year 2017 is adopted here as the baseline for calculating the subsidies implicit in waivers linked to the collection of these taxes. The main increase in subsidies occurred in 2022, due to Complementary Law No. 194, which aimed to respond to the rise in fuel prices, influenced by the war between Russia and Ukraine. The changes were in force during 2022 and the beginning of 2023 and were not structured into long-term policies.

Duration of the incentive: duration of tax exemptions for the consumption of renewable fuel, especially hydrated ethanol, is undetermined. The duration is defined by Complementary Law No. 194/2022.

Fontes dos dados: Brazilian National Petroleum, Natural Gas and Biofuels Agency (ANP), and legislation that establishes the tax rates.

Extraction methodology: Inesc considers the adoption of the commercialized volume of each fuel (in this case, hydrated ethanol) based on the Fuel Commercialization Summary, which is published monthly by the National Petroleum, Natural Gas and Biofuels Agency (ANP). As the ANP does not disclose the volume of anhydrous ethanol in the aforementioned database, the calculation conducted only includes hydrated ethanol. Based on volume, and obtaining the rate levied for each year established by the legislation in force in each period, the exemption for the analyzed fuel is calculated, using the year 2017 as baseline.

4.2. Direct expenditure

SUBSIDY NAME: **Incentive Program for Alternative Electricity Sources (Proinfa)**

Description: subsidizes the increased participation of renewable sources (such as small hydroelectric, wind and biomass-powered thermoelectric plants) in the production of electrical energy. Proinfa costs are shared among all classes of end consumers served by the National Interconnected System (SIN). The energy produced at these plants is purchased by Eletrobras under 20-year contracts. In this way, all consumers connected to the SIN and who collect the Tariffs for the Usage of Distribution and Transmission Systems (TUSD/TUST) participate in Proinfa by contracting quotas from generators that are part of the program. Each year, Aneel is responsible for determining and publishing in a confirmatory resolution the annual quota for each of the consumer units, using as a reference the history of the last 12 months of consumption.

Data source: confirmatory resolutions of the National Electric Energy Agency (Aneel).

Extraction methodology: Aneel's confirmatory resolutions present, annually, the total quotas for the subsequent year. Thus, by having access to the Agency's agendas and minutes, it is possible to access to the calculated amount relating to the program.

SUBSIDY NAME: **National Biofuel Policy (Renovabio).**

Description: promotes the expansion of biofuels in the energy matrix with an emphasis on constant supply. Furthermore, it ensures predictability for the fuel market, inducing gains in energy efficiency and reduction in greenhouse gas (GHG) emissions in the production, commercialization, and use of biofuels. The policy establishes annual national decarbonization targets for the fuel sector in order to encourage increased production and participation of biofuels in the country's transport energy matrix.

Data source: Siga Brasil.

Extraction methodology: Budget Program 3003. Budget Action 2E91. Extraction of amounts paid + outstanding balances paid (financial execution).

Note: RenovaBio, in addition to budgetary expenditure, is also financed by the National Bank for Economic and Social Development (BNDES), which provides direct support to the sector, through ESG (environmental, social and governance) credits, with the incentive to improve energy-environmental efficiency and production certification. Given that the scope of this analysis does not include financing from development banks (see criterion 3 of this methodology), this value was not included in the analysis.

SUBSIDY NAME: **incentivized sources – Energy Development Account (CDE).**

Description: the following are called incentivized sources: wind, biomass, small hydroelectric plants (SHP), hydroelectric generating plants (HGP), photovoltaic and qualified cogeneration. Incentivized electrical energy sources have minimum discounts of 50% in the Tariffs for the Use of Distribution and Transmission Systems (TUSD/TUST) in relation to the power injected into the National Interconnected System (SIN).

Prazo de vigência: in the legislation, there is no set limit for the termination of discounts.

Data source: Energy Development Account Report from the National Electric Energy Agency (Aneel).

Extraction methodology: based on Aneel’s Energy Development Account Report, which details the annual budgets of the Energy Development Account (CDE), the amounts allocated to incentivized generation are extracted. This methodology does not consider the consumer subsidy of the incentivized source and the incentivized source of transmitters, present within the CDE and the report, as renewable sources for energy production.

SUBSIDY NAME: **More Light for the Amazon Program (MLA).**

Description: benefits families and their respective socioeconomic support units and other consumer units located in remote regions of the Brazilian Amazon that have not yet had access to public electricity service or that are powered by a non-renewable source of electrical energy. Service in remote regions is provided through renewable sources of electrical energy generation. The program is valid until 2030. It is worth adding that the resources necessary to finance the program came from the CDE, agents of the electrical sector and other sources to be regulated by the Ministry of Mines and Energy (MME)..

Data source: Subsidiometer of the National Electric Energy Agency (Aneel).

Extraction methodology: extraction was conducted using the virtual tool provided by Aneel, known as Subsidiômetro [Subsidiometer].

5. Subsidies that support fossil and renewable fuels

5.1. Tax Waivers

SUBSIDY NAME: **Special Incentive Regime for Infrastructure Development (Reidi).**

Description: Reidi encourages the implementation of infrastructure projects through exemptions in various sectors. In this methodology, only the energy sector will be examined. Therefore, Reidi is intended for projects related to the generation of electrical energy, and is also applied to electricity transmission and distribution projects, such as reinforcing power cables or retrofitting substations. This is not an exclusive project for renewable sources, as it also provides subsidies to gas and oil pipeline infrastructure projects aimed at generating electricity. Reidi suspends the requirement for contributions to PIS/Pasep and Cofins for acquisition, rental and import of goods and services linked to approved projects, whether linked to generation or infrastructure.

Duration of the incentive: duration of the tax waivers allocated to Reidi is undetermined.

Data source: official data extracted from ordinances from the Ministry of Mines and Energy (MME).

Metodologia de cálculo: based on the individual analysis of each ordinance published by the MME, it is possible to extract the tax waiver (PIS/Pasep and Cofins) approved by the regime in each project. In addition to extracting the amount for the contribution, it is possible to observe which sector the project is aimed at, whether for building thermoelectric plants (diesel or natural gas), renewable sources (wind, photovoltaic, biomass, and small and large hydroelectric plants), gas pipelines or electricity transmission and distribution projects. This methodology did not take into account electrical energy transport infrastructure projects; however, it includes gas pipeline projects within the amount allocated to fossil fuels.

5.2. Direct expenditure

SUBSIDY NAME: **Fuel Consumption Account (CCC).**

Description: present within the Energy Development Account (CDE), the CCC serves the generation of electrical energy in isolated systems, that is, in areas that are not integrated into the National Interconnected System (SIN). The account operates in three ways, namely: I) reimbursement: refunds generating costs for isolated fuel systems, self-generation, contracted power and electrical energy, ancillary and taxes expenses ; II) admission of debt contracts: contracts signed between the CCC and the beneficiary to pay any debts determined; and III) subrogation: reimbursement granted to projects carried out in the isolated system to replace, totally or partially, the generation of thermoelectric plants with renewable sources. The CDE is collected by all consumers and is distributed by Aneel every year.

Data source: Inputs and Outputs Statements from the Electricity Trading Chamber (CCEE).

Metodologia de cálculo: extraction is conducted based on CCEE input and output statements. The methodology uses the values of outputs intended for subrogation as subsidies to renewable sources. The rest of the outputs are understood by this methodology as attributed to fossil sources in isolated systems. This is the only method that allows subrogation to be separated from other account operations. The methodology considers that the CCC, even supporting consumption in isolated electricity systems, aims to subsidize the production of electrical energy using fossil fuels in these regions.

6. Methodological note: calculation of deflation and the relationship with the GDP and the dollar

To elaborate historical series and compare years, it is necessary to deflate the data and compare them with the annual GDP. For international comparisons, it is also necessary to show the data in dollars. In this chapter, we will briefly explain how Inesc conducted these three calculations.

- 1) **Deflation.** To calculate the figures in the historical series in their real values, the year-to-date variation in the Broad National Consumer Price Index (IPCA), from December 1995 to December 2022, was used as a reference.² Based on these indices, the data was deflated for the years 2018, 2019, 2020 and 2021 for the IPCA of December 2022, applying the deflator to the values that appear in the table below. Regarding the last year of the historical series, as it is not possible to determine in which month exactly each estimate for the year was calculated, data is not deflated.

TABLE 1 ANNUAL IPCA (2018-2022) AND DEFLATOR APPLIED TO NOMINAL VALUES

Year	Annual accumulated IPCA (December)	Deflator
2018	3,75	0,788
2019	4,31	0,822
2020	4,52	0,859
2021	10,06	0,945
2022	5,79	1,000

Source: elaboration by Inesc, with IPCA data from IBGE.

- 2) **Percentage in relation to GDP.** The nominal values for the year of the subsidy were divided by the nominal GDP for the year, according to the values extracted from IPEA Data.³

² Available at: <<https://www.ibge.gov.br/estatisticas/economicas/precos-e-custos/9256-indice-nacional-de-precos-ao-consumidor-amplo.html?=&t=series-historicas>>. Accessed: 24 Nov. 2023.

³ Available at: <<http://www.ipeadata.gov.br/exibeserie.aspx?serid=38415>>. Accessed: 24 Nov. 2023.

TABLE 2 NOMINAL GDP VALUES

Year	Nominal GDP values
2018	R\$ 7.004.141.000.000,00
2019	R\$ 7.389.131.000.000,00
2020	R\$ 7.609.597.000.000,00
2021	R\$ 8.898.727.000.000,00
2022	R\$ 9.915.317.000.000,00

Source: elaboration by Inesc, data from IPEA Data.

- 3) **Dollar.** For conversion to the dollar, the Central Bank of Brazil portal⁴ was used, which provides exchange rates for a given date. The first day of December of the year of conversion was used as a reference.

TABLE 3 VALUES IN USD FOR R\$ 1.00

Year	Values in USD for R\$ 1.00
2018	0,3105879
2019	0,2692442
2020	0,1972737
2021	0,1830262
2022	0,1798399

Source: elaboration by Inesc, data from the Central Bank of Brazil.

4 Currency conversion. Available at: <<https://www.bcb.gov.br/en/currencyconversion>>. Accessed: 6 Jul. 2023.



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