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## Cotação do Dólar Comercial

As cotações do dólar comercial no Brasil nos últimos meses têm assustado os analistas. Procuramos representar a cotação histórica, a partir de 1948, em preços de Janeiro de 2003. Do gráfico, surge que uma cotação na casa dos quatro reais por dólar só existiu em quatro ocasiões. A boa notícia é que os picos anteriores nessa cotação duraram pouco, a má é que eles sempre marcaram profundas crises na economia brasileira.

## Emissões Causadoras do Efeito Estufa no Uso e Transformação de energia de 1970 a 2002

Os dados do Balanço Energético Nacional - BEN do período 1970 a 2001 e os coeficientes apurados eem um programa, denominado benemis_e, na linguagem "Visual-Basic sobre planilhas "Excel" que permitem recuperar gráficos e tabelas em diferentes apresentações, por ano, setor ou energético.

### 1. O programa benemis_e

O programa benemis_eusa os dados das planilhas anuais do BEN, denominadas Anexos, que consolidam, para cada ano, o balanço de produção, transformação e uso de energia para o Brasil e dados de coeficientes de emissões, fornecidos pela equipe que elabora o inventário brasileiro dos gases causadores do efeito estufa. Estes coeficientes baseiam-se em recomendações internacionais e dados recolhidos para o Brasil e consideram, quando disponíveis, as peculiaridades brasileiras.

### 2. Resultados

Os principais resultados para emissões dos gases são apresentados, no capítulo 2, para o último ano disponível (2001). São apresentadas as emissões de CO2, CH4, N2O, CO, NOx, NMVOCs.Também são apresentados, para os mesmos gases, gráficos e tabelas da evolução da emissão, no período 1970/2001 por setor e por grupo de energéticos. Para o CO2 são apresentados gráficos e tabelas por atividade e setor.

### 3. Como Usar o Programa

Apresenta-se uma descrição de como usar o Programa que está disponível para ser baixado

benemis_e para download (Programa em Excel "zipado")

Relatório Completo ao MCT para download (texto em Word "zipado")

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Guestbook

## Commercial Dollar Exchange Rate

The commercial dollar exchange rate in Brazil in the last months has frightened the analysts. We try to represent the historical exchange rate from 1948 on in prices of January 2003. In the graphic obtained it is verified that the exchange rate of four reais per dollar has occurred in four occasions. The good news is that the previous peaks of this value lasted for a short time and the bad news is that they always marked deep crisis in the Brazilian economy.

**Emissions of Greenhouse Effect Gases in the Energy Use and Transformation from 1970 to 2002.**

Data from the National Energy Balance – BEN – of the period 1970/2001 and emission coefficients are used by a program named benemis-e in the Visual-Basic language on Excel spreadsheets that permits the production of emission graphics and tables in different presentations by year, by sector or by energy source.

### 1. The benemis_e Program

The benemis-e program uses annual spreadsheets data from BEN, denominated Annexes that consolidate for each year the balance of energy production, transformation and use in Brazil and emission coefficients supplied by the staff that elaborates the Brazilian inventory of the greenhouse effect. These coefficients are based on international recommendations and data gathered in Brazil that take into account, whenever available, the Brazilian peculiarities.

### 2 Results

The main results regarding gases emissions are presented in chapter 2 for the last year available (2001). Emissions of the following gases are presented: CO2, CH4, N2O, CO, NOx and NMVOCs. It is also presented for the same gases graphics and tables of the emission evolution in the 1970/2001 period by sector and by group of energy sources. Graphics and tables by activity and sector are presented for CO2.

### 3. How to Use the Program

A description of how to use the program is available for download.

benemis-e for download (zipped Program in Excel)

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# Commercial Dollar Exchange Rate



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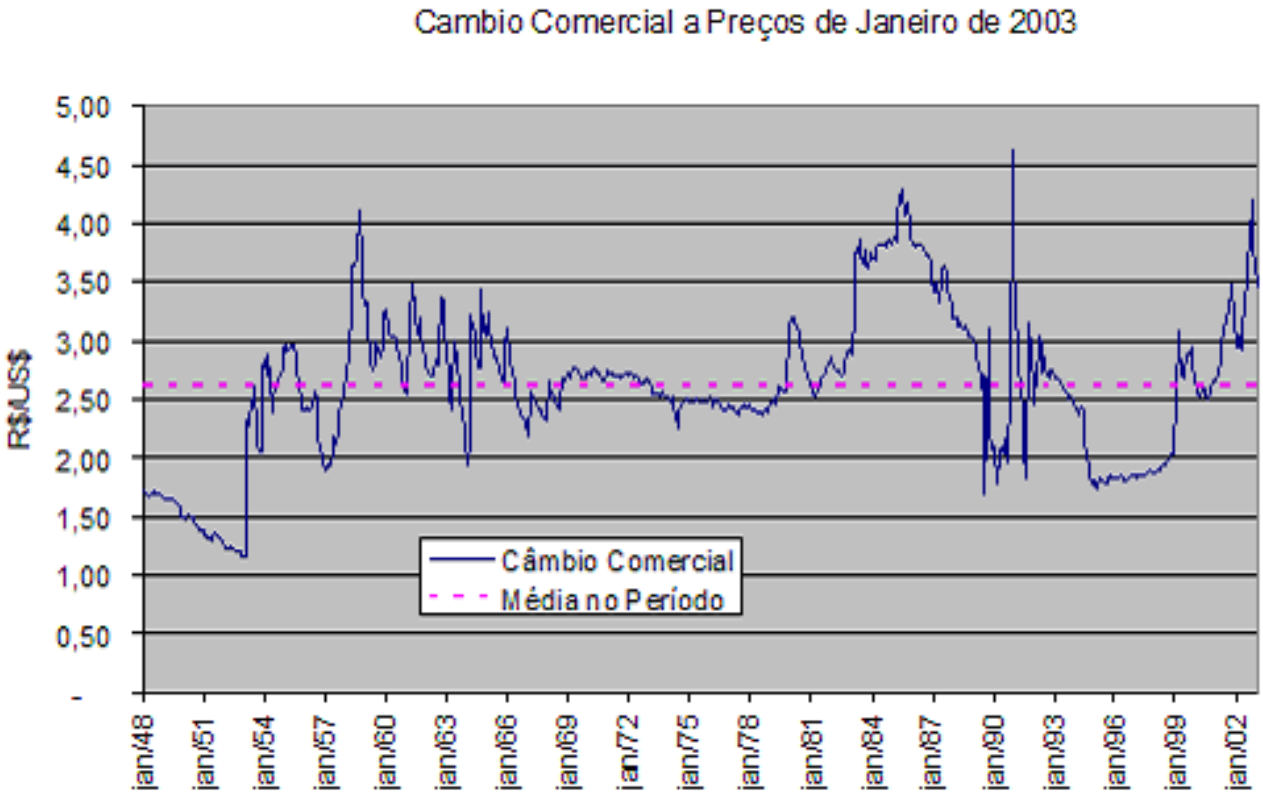
Summary:
The exchange rates of commercial dollars in Brazil in the last months have frightened the analysts .We try to represent the historical exchange rate from 1948 on, in January 2003 prices. From the resulting graphic it is concluded that the exchange rate of four reais per dollar has only occurred in four occasions. The good news is that previous peaks of this exchange rate have had a short duration, the bad news is that they have corresponded to deep crisis in the Brazilian economy.

It is usual to say that Brazil has a short memory. In questions involving prices, Brazil has complete amnesia. This amnesia is justified in part due to the inflation disease but there is a profound disinterest in using historical price parameters in order to forecast the future.

The IPEADATA is carrying out an excellent job regarding collection and dissemination of historical data (http://www.ipeadata.gov.br). Therefore, we run the serious "risk" of regaining our memory.[1]

We have tried to retrieve the average exchange rate of the commercial dollar in the January 2003 currency with the help of the available data series. For this purpose, we have used the IGP-DI (General Price Index) monthly data from the Fundação Getúlio Vargas (FGV) in order to correct the Reais and the currencies that preceded it, and the Consumer Prices of the United States, both available at IPEADATA. The monthly commercial dollar exchange rates are also available at that site. When one corrects the exchange rates with the price indexes one obtains the following graphic.




The average historical exchange rate is 2.61 R$/US$. As has been demonstrated by Aumara Feu in the 36th issue of **e&e** [2], the average exchange rate coincides with the years when the commercial balance of goods and services was in equilibrium.

Exchange rates above 4.00 R$/US$, as that of October 2002, has occurred only four times in 50 years. The first one was in September 1958 when President Juscelino Kubitcheck broke with the International Monetary Fund, the second one before moratorium was declared in 1986, the third one before the deposits and investment confiscation of the Collor Plan. The fourth time was at the end of Fernando Henrique Cardoso Administration.

On the other hand, the dollar exchange rate in present currency was only a few times below the 2.00R$/US$ rate. Only twice was it below this value for a period of a few years. The first one was at the beginning of the period represented in the graphic, while the War credits were being consumed and the second one in the first Fernando Henrique Cardoso Administration when it was adopted an exchange rate of 1.86 R$/US$ in present currency. As it has been demonstrated, it was an artificial exchange rate that originated the present difficult situation.

In the period from 1983 to 1985 that approximately coincides with the second term of Minister Delfin Neto as Minister of Finance, the exchange rate was maintained around 3.75 R$/USS$, what made possible the generation of

surpluses in the commercial balance of up to 5% of the GDP.

Coherently with what was observed in other occasions, the commercial balance has increased. The question that the graphic cannot answer is the following: are we at the descending part of the October peak and things will be resolved by this reaction of the market or once again something more drastic will be necessary?

Carlos Feu Alvim and Aumara Feu in 02/26/2003

Carlos Feu Alvim is a PhD in Physics and editor of the Economy and Energy periodic, Aumara Feu is finishing her PhD Economy thesis at the Brasília University.

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[1] Nevertheless, Brazil has a rather reasonable statistical system and a good transparency regarding its national accounts. The little interest relative to historical data – or the illusion that there would be little demand for them – resulted in not being easy to gather them.

[2] http://ecen.com/eee36/ecen_36.htm

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If Brazil would continue to pay 15% p.a. of real interest, Athina Onassis, who received 100 million dollars when she completed 18 years, would transform this money into 500 million dollars when she is thirty. That is, applying 10% of her fortune (estimated to be 1 billion dollars) she would have one and a half times her present fortune. This illustrates the huge amount of interests internally paid by Brazil in the last 12 years.

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# Energy Emissions



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**Summary**

The present work collects data from the National Energy Balance – BEN, from 1970 to 2001 in a program denominated *benemis_e* in the Visual-Basic language on Excel spreadsheets that permits the production of graphics and tables in different presentations, namely by year, by sector or by energy source.

The *benemis_e* program, described in item 1, uses annual spreadsheets from BEN, denominated Annexes, that consolidate for each year balances balances of the production, transformation and use regarding energy in Brazil, as well as emissions coefficients supplied by Branca Americano[i] from the staff that elaborates the Brazilian inventory of the greenhouse effect gases. These coefficients are based on international recommendations and on data gathered in Brazil and consider, whenever available, the Brazilian peculiarities regarding the production and transformation of energy sources between 1990 and 1997. The coefficients relative to 1990 and 1997 are used respectively for the years before and after the considered period. The energy source data are those from BEN/MME from 1970 to 2002[ii].

The main results relative to gas emissions are presented in item 2 for the last year available (2001). Emissions are presented for the following gases: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), carbon monoxide (CO), nitrogen oxides (NOx) and other non-methane volatile organic compounds (NMVOCs).

Graphics and tables relative to the evolution of emissions of the same gases in the period 1970/2001 by sector and by energy source group are also presented Graphics and tables of CO2 emissions by activity and sector are presented as well.

## 1 The *benemis_e* Program

### 1.1 Program's Content

The Annexes of BEN are stored in the program in spreadsheets for each year. In these spreadsheets the following data are presented for primary and secondary energy sources (columns), corresponding to energy sources in “accounts”:

Data concerning Gross Primary Energy Supply: Production, Imports, Exports, Stock Variation, etc.

Transformation data by type of installation: Refinery, Natural Gas Plants, Electric Power Plants, etc.

Data concerning consumption: Non-energy and Energy consumption by Economic Sectors and some of its activities

Losses and Adjustments

Figure 1.1 illustrates the adopted scheme where we refer to
accounts as sectors, for easy understanding.

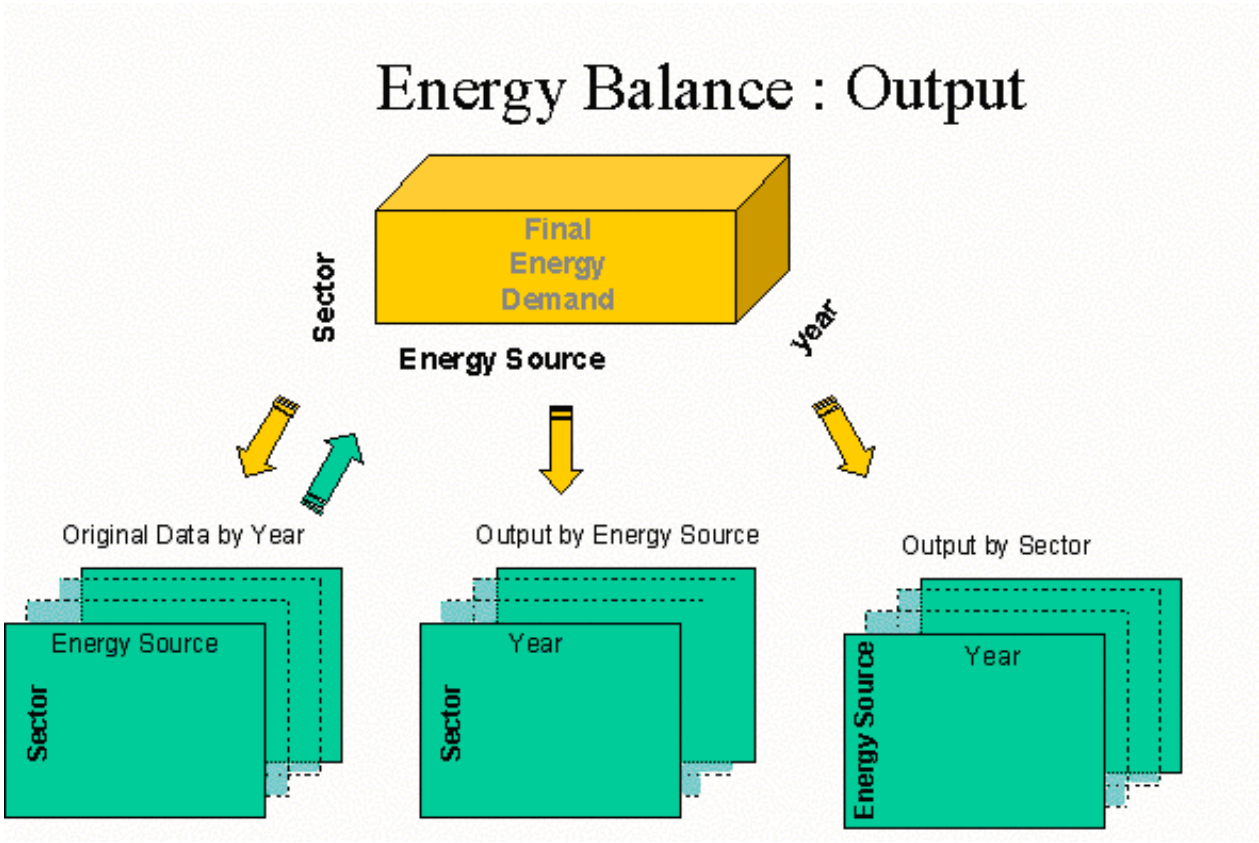


**Figure 1.1:**
Data from BEN/MME (Annexes) for the available years are used to construct a three-dimensional matrix (energy sources, account or sector and year). The bi-dimensional output is obtained from the original matrix.

The energy values are expressed in ton oil equivalent (toe). The coefficients are presented in tons of gas by toe or equivalent. Emissions are given in 10^3 t/year. The scheme of Figure 1.2 illustrates the adopted methodology.

The way of using the program is indicated in Annex 1.

## 1.2 The Coefficients

The archives supplied by the MCT gather spreadsheets containing the implicit emission factors of the greenhouse effect gases relative to the energy sector, corresponding to the energy consumption in some transformation sectors and the final energy consumption of the National Energy Balance (BEN).

The emission factors of the following gases are presented: CO2, CH4, N2O, CO, Nitrogen oxides (NOx) and Non-Methane Volatile Organic Compounds (NMVOCs).

The emission factors were calculated using the methodology adopted by the Brazilian Inventory of Greenhouse Effect Gases, namely, the Bottom-Up methodology recommended by the 1996 *Revised IPCC Guidelines*[iii] , developed by the *Intergovernmental Panel on Climate Change* (IPCC) and adapted to the Brazilian reality. Information from the Energy Balance Information System (SIBE) and the Useful Energy Balance (BEU) were used in its application in order to disaggregate information from BEN. In most of the cases values of different parameters proposed by the IPCC were used. The main exceptions were the conversion factors from toe to Terajoule, the CO2 emission factor of firewood that is consumed in charcoal plants and the emission factors of CO2, CO, CH4 e NOX from ethanol consumed in the transport sector.

The implicit emission factors can vary from year to year since many of them are calculated using more disaggregated information than those presented in the consolidated spreadsheets of BEN.

The presentation format corresponds exactly to the format of the spreadsheets of the National Energy Balance Annex, the Consolidated Balance.

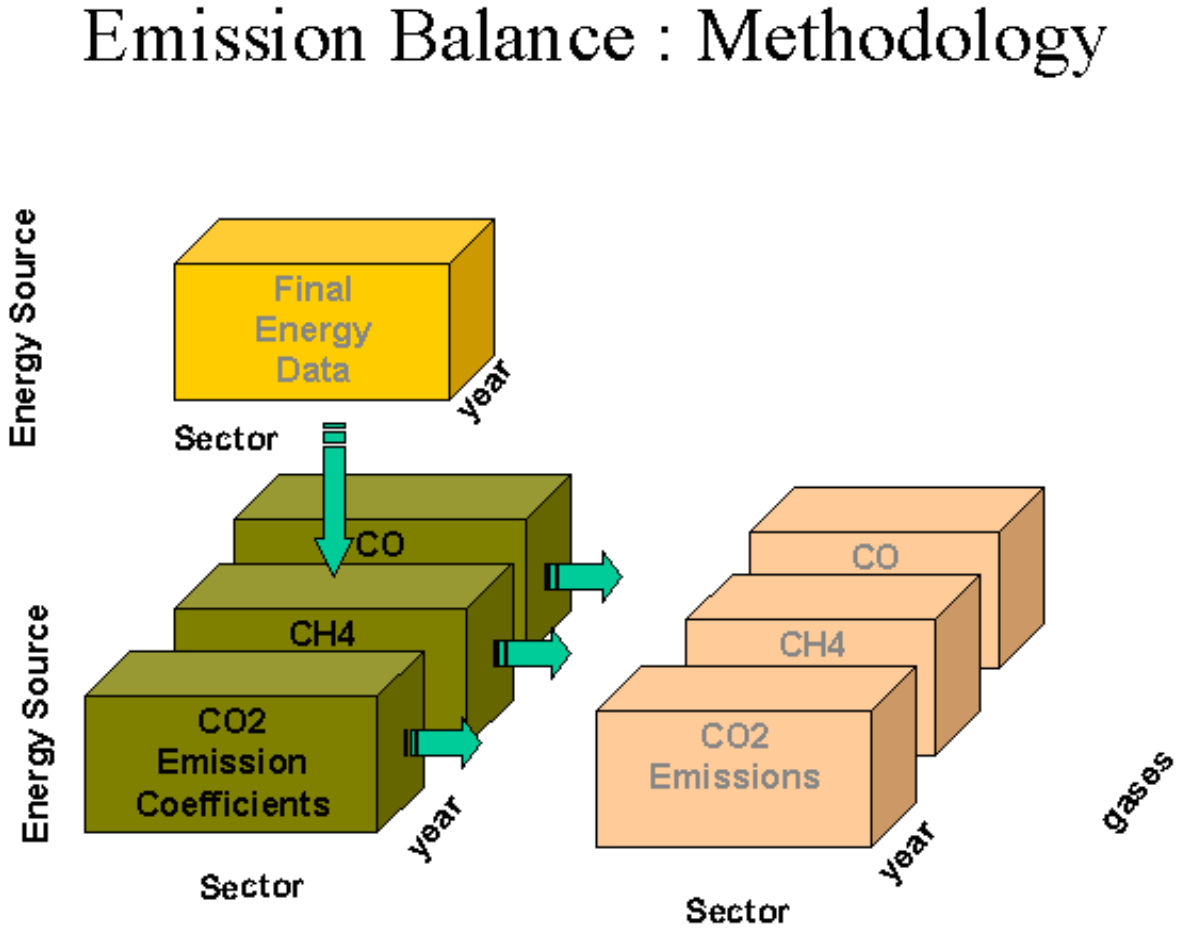


**Figure 1.2 :** Methodology for obtaining emission data used for building tables and graphics.

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[i] Branca Americano -Internal Communication.

[ii] National Energy Balance- BEN 2002, Base Year 2001, Ministry of Mines and Energy, Secretariat of Energy.

[iii] Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories.

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