International Workshop on Energy Statistics

Aguascalientes, Mexico

Country Notes
(Brazil)

João Antonio Moreira Patusco
General-Coordinator of the Energy Information

Gilberto Kwitko Ribeiro
Coordinator of the Energy Information

Secretariat of Planning and Energy Development
Ministry of Mines and Energy - MME

1 General introduction – Conceptual Framework or Methodology used for the compilation of energy statistics in Brazil

In the Brazilian federal government, the Ministry of Mines and Energy – MME is the office responsible for developing long term actions and indicate the potentialities of the energy sector, establishing and implementing sectorial policies, formulating the principles and orienting national energy politics. To accomplish its objectives, MME promotes oriented studies and analysis to subsidize the energy sector planning, as those relatives to energy data and information.

As part of the institutional changes occurred in the Brazilian energy sector over the last years, in 2004 the Energy Research Company – EPE was created as a federal company, and its mission is to render studies and researches to subsidize the energy sector planning. As part of its attributions, EPE is responsible for publishing the Brazilian Energy Balance - BEB.

The BEB, published for more than 30 years by the MME, is a traditional document in the Brazilian energy sector, which annually divulges extensive research and accounting regarding the supply and consumption of energy in Brazil, contemplating the exploration and production of primary energy resources, their conversion into secondary forms, imports and exports, distribution and final energy consumption. One of the most complete and systemized energy data bases available in the country, BEB is a fundamental reference for any study of the Brazilian energy planning.

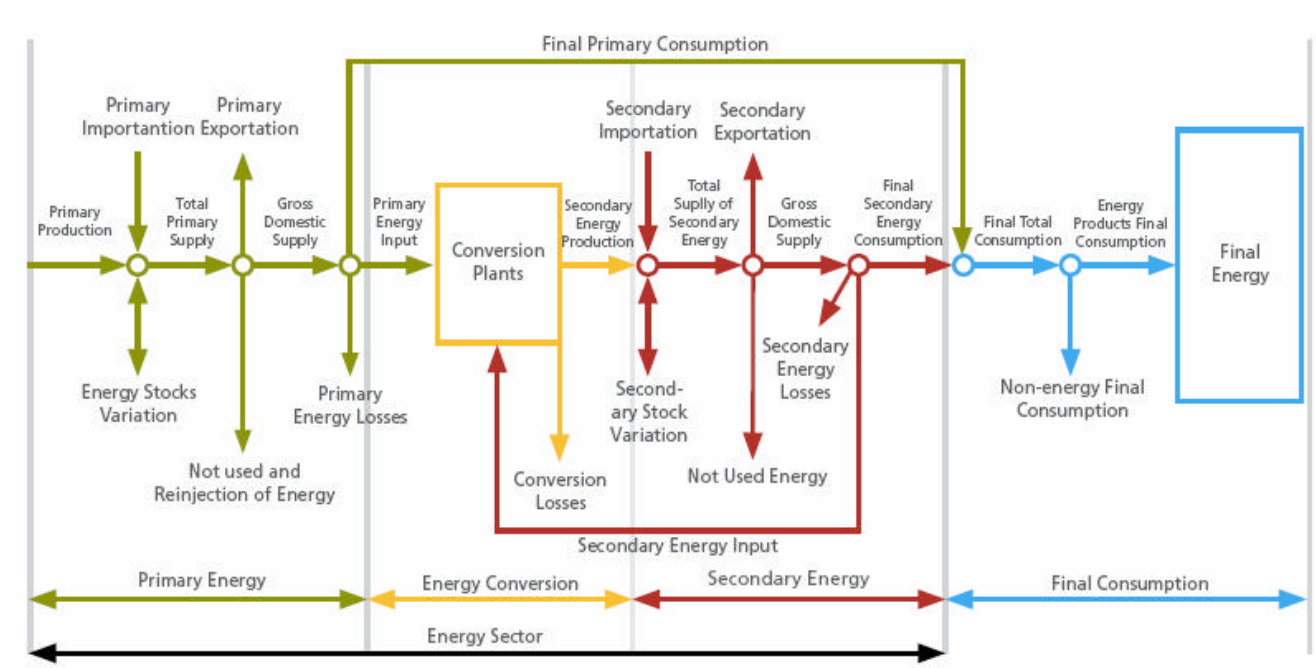
The BEB is according to the international methodologies for the compilation of energy statistics: primary and secondary sources, domestic energy supply (or total primary energy supply), transformation sector and final consumption.

Particularly, MME follows the manuals of the Latin America Energy Organization of (OLADE), with the exception of some proper particularities of Brazil:

- The internal consumption by Energy Sector takes part of the energy final consumption, because we believe it is an important sector in the Brazilian economy.
- The nuclear fuel cycle is considered as a transformation center.
- The entire natural gas flow is cleared up, like the gross production and the transformations in the natural gas plants into dry natural gas and natural gas liquids (NGL).
- The blast furnace is not considered as transformation center. We only take into account that the blast furnace gas is used in electricity generation and we consider it like a primary recovery. So, there is not coal input and all the coal coke is allocated in the siderurgy final consumption.

Despite of the differences above mentioned, the high detailing on the Brazilian energy statistics allows the production of energy data perfectly fit in the field of the international criteria.

Energy Flow in the Brazilian Energy Balance



Structure of the Brazilian Energy Balance

See next page.

10³ toe

Matrix Energy Flow	SOURCES OF PRIMARY ENERGY										SOURCES OF SECONDARY ENERGY																	
	01 Petroleum	02 Natural Gas	03 Steam Coal	04 Metal. Coal	05 Uranium U_3O_8	06 Hydro Energy	07 Firewood	08 Sugar-cane Product	09 Other Primary	10 Total Primary	11 Diesel Oil	12 Fuel Oil	13 Gasoline	14 LPG	15 Naphtha	16 Kerosene	17 Gas Coke	18 Coal Coke	19 Uranium In UO_2	20 Electricity	21 Charcoal	22 Alcohol Ethyl An. E Hyd.	23 Other Sec. of Petroleum	24 Non-energy Prod. Of Petrol.	25 Bitumen	26 Total Second. Energy	27 Total Energy
1 Production																												
2 Imports																												
3 Changes in Stocks																												
4 Total Supply																												
5 Exports and Bunkers																												
6 Non-utilized																												
7 Reinjection																												
8 Gross Domestic Supply																												
9 Total Transformation																												
9.1 Petroleum Refineries																												
9.2 Natural Gas Plants																												
9.3 Gasification Plants																												
9.4 Coking Plants																												
9.5 Nuclear Cycle																												
9.6 Public Util. Power Plants																												
9.7 Self-Prod. Power Plants																												
9.8 Charcoal Plants																												
9.9 Distilleries																												
9.10 Other Transformations																												
10 Losses in Distrib. and Storage																												
11 Final Consumption																												
11.1 final Non-energy Consumption																												
11.2 final Energy Consumption																												
11.2.1 Energy Sector																												
11.2.2 Residential																												
11.2.3 Commercial																												
11.2.4 Public																												
11.2.5 Agricultural																												
11.2.6 Transportation - Total																												
11.2.6.1 Highways																												
11.2.6.2 Railroads																												
11.2.6.3 Airways																												
11.2.6.4 Waterways																												
11.2.7 Industrial - Total																												
11.2.7.1 Cement																												
11.2.7.2 Pig Iron and Steel																												
11.2.7.3 Ferro-alloys																												
11.2.7.4 Mining and Pelletization																												
11.2.7.5 Non-fer. and Other Metals																												
11.2.7.6 Chemical																												
11.2.7.7 Food and Beverage																												
11.2.7.8 Textiles																												
11.2.7.9 Paper and Pulp																												
11.2.7.10 Ceramics																												
11.2.7.11 Others																												
11.2.8 Unidentified Consumption																												
12 Adjustments																												

2 Scope of energy statistics in your country and in your institution

The Brazilian energy statistics are compiled in physical units.

The useful energy statistics on the infrastructure for all the processes of energy extraction, production, transformation and distribution, as well as the reserve statistics of oil, coal etc. are covered by BEB.

3 Classifications used in the country in energy statistics

Brazil adopts several energy products classifications, according to the regulatory organizations and other influent entities of each area.

The foremost organizations responsible for the main areas are:

- Petroleum and Derivatives, Natural Gas, Oil Shale and Biocombustibles: Oil National Agency – ANP;
- Steam Coal and Metallurgical Coal: National Syndicate of Coal Extraction – SNIEC
- Hydraulic Energy and Electricity: National Agency of Electrical Energy – ANEEL
- Firewood and Charcoal: Brazilian Institute of Geography and Statistics Foundation – IBGE
- Sugar-cane, Alcohol and Sugar-cane Bagasse: Alcohol and Sugar Department – Agriculture Ministry
- Nuclear Energy: Nuclear Industries of Brazil – INB

The economic activities in Brazil are classified by the National of Economic Activities Classification – CNAE, in correspondence with international classifications. The CNAE was developed and is maintained by IBGE.

The sectorial classification adopted by the Brazilian Energy Balance (BEB) follows and is updated with the CNAE, and is oriented to energy-intensive sectors.

There are some differences between the Brazilian and international classifications in industry, but this fact is usual in all countries, because each country has its proper peculiarities in this area.

4 Data compilation

The recent rapid evolution of Brazilian energy matrix in the context of institutional changes, the diversity of the use of available energy resources, the different patterns in various regions of the country, the introduction of new technologies and the lack of regular statistics on the various forms of energy increase the effort required to draw up a statistical instrument such as BEB, in which the reality of Brazilian energy matrix is represented and production and consumption of different energy sources is properly quantified, primordially dependent of the quality of the information received.

Even if the objective of the energy accountancy in BEB can be described in a simplified form, the magnitude of the process of data collection, treatment and analysis of country's energy information to build an energy matrix for the base year is extremely complex. The main temporal determinant is the provision of data by the myriad agents and institutions.

Fundamentally, an energy balance does not produce primary data; it depends on the information received from official governmental institutions (agents) of the energy sector in Brazil, who generate the data as most of energy statistics originated from operations in public sector and utilities. These administrative data (do not follow the BEB format) perform 60% of the total Brazilian domestic energy supply.

However, a significant portion of these statistics (32%) refers to non-commercial energy sources, which do not have formal accounting instruments or are produced directly by consumers (self-producers) and thus do not appear in official registers, requiring BEB to take responsibility for originating this primary data. There are about 800 records in an on-line system, used strictly for self-producers data collection.

The other 8% are estimated, based on socioeconomic inquiries, made by IBGE. For example: residential and other sectorial firewood; agriculture and livestock diesel, agriculture wastes and small self-producers. To minimize this problem, MME and EPE are just elaborating a term of reference for researching the firewood sectorial consumption.

The difficulties arising from this process of data collection are themselves a significant challenge, which intensity increases in a country with dimensions, diversities and characteristics of Brazil.

For this reason, MME have used debugger spreadsheets, described in the item 7.

5 Institutional arrangement in the compilation of energy statistics

Despite the description above, in Brazil there is not yet a centralized information system, and neither a legalized obligation for its institutions to provide energy statistics. However, the regulatory agencies and other energy agents or government organizations are requested to provide their informations at the beginning of each year, being this MME's competence contemplated in its formation law.

The self-producers energy statistics collection does not figure in the MME's legal framework, but they provide energy data to MME by means of cooperation.

6 Units of measurement and conversion factors

6.1 Measurement units used for data collection and data dissemination by type of energy product

See the table below.

SOURCES	UNIT
PETROLEUM	m^3
HUMID NATURAL GAS	10^3 m^3
DRY NATURAL GAS	10^3 m^3
STEAM COAL 3100 kcal/kg	t
STEAM COAL 3300 kcal/kg	t

SOURCES	UNIT
STEAM COAL 3700 kcal/kg	t
STEAM COAL 4200 kcal/kg	t
STEAM COAL 4500 kcal/kg	t
STEAM COAL 4700 kcal/kg	t
STEAM COAL 5200 kcal/kg	t
STEAM COAL 5900 kcal/kg	t
STEAM COAL 6000 kcal/kg	t
NON-ESPECIFIED STEAM COAL	t
NATIONAL METALLURGICAL	t
IMPORTED METALLURGICAL COAL	t
URANIUM (U3O8)	kg
OTHER NON-RENEW. PRIM. SOURCES	toe
HYDRAULIC ENERGY	MWh
FIREWOOD	t
CANE JUICE	t
MOLASSES	t
SUGAR CANE BAGASSE	t
BLACK LIQUOR	m^3
OTHER WASTES	toe
DIESEL OIL	m^3
FUEL OIL	m^3
MOTOR GASOLINE	m^3
AVIATION GASOLINE	m^3
LIQUEFIED PETROLEUM GAS	m^3
NAPHTHA	m^3
LIGHTING KEROSENE	m^3
JET FUEL	m^3
GAS COKE	10^3 m^3
GASWORKS GAS-RJ	10^3 m^3
GASWORKS GAS-SP	10^3 m^3
COAL COKE	t
URANIUM CONTAINED IN UO_2	kg
ELECTRICITY	MWh
CHARCOAL	t
ANHYDROUS ALCOHOL	m^3
HYDRATED ALCOHOL	m^3
REFINERY GAS	m^3
PETROLEUM COKE	m^3
OTHER SOURCES OF PETROLEUM	m^3
COAL BITUMEM	m^3
ASPHALT	m^3
LUBRICANTS	m^3
SOLVENTS	m^3
OTHER NON-ENERGY OF PETROLEUM	m^3

6.2 Measurement units used for data dissemination by type of energy product

The BEB shows the energy products data in the same units of the data collection phase, but with the addition of the *basic unit*.

As energy flows are expressed in different units, it was necessary for BEB to adopt a uniform unit of measure: the ton oil equivalent – toe, because it is directly related to the most important current source of energy and expresses a physical value.

BEB currently adopts the most used international criteria for the conversion of energy commercial units to a common reference unit:

- the petroleum reference adopted was 10000 kcal/kg;
- all the conversion factors were determined using the inferior calorific powers of energy sources and
- it was considered the equivalence theoretical coefficient to hydraulic energy and electricity, which means 1kwh = 860 kcal (First Thermodynamic Axiom).

6.3 Specific conversion factors

The heating values used in conversion factors of Brazilian energy products are researched and evaluated in proper research centers, according to international patterns.

The conversion factors are not necessarily annuals, but BEB 2007 (base year 2006) shows them since 1991, like shows the table below.

Particularities about conversion factors by products

Petroleum and its Derivatives, Natural Gas, Alcohol and Oil Shale

Petrobras, by means of the quality control sectors of its petroleum refineries and of the Leopoldo Américo Miguez from Mello Research Center - CENPES, maintains updated the physical and chemical characteristics of all of its products, establishing at the end of each year, average coefficients for each one. Thus, the specific mass and the inferior heating values, observed in each year, are showed in the balance.

Steam Coal

The Brazilian steam coal is produced in several ways concerning its physical and chemical characteristics, presenting ash contents from 20% to 54% and several variations of sulphur, volatiles, fixed carbon and other contents. The coal analysis is done by some processing plants, with their own laboratories, in Science and Technology Foundation - CIENTEC and in the Mineral Technology Center - CETEM.

Its equivalence to toe is determined from the average calorific powers of the several types of processed coals.

Metallurgical Coal

a) Imported: it was adopted the calorific power provided by the National Metallurgical Company – CSN, which stays in the zone of the several imported metallurgical coals.

b) Brazilian: it was adopted the calorific power provided by CSN.

Uranium – U3O8

It was adopted the coefficient of equivalence provided by Brazilian Nuclear Industry.

Hydraulic Energy and Electricity

It was adopted the coefficient of equivalence of 0.086 toe/MWh, or 860 kcal/kWh. This coefficient was determined by the equivalence of water potential energy (mechanic energy) in heat.

Firewood

The primary unit of firewood is the stere cubic meter (m^3 st). It was adopted a density of 300 kg/m^3 st for firewood of residential use (colloquially identified as “picking firewood”), average value identified in research made by the Foundation Technologic Center of Minas Gerais - CETEC in cities from Minas Gerais State.

It was adopted a density of 390 kg/m^3 st for commercial firewood, considering the data provided by BRACELPA.

Sugar-cane Products

The calorific containts of Sugar-cane, considering its components (saccharose, fibers, water and others), is of, approximately, 1060 kcal/kg. Discounting from this quantity the energy existing in the fibers (bagasse), the calorific power for the Sugar-cane juice gets 620 kcal/kg. It was used the value of 1930 kcal/kg for the molasses with 55% of sugar weight reductors and capable of producing 350 liters of alcohol/t. For the bagasse it was used the calorific power experimentally calculated by the former Sugar and Alcohol Institute - IAA.

Other Primary Sources

This item contains vegetal and industrial residues use by heat and vapor generation. The equivalence to toe was established from the estimated average calorific power. For the Black Liquor, it was used the calorific power adopted by BRACELPA.

Gasworks Gas and Gas Coke

The calorific powers adopted by the Gas Company of Rio de Janeiro State - CEG and Gas Company of São Paulo State - COMGAS.

Coal Coke

It was used the calorific power theoretically obtained with the use of the Dulong’s Equation, from the chemical analysis of an average coke sampling.,

Uranium Contained in UO2

It was used the equivalence coefficient adopted by the Brazilian Nuclear Industries.

Charcoal

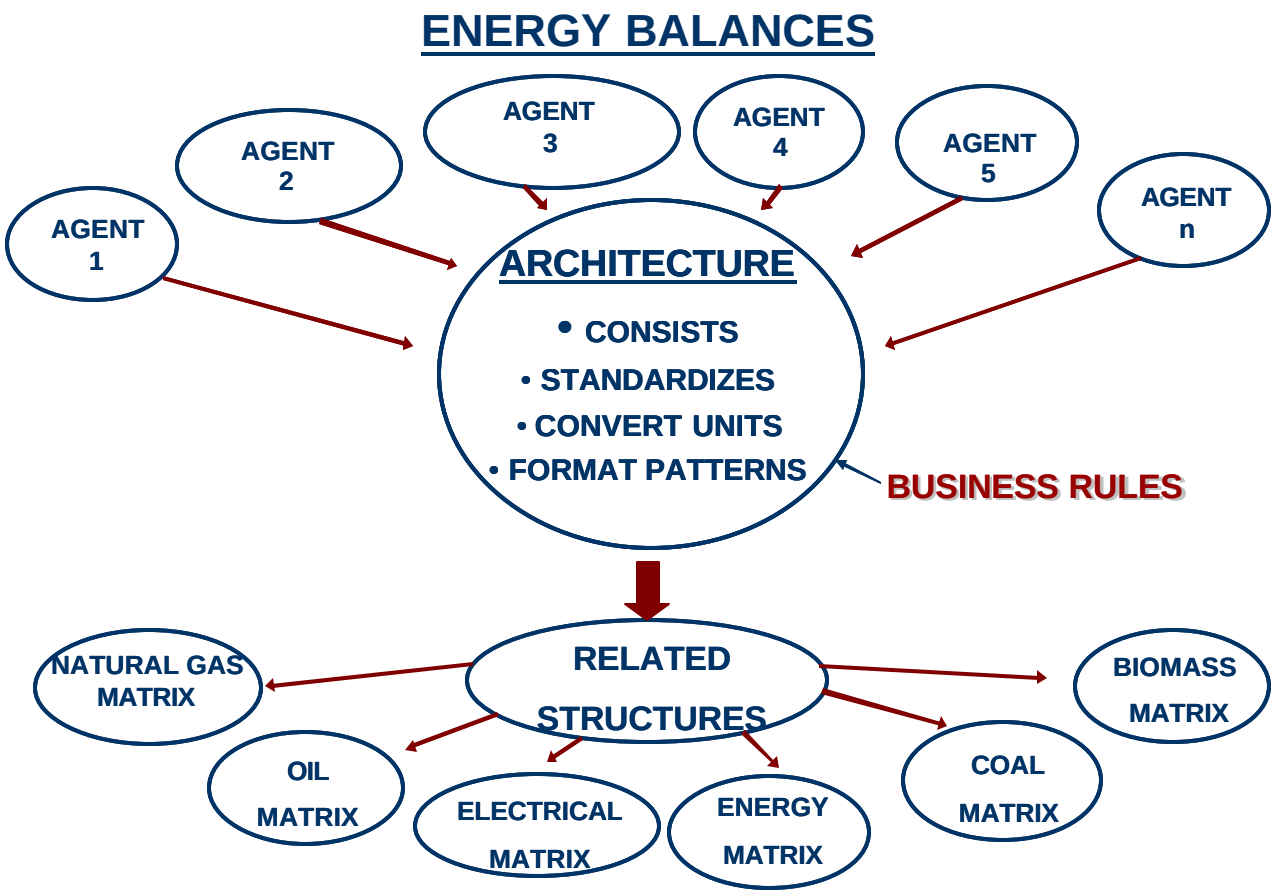
The caloric power used was in function of researches done by Belgo-Mineira and Acesita Metallurgical Companies.

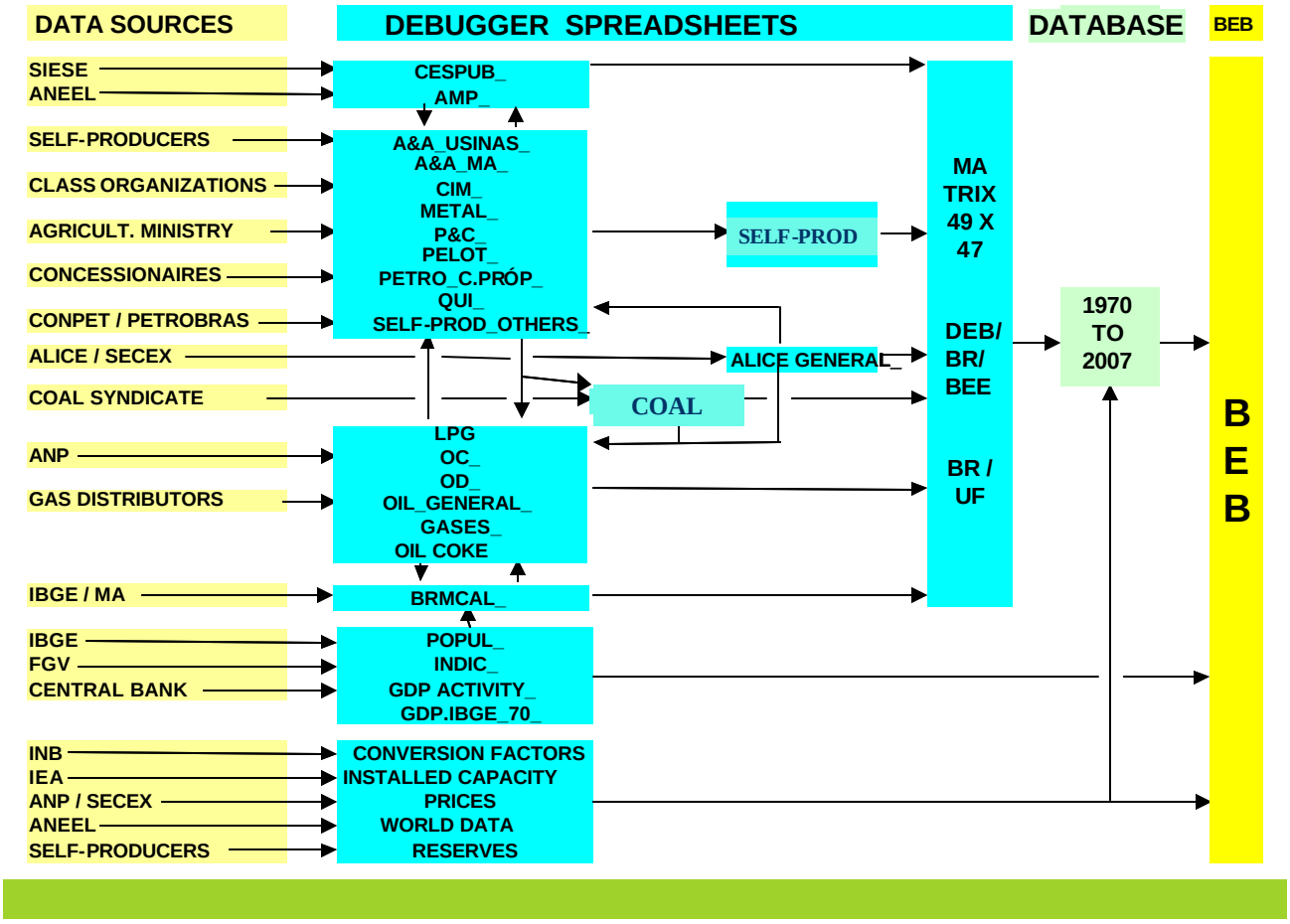
FONTES	UNIDADE	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2.004	2.005	2.006	2007
Petróleo	kcal/kg	10.190	10.190	10.190	10.190	10.190	10.190	10.190	10.190	10.180	10.180	10.180	10.180	10.200	10.200	10.200	10.218	10.194
Gás Natural Úmido (1)	kcal/m³	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930	9.930
Gás Natural Seco (1)	kcal/m³	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800	8.800
Carvão Vapor 3100 kcal/kg	kcal/kg	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950	2.950
Carvão Vapor 3300 kcal/kg	kcal/kg	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100
Carvão Vapor 3700 kcal/kg	kcal/kg	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.500	3.495	3.495
Carvão Vapor 4200 kcal/kg	kcal/kg	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000	4.000
Carvão Vapor 4500 kcal/kg	kcal/kg	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.250	4.249	4.249
Carvão Vapor 4700 kcal/kg	kcal/kg	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450	4.450
Carvão Vapor 5200 kcal/kg	kcal/kg	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.900	4.901	4.901
Carvão Vapor 5900 kcal/kg	kcal/kg	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600	5.600
Carvão Vapor 6000 kcal/kg	kcal/kg	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700	5.700
Carvão Vapor sem Especificação	kcal/kg	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850	2.850
Carvão Metalúrgico Nacional	kcal/kg	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420	6.420
Carvão Metalúrgico Importado	kcal/kg	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400	7.400
Urânio U3O8																		
Outras Não Renováveis																		
Energia Hidráulica (2)	kcal/kWh	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860
Lenha Comercial	kcal/kg	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100	3.100
Caldo de Cana	kcal/kg	600	600	600	600	600	600	600	600	605	610	620	623	623	605	605	607	625
Melaço	kcal/kg	1.800	1.800	1.800	1.800	1.800	1.800	1.800	1.805	1.815	1.830	1.845	1.850	1.850	1.804	1.795	1.800	1.850
Bagaço de Cana (3)	kcal/kg	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130	2.130
Lixívia	kcal/kg	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.860	2.863	2.863
Outras Renováveis																		
Óleo Diesel	kcal/kg	10.220	10.220	10.220	10.220	10.220	10.220	10.220	10.142	10.140	10.130	10.100	10.100	10.100	10.150	10.100	10.095	10.095
Óleo Combustível Médio	kcal/kg	9.600	9.600	9.600	9.600	9.600	9.600	9.600	9.600	9.590	9.590	9.590	9.590	9.590	9.590	9.590	9.590	9.590
Gasolina Automotiva	kcal/kg	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.550	10.500	10.450	10.400	10.400	10.400	10.400	10.400	10.400	10.400
Gasolina de Aviação	kcal/kg	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600	10.600
Gás liquefeito de Petróleo	kcal/kg	11.160	11.160	11.160	11.160	11.160	11.160	11.160	11.150	11.150	11.120	11.100	11.100	11.100	11.100	11.100	11.100	11.100
Nafta	kcal/kg	10.750	10.750	10.750	10.750	10.750	10.750	10.750	10.684	10.630	10.630	10.630	10.630	10.630	10.630	10.630	10.630	10.630
Querosene Iluminante	kcal/kg	10.540	10.540	10.540	10.540	10.540	10.540	10.540	10.461	10.400	10.400	10.400	10.400	10.400	10.400	10.400	10.400	10.400
Querosene de Aviação	kcal/kg	10.550	10.550	10.550	10.550	10.550	10.550	10.550	10.461	10.400	10.400	10.400	10.400	10.400	10.400	10.400	10.400	10.400
Gás de Coqueria (1)	kcal/m³	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300	4.300
Gás Canalizado Rio de Janeiro (1)	kcal/m³	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800	3.800
Gás Canalizado São Paulo (1)	kcal/m³	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500	4.500
Coque de Carvão Mineral	kcal/kg	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900	6.900
Urânio contido no UO2																		
Eletricidade (2)	kcal/kWh	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860	860
Carvão Vegetal	kcal/kg	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460	6.460
Álcool Etílico Anidro	kcal/kg	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750	6.750
Álcool Etílico Hidratado	kcal/kg	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300	6.300
Gás de Refinaria	kcal/m³	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.400	8.362
Coque de Petróleo	kcal/kg	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.390	8.361
Outros Energéticos de Petróleo	kcal/kg	10.190	10.190	10.190	10.190	10.190	10.190	10.190	10.190	10.180	10.180	10.180	10.180	10.200	10.200	10.200	10.200	10.200
Outras Secundárias - Alcatrão	kcal/kg	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550	8.550
Asfaltos	kcal/kg	9.550	9.550	9.550	9.550	9.550	9.550	9.550	9.600	9.700	9.750	9.790	9.790	9.790	9.790	9.790	9.790	9.752
Lubrificantes	kcal/kg	10.170	10.170	10.170	10.170	10.170	10.170	10.170	10.160	10.150	10.140	10.120	10.120	10.120	10.120	10.120	10.120	9.881
Solventes	kcal/kg	10.700	10.700	10.700	10.700	10.700	10.700	10.700	10.600	10.550	10.550	10.550	10.550	10.550	10.550	10.550	10.550	10.550
Outros Não-Energ.de Petróleo	kcal/kg	10.190	10.190	10.190	10.190	10.190	10.190	10.190	10.190	10.180	10.180	10.180	10.180	10.200	10.200	10.200	10.200	9.886

7 Energy balances

Brazil has a historic collection of energy balances, from 1970 tol 2007, in the form of Excel spreadsheets with 49 energy flows (rows) by 47 energy products (columns), separated in primary and secondary e nergy, expressed in both basic or physical units.

For each annual matrix elaboration, it is used about 25 debugger spreadsheets, in order to do a consistency analysis from the official agents administrative informations and from the self-producer on-line collection.





8 Data quality assurance and dissemination

Data quality assurance used in energy statistics

All the 25 debugger spreadsheets are provided of statistics validation mechanisms (business rules) as: percentage variations in relation to the past year; transformations centers pattern efficiencies; statistic adjustments within reasonable limits etc.

Dissemination policy

Considering the temporal determinant of the process and the availability of data from agents and institutions that supply the primary data each year, the printed version of BEB with the completed and consolidated national energy statistics is traditionally published in the second half of the year following the base year that the data refers to.

However, to anticipate the results, as has occurred in the last few years, EPE and MME try to make the results available beforehand through. Thus, BEB relative documents are divulged as:

- Digital version of the Preliminary Results Report, in the first half of each year;
- Printed and digital versions of the Brazilian Energy Balance and its respective Executive Summary, in the second half of each year.

In the last year it was published about 3,200 issues of BEB in Portuguese, distributed to the Brazilian energy sector agents, self-producers, state governments, academic institutions, research centers, governmental organizations etc.

Besides, BEB is totally accessible by anyone in the globe, on the MME's portal: www.mme.gov.br, menu "Publicações" (Publications).

9 Uses of energy statistics

Main uses of energy statistics in your country

The Brazilian Energy Balance is a complete statistical collection, designed and edited aiming to a large range of users and as well suitable to a great variety of applications.

In the government domain, MME makes its best efforts in order to keep BEB updated and accurate, demanding to the other Ministries and organisms a large amount of useful data exchange, and also to provide annually energy informations properly elaborated, accordingly to each application.

Like the official policy maker on energy area, MME has some important internal applications of energy statistics, mainly in the energy planning area, by means of using BEB's time series in order to subsidize different studies of energy supply and demand projections, as the National Plan of Energy (PNE 2030) and the Decennial Plan of Energy (PDE 2016), for example.