Greenhouse Gas Inventory
Year 2013

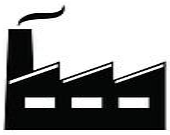
Cemig – Companhia Energética de Minas Gerais

1. Cemig

Cemig celebrated its 61st anniversary in 2013. Since its founding on May 22, 1952, the Company has assumed the role of promoting collective well-being in the regions where it operates in an innovative and sustainable manner. This determination has made it the largest energy distributor with the most extensive system of power lines and networks, as well as one of the largest energy generation and transmission companies in the country.

The company operates in the areas of natural gas exploration and distribution, and data transmission. However, Cemig's main business areas are electric energy generation, transmission and distribution and energy solutions (Table 1).

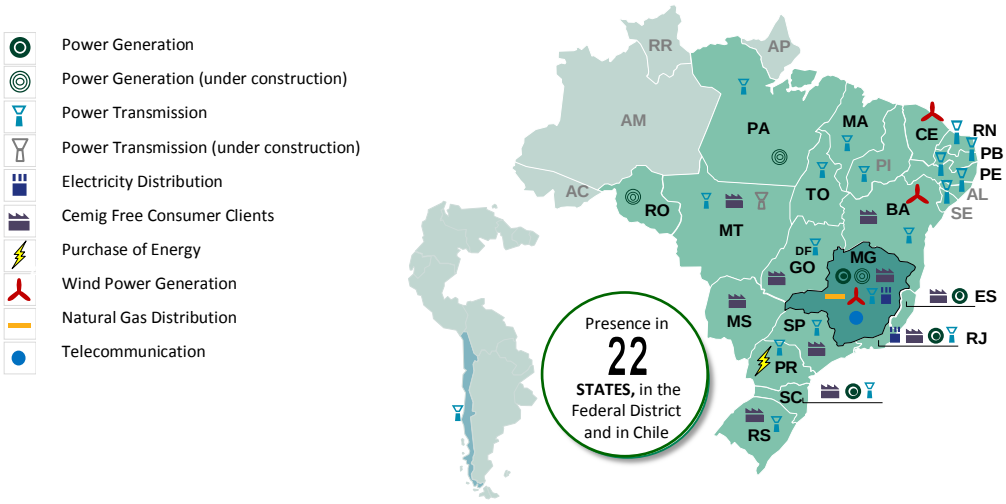
Table 1 - Main business areas of Cemig

			
Generation	Transmission	Distribution	Commercialization
Installed capacity: 7,038 MW	Extension of lines: 9,748 km	Extension of networks: 484,469 km	25% of market share

Cemig has 7,922 direct employees (base date Dec. 2013). In addition to the holding company, Companhia Energética de Minas Gerais – Cemig, the Cemig Group consists of the wholly-owned subsidiaries Cemig Geração e Transmissão S.A. (Cemig GT), Cemig Distribuição S.A. (Cemig D), and a number of subsidiaries (151), consortia (18), and an equity fund with assets in 23 Brazilian states including the Federal District.

The Figure 1 shows the location of Cemig's operations according to the main activity sectors.

Figure 1: Geographical map of the Company's main activities



For a more detailed description of Cemig's operations, please visit here.

See the full organizational chart of Cemig Group companies.

2. About the inventory

In line with corporate positioning on the "Commitment to Climate Change", Cemig invests in initiatives that put it in a positive position to efficiently manage its impacts on and risk exposure to global climate change. Thus, the company's strategy includes actions and initiatives required to deal with any necessary mitigation, the potential need for adaptation to climate change, and the transparent disclosure to the company and its shareholders of related issues.

In this sense, Cemig quantifies its emissions and has made its Greenhouse Gas Inventory public for the third consecutive time. The Company acknowledges its share of responsibility on the subject and identifies opportunities to reduce emissions and costs, as well as adequately manage risks related to climate change. It should be noted that the last three inventories were submitted to independent verification by *Bureau Veritas Certification* (See Annex 1 Verification Statement, pg. 23).

The inventory for 2013 was prepared according to the following main guidelines:

- ABNT NBR ISO 14064-1. Specifications with guidance at the organizational level for quantification and reporting of greenhouse gas emissions and removals.
- Specifications of the Brazilian GHG *Protocol* – Accounting, Quantification and Publication of Corporate Inventories of Greenhouse Gas Emissions - Second Edition.
- *Intergovernmental Panel on Climate Change* (IPCC) 2006, 2007, IPCC *Guidelines for National Greenhouse Gas Inventories prepared by the National Greenhouse Gas Inventories Program.*
- "*The Greenhouse Gas Protocol* – A Corporate Accounting *and Reporting Standard* – Revised Edition."
- *Corporate Value Chain (Scope 3) Accounting and Reporting Standard – Supplement to the GHG Protocol Corporate Accounting and Reporting Standard (WRI / WBCSD)*

3. Methodology applied

GHG emissions were calculated using the "Tool for Estimating Greenhouse Gases for Intersectoral Sources" (GHG Protocol Tool) – Brazilian Version "Ferramenta v2013.1".

The method for calculation was chosen primarily in view of the internal assessment on data availability and specific emission factors in order to deliver more transparent and consistent results in line with the reality of the electricity sector. Specific national GHG emission factors have been adopted and recognized by the principle of applicability followed by emission factors of the Intergovernmental Panel on Climate Change - IPCC (1996, 2001, 2006, and 2007). The reference data for calculating Scopes 1, 2 and 3 were gathered using a centralized approach with those responsible for their management and were determined using the following documents:

- existing records in Cemig's ERP system
- records in operational systems and corporate control records
- invoices and tax receipts
- contracts
- spreadsheet records

It should be noted that the areas responsible for information provided are certified in international management standards such as ISO 9001 or NBR ISO 14001/2004, which are both internally audited by a third-party certification body.

Given the complexity of some data gathering, especially for calculating emissions, further clarification is needed for these cases.
To estimate the percentage of SF_6 loss, a factor of 0.71[1]% per annum was used. This bibliographic data is acceptable for the sector in which the company operates.

With regard to calculating the distance between airports in the category "Business Travel – Scope 3", the SABRE Red Workspace system version v.2.10.1 developed by SABRE Inc. was used.

Cemig receives calculations of energy losses in Transmission that are determined externally, assigned to its responsibility, and accounted for by the Chamber of Electric Energy Commercialization - CCEE. For calculations of energy losses in Distribution, Cemig determines the data using the Procedure for Electricity Distribution in the National Electric System – PRODIST. Module 7 - Calculating Losses in Distribution.

[1] E.Preisegger, R.Dürschner, W.Klotz, C.-A.König, H.Krähling, C.Neumann, B Zahn. Life Cycle Assessment Electricity Supply Using SF6 Technology. Available at http://www.denix.osd.mil/cmrmd/upload/Life-Cycle-Assessment-SF6-Preisegger-at-al.pdf

4. Period Covered

The calculation of emissions from direct and indirect activities carried out by Cemig between January 1, 2013 and December 31, 2013. The reference base year is 2008 for the calculations.

5. Organizational and geographical limits

For reporting purposes in this inventory, Cemig adopted the Operational Control approach. In other words, the Company will measure emissions of companies in which it has 100% control. All of these companies are located in Brazil. For purposes of better understanding, all international travel considered for emission calculations take into account routes departing from or arriving in Brazil.
The ten companies in this inventory in which Cemig has complete control are listed in Table 2.

Table 2 - Companies fully owned by Cemig

1	Cemig Geração e Transmissão S.A. (Cemig GT)
2	Cemig Distribuição S.A. (Cemig D)
3	Rosal Energia S.A.
4	Sá Carvalho S.A.
5	Efficientia S.A.
6	Usina Térmica Ipatinga S.A.
7	Cemig PCH S.A.[2]
8	Horizontes Energia S.A.[3]
9	Usina Térmica do Barreiro S.A.
10	Cemig Telecomunicações S.A.

6. Operational limits and emission sources

Emissions were calculated from the following sources of the companies reported (Table 3).

[2]Four small hydropower plants - SHPs operated by Cemig GT. Emissions are accounted for by Cemig GT.

[3]Small hydropower plant operated by Cemig GT. Emissions are accounted for by Cemig GT.

Table 3 - Emission sources and category

SCOPE 1	
Emission Sources	**Category**
Corporate fleet fuel consumption	Mobile combustion
Fuel consumption of aircraft and small boats	Mobile combustion
Emergency generators	Stationary combustion
Fuel used during startup of the gas thermal plant, Barreiro TPP	Stationary combustion
Fuel used at Igarapé TPP	Stationary combustion
Machinery and equipment	Stationary combustion
SF6 emissions from electrical equipment	Fugitive emissions
Fertilizers to produce seedlings and plant vegetation	Agricultural activities
Fuels used for forklifts and cranes	Stationary combustion
SCOPE 2	
Emission Sources	**Category**
Electricity consumption in administrative and operational units	Purchase of electricity
Technical losses of electric energy in Transmission and Distribution systems	Purchase of electricity
SCOPE 3	
Emission Sources	**Category**
Outsourced transport of solid waste, materials and equipment	Upstream Transportation and Distribution
Air travel	Business travel
Gasoline, ethanol, and diesel consumption by distribution contractors	Upstream Transportation and Distribution
Electricity consumption by end consumers	Use of goods and services sold
Outsourced transportation for personnel	Personnel transportation

It should be noted in this inventory that the contribution of hydropower plant reservoirs to climate change was not assessed due to the lack of a clear scientific conclusion about their role in greenhouse gas emissions. Universally accepted and credible methodologies and conceptual models to measure GHG emissions in reservoirs are not available.

7. GHG Emissions

Cemig presents historical data for the last five years (2009-2013) and details on Scope 1, Scope 2, and Scope 3 emissions in the Table 4. Comments on emission performance are included in subsequent items.

Table 4: Historical Data for Scope 1, 2, and 3 GHG Emissions – 2009 to 2013.

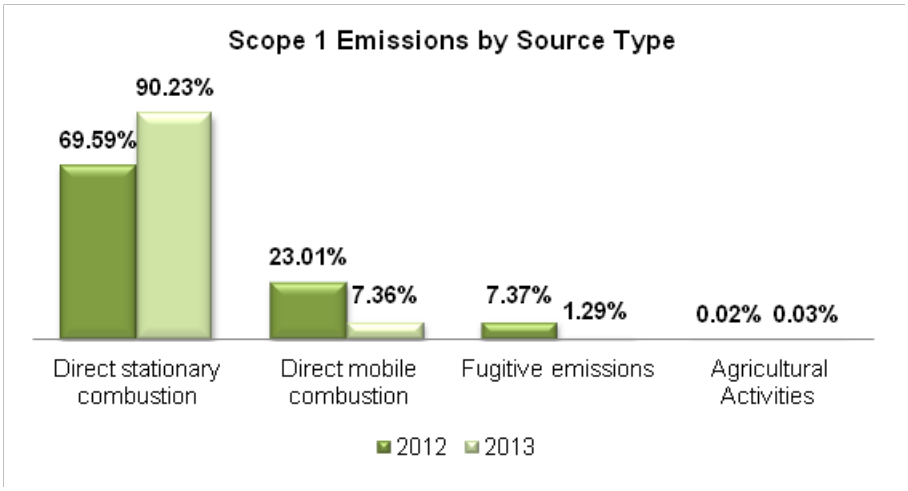
Year	Scope 1 (tCO_2e)	Scope 2 (tCO_2e)	Scope 3 (tCO_2e)
2009	111,758	390,039	ND
2010	59,642	295,478	4,937,535
2011	24,384	168,189	5,202,775
2012	53,567	436,750	5,341,863
2013	**156,618**	**608,971**	**7,658,967**

7.1 Scope 1 Emissions

Scope 1 emissions in 2013 totaled 156,618 tCO_2e consisting of 11,765 tCO_2 from the fleet of vehicles and aircraft, 3,493 tCO_2e from SF_6 gas leakage from electrical equipment, 130,693 tCO_2e from the Igarapé THP, 10,480 tCO_2e from the Barreiro THP start up, 35 tCO_2e from the use of emergency generators, 103 tCO_2e from the use of machines and forklifts, and 45 tCO_2e from the use of fertilizers.

Direct emissions from Cemig measured 0.005887 kg CO_2e/MWh.
Figure 2 shows Scope 1 emissions by source type and their contribution to the totals for 2012 and 2013.

Figure 2: Direct emissions by source type between 2012 and 2013 (Scope 1).



7.1.1 Stationary Combustion

At Cemig, these emissions primarily originate from the company's three thermal power plants (99.9%) and from machinery, equipment and emergency generators (0.1%). The Igarapé TPP (131 MW) uses residual fuel oil and diesel. Responsible for 84.5% of Scope 1 emissions in 2013, the Igarapé TPP was in the process of commissioning equipment after undergoing a revitalization program, which resulted in fuel consumption without necessarily generating energy. This figure (emissions / energy generated) shall be accounted for when the thermal power plant resumes operation from 2014.

For better data comparability, it should be noted that Scope 1 emissions in 2009 accounted for Igarapé HPP operations. Consumption at the Igarapé HPP was not accounted for in 2010, 2011, and 2012 since the plant was not dispatched in 2010 and 2011 and was out of operation in 2012 for renovations. It is noteworthy that the decision to dispatch energy in Brazil (composition of hydrothermal generation every week) is made by the Electric System National Operator - ONS based on prospective analyzes for future inflow scenarios, expected growth in energy consumption, and the set schedule for expansion of new power plants. When hydrologic conditions and water storage levels in system reservoirs are favorable, thermoelectric generation is reduced, and priority is given to hydroelectric generation. Under unfavorable hydrologic conditions and low storage levels, or even to increase assurances of supply to the market due to uncertainty of expansion generation projects, the ONS tends to increase thermoelectric generation and consequently reduce hydroelectric generation in order to raise water storage levels of flow-regulating reservoirs.

The other two thermal plants, Ipatinga TPP (40 MW) and Barreiro TPP (12.9 MW), use blast furnace gases, tar, and other waste gases generated in steel industrial processes as their main fuels. Fossil fuels (fuel oil in the Ipatinga TPP and natural gas - NG in the Barreiro TPP) are only used when the machines are started. In 2013, the Ipatinga TPP did not use fossil fuels since coke oven gas was used. NG consumption in the Barreiro TPP decreased by 15.8% from 6,015,851 Nm^3 in 2012 to 5,065,350 Nm^3 in 2013.

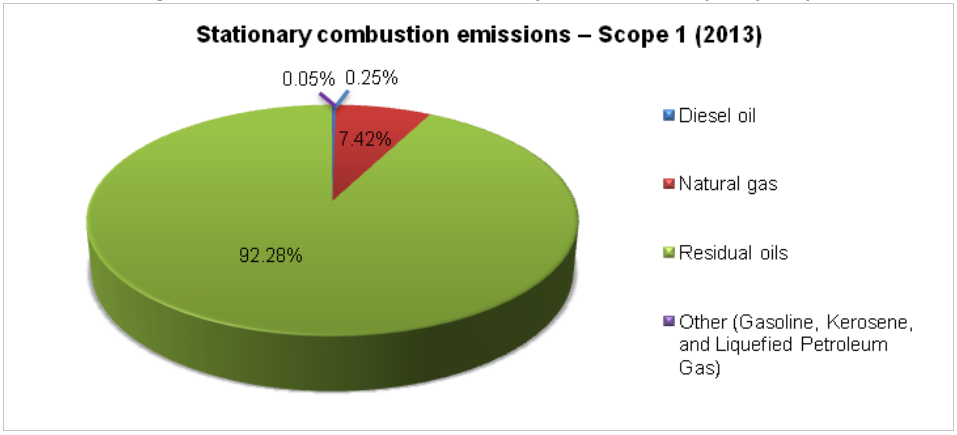
Still, it is noteworthy that the gases reused from the steel process and burned in the Ipatinga and Barreiro TPPs are not accounted for here. This is due to:

I) In the case of the Ipatinga TPP, the gases come from the production process of the Usiminas power plant in Ipatinga. These gases come from the coal coking and the use of coke in the company's Blast Furnaces. Even if the gases originate from fossil fuels, the emissions are already accounted for in the inventory for the Usiminas power plant. Including these emissions here would result in double counting, which should be avoided as good practice.

II) In the case of the Barreiro TPP, the gases are generated in the same way during the production process at Vallourec and are accounted for in that company's inventory. In addition to this fact, these gases are generated from the use of charcoal produced from planted forests. In other words, it is produced from wood, a sustainable source. Therefore, these emissions are considered neutral.

Figure 3 shows GHG emissions according to the fuel used.

Figure 3: Emissions from stationary combustion (Scope 1).

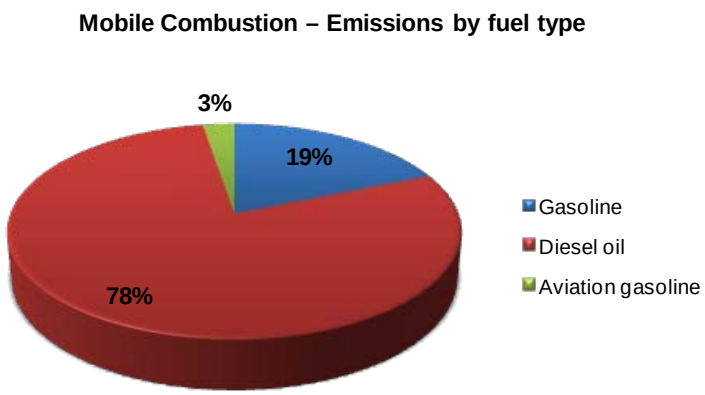


7.1.2 Mobile Combustion

Aiming at reducing emissions from mobile combustion processes by optimizing logistics and management, fleet renewal, and reducing distances covered, Cemig achieved a 33.7% cumulative reduction of emissions from 2009 to 2013. In 2012, emissions from the fleet decreased from 12,322 tCO_2e in 2012 to 11,765 tCO_2e in 2013.

These emissions are from the use of gasoline, diesel, compressed natural gas (CNG), ethanol and jet fuel for Cemig's fleet. As illustrated in the Figure 4, the largest percentage (78%) of mobile emissions are from diesel vehicles.

Figure 4: Emissions according to fuel used (Scope 1).



7.1.3 Fugitive Emissions

Cemig's fugitive gas emissions originate from SF_6 gas used in electrical equipment such as insulators or to extinguish arcs in the transmission and distribution of electricity. SF_6 fugitive emissions fell 11.6% from 3,950 tCO_2e in 2012 to 3,493 tCO_2e in 2013.

7.1.4 Agricultural Activities

Emissions from Cemig's agricultural activities result from the use of organic or chemical fertilizers used in the production of native species seedlings for urban tree planting, to plant riparian vegetation, and to use as nutrients for fish farming. From 2012 to 2013, CO_2 equivalents increased from 12 tCO_2e to 45 tCO_2e.

7.2 Scope 2 Emissions

Scope 2 emissions refer to the electricity consumed in industrial and administrative facilities and the National Interconnected System (SIN). They also refer to power losses in transmission and distribution (T&D) in the electric energy system, which is the Company's main source of emissions. As described in the section 'Methodology', energy losses are calculated using the energy balance determined in accordance with Aneel's standard procedures. For comparative reasons, it should be noted that Scope 2 emissions are strongly influenced by changes in the Brazilian emission factor, [4] which varies depending on the extent to which thermal power plants are dispatched throughout the year (Table 5).

Table 5: History of National Interconnected System (SIN) Emission Factors

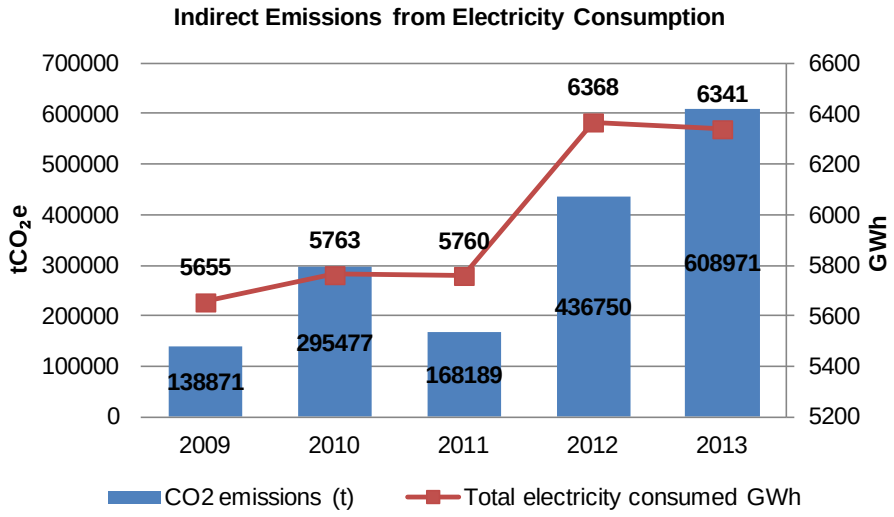
Year	Yearly average tCO_2/MWh
2009	**0.0246**
2010	**0.0513**
2011	**0.0292**
2012	**0.0686**
2013	**0.0960**

From total Scope 2 emissions in 2013, 0.8% (4,921 tCO_2e) originated from energy consumption and 99.2% (604,050 tCO_2e) from technical losses.

Total scope 2 emissions, Table 5, rose by 77% from 138,871 tCO_2e to 608,971 tCO_2e.

[4] http://www.mct.gov.br/index.php/content/view/321144.html#ancora

Figure 5: Indirect emissions from electricity consumption (Scope 2).



The main actions taken to minimize emissions from energy losses in T&D are described in the section 'Goals'.

7.3 Scope 3 Emissions

Cemig seeks to continuously improve the inventory of Scope 3 emissions by including new emission sources according to the assessment of the availability of data from third parties of the quality, accuracy, and traceability of this information. Scope 3 emissions according to emitting activity are shown in the Table 6.

Table 6: GHG emissions in tCO_2e according to Scope 3 emitting activity.

GHG Emissions (tCO_2e)	2011	2012	2013
Transport of Personnel and Equipment (Employee Transportation)	1,618	2,874	2,035
Business travel	1,786	1,953	1,691
Operation and maintenance services for distribution services (fossil fuel consumption by contractors) (Upstream Transportation and Distribution)	ND	15.313	11.563
Sale of Power (use of goods and services sold)	5,199,371	5,321,724	7,643,677

The main source of Scope 3 emissions is electric energy consumption by end consumers. In 2013, Cemig registered a 2.6% increase in total sales, which generated a 43.6% increase in indirect emissions, highlighted of course by the increased emission factor of the SIN from 0.0686 in 2012 to 0.0960 in 2013. The emission factor of the SIN was used because the calculation by the Ministry of Science and Technology includes the energy dispatched by Cemig to the National Interconnected System even though the Company's emission factor is lower than that of the Brazilian matrix.

Representing 0.02% of indirect emissions, business travel accounted for 1,691 tCO_2e. The number of segments flown decreased by 19% compared to 2012, providing a 13.4% reduction in these emissions. About 650 videoconferences were carried out at Cemig in 2013, which reduced the need for business travel by employees. Currently, there are 26 locations away from Cemig headquarters properly equipped and ready for video conferencing.

The other emission sources include the transport of waste, materials, and equipment with 1,194 tCO_2e and personnel transportation with 841 tCO_2e, which represent a reduction by approximately 44.4% and 15.7% respectively, compared to 2012.

There was a significant increase in emissions from the outsourced transport of waste, materials, and equipment when compared to other Scope 3 emissions due to a greater need for this kind of transport for the works carried out under the Distribution Development Plan (PDD) implemented by the company throughout the state. For more information about the PDD, please see the 2013 Annual & Sustainability Report:
http://cemig.infoinvest.com.br/static/enu/relatorios_sustentabilidade.asp?idioma=enu

Emissions from the vehicles of contractors providing operation and maintenance services for Cemig Distribuição totaled 11,563 tCO_2e. Of the 37 companies that provide this type of service, 20 responded with information for the inventory, which is equivalent to 54% of the contractors in 2013.

Training for preparing emission inventories

Under the Carbon Management in the Value Chain program, Cemig invited 50 of its suppliers to participate in a training session where awareness was raised about climate change and the need to create greenhouse gas inventories, which they were trained to do. The expectation is that suppliers will be able to compile emission inventories that can be used as a base for Cemig's information.

This program was developed by the Brazilian Business Council for Sustainable Development (CEBDS) in partnership with KPMG, an international consulting firm, and other large Brazilian companies.

The Carbon Management in the Value Chain program reinforces the importance the issue of climate change is to Cemig and is aligned with the company's public commitment expressed in the document entitled '10 Initiatives for the Climate'. Thus, the engagement and participation of Cemig's major suppliers is necessary for broadening and improving the management of greenhouse gas emissions.

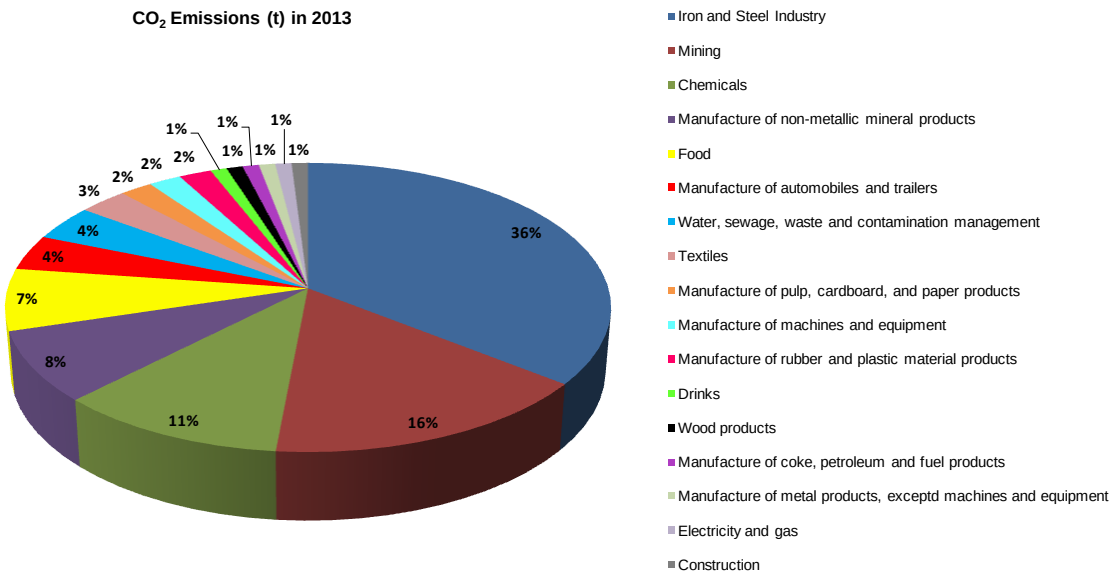
7.3.1 Emissions from energy use by third parties

The energy sold by Cemig corresponding to the energy sales to captive consumers and free clients in the concession area of Minas Gerais and outside the state, the sale of electricity to other agents of the electricity sector in the Free Market (ACL) and Regulated Market (ACR), sales under the Proinfa program to encourage alternative electricity sources, as well as sales in the CCEE (wholesale market) – eliminating transactions between Cemig Group companies.

Of all the sectors where Cemig sells energy, the industrial sector is the largest consumer. Therefore, a qualitative analysis of emissions from Cemig's consumption of electricity is shown below. To calculate these emissions, energy consumption in the sector and the emissions factor of the National Interconnected System (SIN) were used.

CO_2 emissions by the steel industry accounted for 36% of the total emissions of industrial consumers in 2013. The chart below (Figure 6) shows the percentage of CO_2 emitted by each industrial sector in 2013.

Figure 6: Percentage of CO_2 emissions by industrial category in 2013.



8. Total Emissions

Cemig's total emissions for the 8 companies in this inventory are shown in the Table 7.

Table 7: Breakdown of emissions by company (tCO_2e)

GHG Emissions (tCO_2e)	Scope 1					Scope 2
	CO_2	CH_4	N_2O	SF_6	Total (tCO2e)	CO_2
Cemig Geração e Transmissão S.A.	128,926	1,303	2,120	1,008	133,357	828
Cemig Distribuição S.A.	10,201	17	40	2,486	12,744	607,423
Rosal Energia S.A.[1]	8	0	0	0	8	0
Sá Carvalho S.A.[1]	7	0	0	0	7	0
Efficientia S.A.[2]	5	0	0	0	5	0
Usina Térmica Ipatinga S.A.[1]	0	0	0	0	0	0
Usina Térmica do Barreiro S.A[1].	10,470	5	6	0	10,481	0
Cemig Telecomunicações S.A.	16	0	0	0	16	720
Total	**149,633**	**1,325**	**2,166**	**3,494**	**156,618**	**608,971**

[1] These power plants generate the energy consumed.
[2] Use facilities of Cemig Distribuição S.A.

The data provided indicates that Cemig GT and Cemig D emit 93.3% of Scope 1 emissions, mainly through the use of fossil fuels for the Igarapé TPP at Cemig GT and the vehicle fleet at Cemig D. In relation to Scope 2 emissions, Cemig D accounts for 99.7% of total emissions from distribution system losses.

The Table 8 shows a summary of Scope 1, 2 and 3 emissions according to the type of gas.

Table 8 - Consolidated data for all GHG emissions and scopes

Emissions in metric tons of CO_2 equivalent (tCO_2e)			
GHG (t)	Scope 1	Scope 2	Scope 3
CO_2	149,633.4	608,971.0	7,656,030.6
CH4	1,325	0.0	19.8
N_2O	2,165.7	0.0	48.9
SF6	3,493.4	0.0	0.00
Total	**156,617.5**	**608,971.0**	**7,656,099.3**

9. Scope 1, quantified separately for each GHG

The Table 9 shows direct GHG emissions broken down by greenhouse gas (t) in tCO_2e.

Table 9: GHG emissions in tons of GHG gas and in metric tons of CO_2 equivalent (tCO_2e).

GHG Gas	In metric tons for each gas	Global Warming Potential [1]	In metric tons of CO_2 equivalent (tCO_2e)
CO_2	149,633	1	149,633
CH_4	53	25	1,325
N_2O	7.27	298	2,166
HFCs	0	12,000 – 14,800	0
PFCs	0	7,390 – 12,200	0
SF_6	0.15	22,800	3,494
Total	-	-	156,618

[1] Source: IPCC (2007)

CO_2 is the gas that is most representative in calculating total emissions due to the significant use of fossil fuels for Cemig's fleet and thermal power plants calculated in Scope 1.

10. Corporate goals

Aware of its commitment to mitigate their GHG emissions that contribute to global climate change, Cemig has set a corporate goal of reducing direct emissions as shown in the Table10.

Table 10 - Corporate Goal for Reducing Direct Emissions

Scope	% reduction relative to the base year	Metric	Base year	Normalized base year emissions (tCO_2e/MWh)	Target year
1	8%	tCO_2e/MWh	2008	0.007801	2015

The intensity of Cemig's direct emissions in 2013 was reduced to 0.005887 tCO_2e/MWh, 24.5% lower than the figure set as a goal. The achievement of the proposed goal will be duly verified at the end of the monitoring period scheduled for December 2014.

With the same aim, Cemig has set a goal of reducing electric energy consumption as shown in the Table 11.

Table 11 - Corporate Goal for Reducing Electric Energy Consumption

Scope	% of scope emissions	% reduction relative to the base year	Metric	Base year	Organizational limits	Target year
2	0.8%	4%	GJ	2011	Cemig GT and Cemig D	2020

Another set goal is related to managing technical losses of electricity transmission and distribution as shown in the Table12.

Table 12 - Corporate Goal for Reducing Technical Losses of Electricity

Scope	% of scope emissions	Goal percentage	Metric	Base year	Organizational limits	Target year
2	99.2%	Staying below energy losses of 10.85%	% of losses calculated	2013	Cemig GT and Cemig D	2017

11. GHG emissions from biomass

"Carbon neutral" emissions from burning biomass is reported separately in accordance with the guidelines of the GHG *Protocol.* For fossil fuels with biofuels added, values specified by the National Petroleum Agency (ANP) have been adopted and compiled in the calculation tool of the Brazil GHG *Protocol*. In 2013, the average ethanol (anhydrous) content in gasoline sold in Brazil was 23.3% and biodiesel content was 5% in diesel fuel.
The Table 13 shows emissions from burning biomass.

Table 13 - GHG emissions from biomass

Scope 1	*828,097 tCO_2e*
Scope 3	*808,184 tCO_2e*
Total	**1,636.281 tCO_2e**

12. GHG reductions and removals

Cemig performs some actions that indirectly contribute to GHG removal. However, given the specific characteristics that quantifying emissions with a low level of assertiveness and integrity would present, at the moment the Company has chosen not to quantify them.

Below are some of the initiatives that contribute to GHG removal.

- The Riparian Reforestation Program is a project involving the Company and rural landowners of areas surrounding reservoirs considered as Permanent Protection Areas (APP) by the Public Prosecutor's Office - Ministério Público. Cemig encourages owners to preserve their areas and promotes riparian reforestation. For this purpose, the Company supplies the seedlings and pays the costs for planting. The owners in turn provide the areas for planting and commit to the proper maintenance. Cemig has recovered approximately 800 hectares of riparian forests around its reservoirs in partnership with landowners of the permanent preservation areas.

- The Company runs two forest nurseries located at the Itutinga and Volta Grande environmental stations, as well as a seed laboratory in Belo Horizonte, where seedlings are produced for urban tree planting. 281,576 native tree seedlings and 6,340 seedlings for urban tree planting have been produced, totaling 287,916 seedlings. 1,994.50 kg of fruit were collected, which after being processed and treated, resulted in 680 kg of seeds that were distributed at the Company's nurseries and given to city halls and partnership projects such as Projeto Manuelzão.

The strategy for reducing GHG emissions is based on 10 principles and the following 3 main initiatives:
1) Power generation using renewable resources
2) Fleet management
3) Expansion of renewable energies and asset maintenance.

Below are some of the corporate initiatives that contribute to GHG reduction.

Scope 1

- Defined as a corporate strategic driver, promoting the use of renewable energy sources is also aimed at promoting greater diversification for the generator complex with new generation sources including wind, solar, and other possibilities cited by the Company's research and innovation.
- Recent R&D projects show results that the Company may use on a large scale in the medium and long term such as i) generating electricity in solar power plants connected to the electric grid, know-how that is being developed and pioneered by Cemig through the Sete Lagoas solar power plant and Mineirão Solar project (already inaugurated), ii) implementation of experimental smart grid in the city of Sete Lagoas.
- Renovation of the Igarapé TPP with an expected increase in average efficiency of 1.407% compared to the average in 2007 to 2008;

- Fuel consumption reduced by 6.17%, representing a savings of approximately R$ 863,000 for the Company.
- Investments in training, equipment, change of methodology and processes with a focus on mitigating SF6 losses by eliminating leaks and maintenance process losses.
- Furthermore, it should be noted that Cemig assesses the risk of increased carbon emissions in its energy matrix by performing environmental due-diligence to acquire and merge new assets or considering it in the calculation of the technical and economic viability of new projects by conducting sensitivity analyzes. This initiative has aided the Company in decision-making and in considering the climate strategy for the expansion of business operations.

Scope 2

- Establishment of corporate goals to reduce Cemig's electric energy consumption as described in the section 'Goals'.
- Investment in works to strengthen the medium and low voltage electricity network totaling R$ 94.9 million and investments of R$ 234.2 million to expand and strengthen the system of sub-transmission lines (69 kV to 230 kV);
- Medium voltage reactive power compensation project: completion of installation of 385 fixed capacitors banks in the electrical system with an investment of R$ 5.7 million and reducing associated technical losses by R$ 5.5 million per year (corresponding to 40.4 GWh/year);
- Purchase and installation of distribution transformers with amorphous core technology that reduce no-load power losses by about 80%, in addition to strengthening the respective low-voltage circuits.

Scope 3

- Energy efficiency projects included in Cemig's Energia Inteligente ("Intelligent Energy") Program are relevant tools for reducing indirect emissions of third parties by reducing electric power consumption of end consumers through the replacement of obsolete electrical equipment that consume high levels of energy and through environmental education initiatives. In 2013, these projects prevented the emission of 752 tCO_2e.
- The projects encouraged and deployed by Efficientia will prevent the emission of 1,264 .18 tCO_2e / year by industrial and commercial customers. Efficientia S.A. is an Energy Conservation Service Company (ESCO) that

works in the development and feasibility of technological solutions that promote the efficient use of energy and the consequent reduction of greenhouse gas emissions at the facilities of medium and large scale commercial, industrial, and service sector companies.

13. Exclusions

The inventory sought to account for all the main sources of Scope 1 and Scope 2 emissions. Solid waste disposal (organic matter) and effluents generated in the operation that are treated and disposed of by third parties were not accounted for in Scope 3.

14. Recalculation

There was no need for recalculation from the previous years reported in past inventories since Cemig had no significant changes in its structure, capacity, and emission sources in 2013. The base year continues to be 2008.

15. Uncertainties and quality of the report

Cemig sought the best methodologies, references, and tools publicly available to calculate GHG emissions, ensure an excellent quality report, and reduce the level of uncertainty in this inventory as much as possible. In relation to the data collected, by choosing a centralized approach, Cemig understands that the risks of duplicating calculations and estimates were reduced, as well as possible errors in formulas and calculations.

Another key item to ensure the quality of the inventory is the fact that the information sources used are examined under the Company's Management System, which is based on ISO 9001, 14001 and OHSAS 18001 standards that ensure processes and procedures geared towards quality, reliability and traceability of the information collected. The standards that ensure critical analyses, processing, and management of information, in addition to regulatory requirements to ensure greater reliability in the results, are described in the Management Systems Manual and in the General Procedures prepared and approved at the corporate level. Finally, all data and sources, collection methods, and procedures have been verified by an independent third party aiming to ensure the integrity of the information.

The level of uncertainty in an inventory is given by calculation errors of emissions, whether in the quantification of source activity or by the emission factor used. The source activity is the data that expresses the intensity of the source. For example, fossil fuel consumption at the Igarapé TPP is a piece of data of the source activity and inaccuracies in this information increase the percentage of uncertainty for the

emission calculation of this source. This imprecision is usually given by the sum of the inaccuracies of the equipment measuring the source activity. In the case of fuel consumption, this uncertainty is given by the uncertainty of the equipment that measures the quantity of liters that were in fact consumed and fuel-burning efficiency. Failures in data collection are much more associated with the quality of the inventory than the uncertainty of the calculation.

Similarly, imprecision in the emission factor for burning fuel also increases the uncertainty of the final calculation. The final uncertainty is primarily determined by the uncertainty of the activity and the uncertainty of the emission factor.

To estimate the uncertainty of Cemig's GHG inventory, the *GHG Protocol "Short Guidance for Calculating Measurement and Estimation Uncertainty for* GHG *Emissions*" was used with a level of uncertainty of +/-3.5%.

It is understood that this calculation of uncertainties follows the recommendations of the "Guidance" mentioned above. However, it should be noted that this calculation contains errors and inaccuracies by the way in which it was performed. In other words, general factors are considered and not the actual inaccuracies, which would be laborious and costly to perform in order to obtain a more accurate value. The information is important, but only as a general indicator that the inventory follows the best practices recommended by the "GHG Protocol", resulting in cohesive information with the quality expected by the methodology adopted.

16. Responsible for preparing this report

Superintendence of Corporate Sustainability
Technical support: Keyassociados

Date: April 2014

STATEMENT

The Bureau Veritas Classification Society and Certification Brazil Ltda., established on Avenida do Café 277, 5th floor, tower B, Vila Guarani, Sao Paulo, SP, entered with the CNPJ (National Register of Legal Entities) under number 33.177.148/0012- 08, states for appropriate action that Cemig - Companhia Energetica de Minas Gerais, established on Avenida Barbacena, 1200 - 17th floor, wing A1, Belo Horizonte, Minas Gerais entered in the CNPJ (National Register of Legal Entities) under number. 17.155. 730/0001-64 in the city of Belo Horizonte, Minas Gerais, is authorized to publish in all their titles and websites the words of the Statement of Conformity according to the wording below: **"The Bureau Veritas Certification, based on the processes and procedures described in its Verification Report, adopting a reasonable level of confidence, states that the Inventory of Greenhouse Gases - year inventoried 2013 of CEMIG – Companhia Energética de Minas Gerais, is accurate, reliable and free from error or distortion and is a fair representation of the GHG data and information on the reference period for the defined scope; been prepared in conformity with the NBR ISO 14064-1:2007 and Specifications of the GHG Protocol Brazilian Program. "**

São Paulo, May 8th, 2014.

Bureau Veritas do Brasil Sociedade Classificadora e Certificadora Ltda.