

# CDP6 Greenhouse Gas Emissions Questionnaire

Responding corporation: Cia. Energetica de Minas Gerais - Cemig



Companhia Energética de Minas Gerais – Cemig is a Brazilian company, within its integral subsidiaries – Cemig Distribuição S.A. and Cemig Geração e Transmissão S.A., distributes, generates, transmits, and commercializes in several Brazilian states. It has participation in energy distribution concessionaires (Light), electric energy transmission companies, investments on natural gas distribution (Gasmig), data transmission and it is building a new transmission line in Chile. It is constituted of 40 companies and 7 concessionaires that serve about 6.4 million clients and 774 cities. In 2007, Cemig was selected as the world leader in sustainability in the “utilities” sector of Dow Jones Sustainability World Indexes (DJSI World), being the 8<sup>th</sup> consecutive year in this Index and the 1<sup>st</sup> time it is selected as the world leader in this sector. In 2005, Cemig was elected by DJSI World as the leader in the electric sector. Cemig was also selected, for the 3<sup>rd</sup> consecutive year to compose the companies listed in the Sustainability Index of São Paulo Stock Exchange (ISE/Bovespa).

Cemig Distribuição S.A. is the biggest electric energy distribution concessionaire of Brazil in consumer quantity. Its concession area is 567,478 km<sup>2</sup>, covering 96.7% of Minas Gerais State.

Cemig Geração and Transmissão S.A. is the 6<sup>th</sup> biggest transmission and energy generation (6,566 MW) company in Brazil. Its capacity is basically from hydroelectric plants (97.16%) of installed capacity, with notability to the big plants such as: São Simão (1,710 MW), Emborcação (1,192 MW) Nova Ponte (510 MW), Jaquara (424 MW), Três Marias (396 MW) e Miranda (408 MW). It also has important participations in concessions of hydroelectric reutilization Aimorés (49.00%), Funil (49.00%), Igarapava (14.50%), Porto Estrela (33.33%), Queimado (82.50%) e Baguari (34.00%) that is in constructing stage.

## 1 Risks and Opportunities

**Objective:** To identify strategic risks and opportunities and their implications.

**a Risks:** (CDP5 Question 1a)

**i Regulatory Risks:** How is your company exposed to regulatory risks related to climate change?

Companhia Energética de Minas Gerais – Cemig, has an Environmental Policy, published in 1990, that has a basic principle: environmental quality engagement. Through its programs, Cemig seeks to internalize this awareness to its employees and partners. Then worried about climate change as well, Cemig seeks lower GHG's emission in its activities.

Kyoto's Protocol, ratified by Brazil in April 2002, defines Brazil as a non-Annex I country, that means that Brazil has no GHG's emissions reduction goals.

Cemig follows the National Policy and Climate Change Planning, conducted by Coordination in Global Change Research of Science and Technology Ministry. Even not having obligatory reduction goals, Cemig accounts its annual emissions and informs metrics and actions to contribute with GHG's emission reductions.

With these actions Cemig seeks to minimize the effect of new national or international legislations aiming to limit the GHG emission in developing countries or by sector scopes goals that could represent to the company.

**ii Physical Risks:** How is your company exposed to physical risks from climate change?

Cemig acts in the energy sector in the areas of generation, transmission, distribution of electric energy. The company's generated energy comes basically from renewable sources, as showed in the table attached.

Source	Installed Capacity		Generation - 2007	
	MW	%	MWh	%
Hydraulic	6,382	97.2	34,740,804	98.2
Thermal	131	2	189,532	0.5
Aeolion	1	0	141	0
Co-generation	51	0.8	443,943	1.3
Total	6,566	100	35,374,421	100

These climate change forecasts indicated in this report realized by Intergovernmental Panel about Climate Change (IPCC), organ tied to ONU, may affect activities of Cemig, considering that most of its energy is generated by hydroelectric plants.

The company has followed constant climate change, which is related to the electric energy generation planning, and also to storms and other climate events that could cause damages to the transmission and distribution networks of the company.

**iii General Risks:** How is your company exposed to general risks as a result of climate change?

Climate change, according to reports from the IPCC, may cause alterations in the location and frequency of rain. There are indications that certain areas of the planet may experience very low levels of precipitation and others that may experience persistently elevated levels.

Low average precipitations may, in a certain manner, reduce the amount of water available and, as a consequence, the production of energy. However, the Brazilian Electric Sector model is electrically interconnected in such a manner that if the storage at one hydroelectric plant is low, another may generate in order to compensate for the lack of water in the other basin, without leaving any consumers without energy. In order to deal with the commercial aspects of this joint behavior of the set of plants, in which one helps the other to generate the guaranteed energy, there are various fixed rules.

In the event of an excess of rain, the operation of the reservoirs would be conducted following the same criteria that is employed today. However, the structure of the outflow structures must be evaluated regarding their capacity to absorb the fullness of the project and any eventual alterations. Studies have recently been conducted to evaluate the outflow capacity of all Cemig's facilities.

Finally, it is worth noting that the company maintains in operation an extensive network of hydro-meteorological monitoring stations that collect and analyze this data and as of this moment, no evidence has been identified of hydrologic alterations that could be correlated with climate change.

In electric energy transmission and distribution the associated risks relates directly to the increase of the damages in lines and equipments and the possible subsequent accidents. There are evidences that the risk degree presented by urban trees tends to increase because of the climatic alterations in course. Several actions described in the following questions are executed in order to monitor, to repair and to reduce any possible damage or happened to the maximum.

**iv Risk Management:** Has your company taken or planned action to manage the general and regulatory risks and/or adapt to the physical risks you have identified?

Cemig traced strategies and took providences in relation to electric generation, transmission, distribution to minimize costs of climate change.

The fall of trees over distribution lines is an important risk to the company related to climate activities. To this point, Cemig seeks to promote a harmonious relation between distribution networks and urban arbor. To make this, the company realizes directional prunes, considered the most adequate technique to be used close to distribution networks areas, and minister courses of arboriculture and prunes trees for several City Halls in Minas Gerais State. Cemig has seek to adopt technological alternatives of distribution networks (secure and isolated networks) to improve the conviviality between urban trees and aerial distribution networks, avoiding that the fall of trees interrupt the energy supply. In this way, the company adopted, since march of 1999, the Protected Distribution Network – RDP as its new minimum urban attendance standard substituting the nude conventional networks, and becoming the first Brazilian Concessionaire to adopt the RDP with the minimum urban attendance standard. Nowadays Cemig has 4,889 Km of isolated and protected on primary, representing 15.2% of primary urban networks total. In relation to secondary urban networks, 22,871 km are isolated networks, representing 42.5% of secondary urban networks total.

In energy generation there were improvement on Cemig's barrage security methodology, with the Barrage Security Plan consolidation, directions establishments for the Emergency Action Plan elaboration and the upgrade of the Intelligent System of Barrage Control and Security – INSPETOR. It was executed, in 2007, 100 barrage maintenance, infrastructure adequacy of generation, and environmental adequacy works, with emphasis on revaluation works, and structural and functional security conditions reestablishment of barrages and civil associated structures.

In 2007, Cemig intensified actions and amplified the Communication Plan with communities of influence areas of its reservoirs, informing about power plants and operational procedures during rainy and droughty periods. The program acts within communities situated in these areas, guiding the authorities, communities' leaders, press vehicles, environmental organizations, civil society representatives about reservoirs management and environmental actions implants in each region.

Besides this, Cemig realizes several actions which attributions are directly related to climate events and its reflections in system operations:

- Monitors hydrometeorology and sedimentary greatneses, in about 150 stations located in rivers and reservoirs;
- IT has a specific flood control. Makes meteorological forecast daily, and also with storms alarms;
- Monitors burning focuses to protect its transmission lines;
- Shows to the society, operational data of the main reservoirs of the company, originated by its Hydrometeorology Telemetric System that is composed by 95 telemetric stations, that transmits online data capable of assisting several sectors of the company and of the society on hydro climatology monitoring;
- It has Storm Localizing System – SLT, in real time, installed since 1988, with the goal of to detect, to process, to distribute, to store information of atmospheric discharges, assisting the company's meteorological alarms;
- Develops a revision activity that is called “cheia de projeto do vertedor” (full of dikes project), with the goal of evaluating the operational conditions of the dikes of hydroelectric plants and if it is necessary to adequate the barrage operationally or physically;
- It accompanies the behavior of the room temperature, anticipating tendencies so much of physical growth as well as of anomalies in the temperature, propitiating a more secure planning of generation and shipment of transmission lines and minimizing the risk of conjectural and structural interruptions of the electric system.

Regarding regulatory risks, the company has teams active in the regulation forums related to water issues (Water Resource Councils, Basin Committees and Agencies) and energy issues (regulatory Agencies and the National Congress). Regarding physical risks, it should be noted that, as mentioned previously, there is a permanent outflow capacity evaluation process for the reservoirs and monitoring of hydrological information that allows for the identification of any eventual alterations in energy production capacity.

**v Financial and Business Implications:** How do you assess the current and/or future financial effects of the risks you have identified and how those risks might affect your business?

Cemig has the majority of its electric energy generation by hydroelectric power plants. In 2007 98.2% of its generated energy was by this source. As seen above, long drought periods caused by climate changes will take to alterations of the conventional hydroelectric energy generation and increase the energy generation by thermal power plants to supply SIN (Interconnected National System). Focusing in this problem, Cemig has been seeking, over the years, to improve its climate activity, monitoring and investing in maintenance works of its energy generation area. The fall of trees and the consequent energy supplying interruption represent a constant financial risk. That's why Cemig has all these actions listed on risk management (1iv for risk management).

There is also the possibility of a electric energy consumption standards change by the global warming influence such as, for example, increase in quantity of refrigeration systems.

**b Opportunities:** (CDP5 Question 1b)

**i Regulatory Opportunities:** How do current or anticipated regulatory requirements on climate change offer opportunities for your company?

The Kyoto's Protocol has defined three flexibility mechanisms aiming to decrease global costs for reaching the GHG's (greenhouse gases) emission goals of Annex 1 countries. These mechanisms allow companies and countries to have access to opportunities to eliminate carbon emission in other countries. While the cost do decrease emission varies considerably from region to region, the benefits to the atmosphere are the same, wherever the action is being realized.

The Clean Development Mechanism (CDM) is the only one that non-Annex 1 countries, as Brazil, can participate. The article 12 of Kyoto's Protocol, defines, that the CDM purpose must be to supply assistance non-Annex 1 countries of the Convention, for them to reach the sustainable development and contribute with the final goal of the Convention, besides to supply assistance to Annex 1 included countries for them to accomplish their quantified commitments of limiting and reducing their GHG's emission.

With this regulation, inside Kyoto's Protocol, Cemig has the opportunity to promote projects of GHG's emission reduction and that promote the sustainable development in Brazil, through financial investment earned by the sales of Certified Emission Reductions – CER's. A CDM project was applied in Barreiro thermal power plant, that operates in a co-generation process, with electric energy and steam, using the gases from the industrial process of a steelmaking plant. This project was approved within the Executive Committee of UNFCCC - The United Nations Framework Convention on Climate Change. Although, Cemig has 100% of the assets, it ceded the carbon credits of this project to Vallourec & Mannesman Steelmaking Company, which is the fuel supplier used in the plant (processes gases).

Cemig defined a work group that has as goal identify opportunities of project developments on CDM in the carbon market and, also to introduce in its management system an analysis tool aiming carbon projects for each new business.

This work group realized a Diagnosis to raise what implanted projects on development or in study stage that could participate on CDM and at the same time, represent carbon credits potency for Cemig.

Each project has passed by stages of information collecting, feasibility study, technical and financial characteristics descriptions seek to quantify the carbon credits potency.

The access to information and analysis was acquired in the following areas or businesses of Cemig:

- Generation
- Transmission;
- Distribution
- Management
- Empresa Efficientia (ESCO)
- New businesses;
- Technology and renewable energies

With the Diagnosis it was possible to rise which implanted projects, in development stage and in studying stage that could participate on CDM and, at the same time, represent carbon credits generating capacity, assisting in the decision making process for choosing, among the possibilities, what would be the best ways to start a development of a CDM project.

Each project has passed by feasibility studies, additional information collecting and technical and financial characteristics descriptions aiming to define the eligibility of the projects according to CDM's assumptions. Besides that, a quantifying of carbon credits – CER's (Carbon Emission Reduction) generation capacity was done.

**ii Physical Opportunities:** How do current or anticipated physical changes resulting from climate change present opportunities for your company?

Based on the IPCC report, in certain periods of the year because of the water precipitation increase there will be a higher water volume on the reservoir, contributing to the electric energy generation by hydroelectric plants.

As the electric energy generation by hydroelectric power plants represented 97.2% of Cemig's generation, the increase of precipitation reduce the risks of supplying the energy to the Interconnected National System – SIN increasing the supply of energy to the market.

**iii General Opportunities:** How does climate change present general opportunities for your company?

Cemig, seeking climate change opportunities brings to the energetic sector, developed programs that include energy efficiency and conservation metrics in several productive sectors of the society; stimulus to Small Hydroelectric Centrals and high efficiency co-generation (combination of electricity and stream), incentives to the production of projects technology and developments of alternative sources of energy, such as solar, eolian, hydroelectric, biomass, fuel cells, bio diesel, among others; promotion of sustainable energy consumption programs, including more efficient processes on the energetic point of view in partnership to its clients residential, commercial, industrial and agro industrial.

Among the opportunities found by Cemig, with detach to Efficientia S.A., services company belonged to Cemig. Efficientia S.A. acts in the energetic solutions area, realizing energy efficiency projects in industries, public organizations and companies. Among finished works in 2007, detaches the implementation of two co-generation plants in steel mills and energetic efficiency projects in the areas of industrial lighting and refrigeration.

Gasmig, company belonged to Cemig and Gaspetro, has an objective of increasing the use of natural gas. Through the natural gas supplying to industries and motor vehicles, Gasmig provides the substitution of more pollutant fuels to natural gas, increasing the energetic efficiency of the processes and providing operational improvement.

Besides that, Cemig realized an CDM diagnosis, as cited above, in which were risen the eligible projects to Kyoto's market in all analysis areas of the company: generation, transmission and distribution, by the realized projects by Empresa Efficientia (ESCO), in new businesses and Renewable Technologies and Energies. These projects represent big opportunities on carbon credits ('CERs'), and they can turn more renewable energy and infrastructure investments feasible.

**iv Maximizing Opportunities:** Do you invest in, or have plans to invest in products and services that are designed to minimize or adapt to the effects of climate change?

Cemig's adopted metrics to contribute with GHGs emission reduction, comprehend energetic efficiency and conservation program, participation in gas utilization projects, solar energy and small hydroelectric centrals and the alternative energy research.

Cemig participates on forums and work groups, in which the forum of Climate Change of Minas Gerais State and the Technical Chamber on Energy and Climate Change – CTClima of the Brazilian Business Council for Sustainable Development – CEBDS. The company's professionals receive training in this way, detaching the participation on management courses by United States Agency for International Development – USAID and by World Bank.

In 2007, through the work group designated by Cemig, was realized an diagnosis, aiming to rise which implanted projects, in development and in studying stage that could participate on CDM and at the same time, represent carbon credit potential to Cemig and your colligated companies.

A methodology was developed that permits the previous evaluation of technical and economic feasibility of a new enterprise of Cemig considering the eligibility and the emission quantification avoided according to approved methodologies by the Intergovernmental Panel on Climate Change – IPCC of potential CDM projects. It intends to enable that the several areas of the organization, just as its subsidiaries and colligated could, at the conception moment of the new project, adopt a methodology that takes CDM in consideration in its feasibility analysis and decision making.

Some projects identified as possible CDM projects were: fuel substitution (conversion of the natural gas combustion cauldron), reforestation of reed and planted forests, substitution of SF<sub>6</sub> keys, energetic efficiency projects as water heating with solar energy in inhabitable areas for low income people and capacity increase of small hydroelectric centrals, eolian and cogeneration.

**v Financial and Business Implications:** How do you assess the current and/or future financial effects of the opportunities you have identified and how those opportunities might affect your business?

According to article 12 of Kyoto's Protocol, the objective of CDM is "to assist the non-Annex 1 parts for them to reach the sustainable development and contribute to the final objective of the Convention, and assist the Annex 1 countries to accomplish their quantified obligations of emissions limit and reduction, assumed in article 3".

Therefore CDM brings feasibility to GHG's emission reduction projects in developing countries, through the certified emission reductions commercialization.

With the identification diagnosis of possible CDM projects, it was possible to identify future opportunities to Cemig, that affect positively its commercial activities. So the CDM incentive contributes to the concretion of these projects for the regional sustainable development.

Besides that, through its companies, Efficientia and Gasmig, Cemig has been acting on seeking solutions, and energetic efficiency on natural gas supplying. With these companies Cemig has explored the market that is getting more addicted to GHG's emission reduction and in consequence minimizing the climate change.

In 2007, the Efficientia developed the implementation of co-generation plants in metallurgy industries and elaborated energetic efficiency in industrial lighting and refrigeration, with this the economy reached totalized 43,259 MWh/year, what corresponds to the annual consumption of a 30 thousand inhabitants town. Gasmig in 2007, through the more pollutants fuels substitution to natural gas, sold a volume of 642,555 thousands m<sup>3</sup> natural gas, being 73.3% for industrial use, 13.5% for automotive use and 12% for thermal generation.

## 2 Greenhouse Gas (GHG) Emissions Accounting

**Objective:** To determine actual absolute Greenhouse Gas emissions.

The term GHG Protocol below refers to The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). This may be found on the GHG Protocol Website [www.ghgprotocol.org](http://www.ghgprotocol.org)

### a Accounting Parameters (CDP5 Question 2a)

**i Reporting Boundary:** Please indicate the category that best describes the company, entities or group for which your response is prepared:

a. Companies over which financial control is exercised – per consolidated audited Financial Statements.

b. Companies over which operational control is exercised.

c. Companies in which an equity share is held.

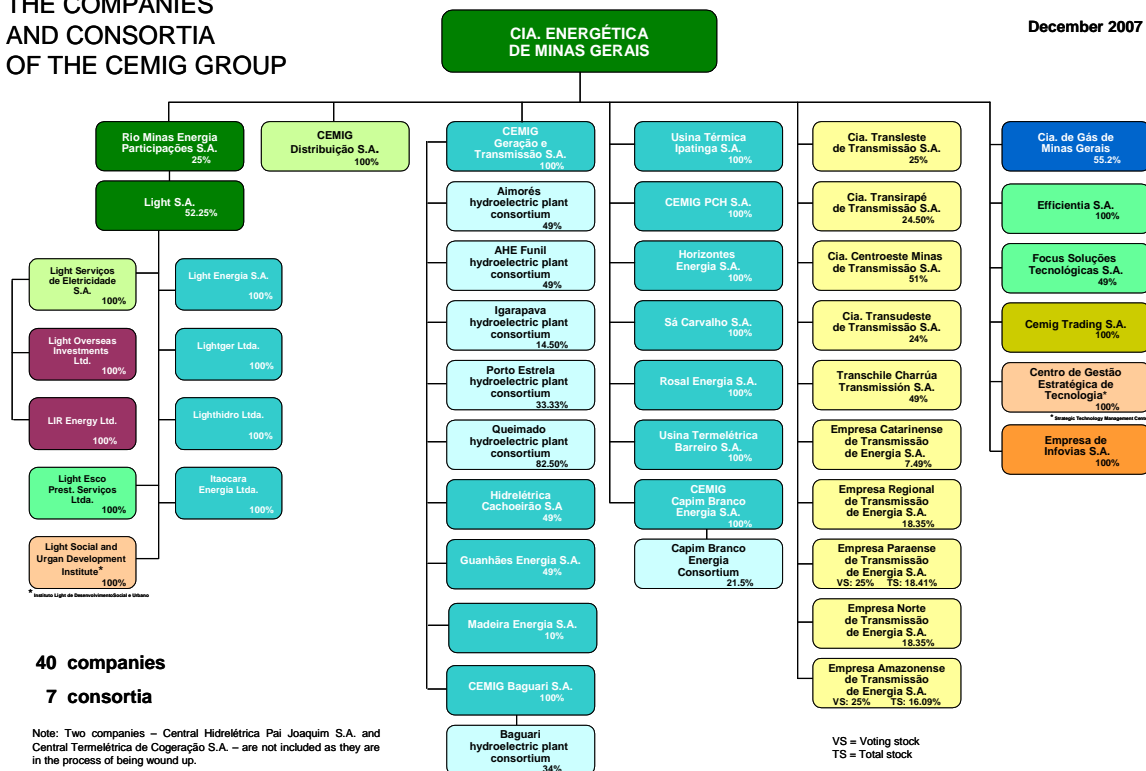
d. Other (please provide details).

Please use the same approach for all answers.

The Companhia Energética de Minas Gerais – Cemig is a holding company and, through its subsidiaries – Cemig Distribuição S.A. and Cemig Geração e Transmissão S.A., distributes, generates, transmits and commercializes electric energy in several Brazilian states. It has participations in energy distribution concessionaire (Light) and in companies of electric energy transmission, investments in natural gas distribution (Gasmig), data transmission and it is constructing a new transmission line in Chile (organization chart below).

### THE COMPANIES AND CONSORTIA OF THE CEMIG GROUP

December 2007





The inventory limits reported in this document refers to the controller company and the integral subsidiaries: Cemig - Companhia Energética de Minas Gerais S.A., Cemig Distribuição S.A. e Cemig Geração e Transmissão S.A., except when it is mentioned in the text.

All the companies controlled directly by the Companhia Energética de Minas Gerais – Cemig are the ones it has 100% of stock participation and are those mentioned in the attached organization chart, where it is indicated the percentages. All the infra-structure resources data of these companies are exposed by the inventory of the determination of the greenhouse gases (GHGs) emissions of the whole Cemig Corporation.

The organization chart attached demonstrates all the stock participations. All the companies without total stock control of Companhia Energética de Minas Gerais – Cemig are out of the emission inventory by having its own operational control of its activities, reporting financially to Companhia Energética de Minas Gerais – Cemig.

**ii Reporting Year:** Please explicitly state the dates of the accounting year or period for which GHG emissions are reported.

The accountable period of this emission account is from year 2007, 1st of January to 2007, 31st of December. The period defined as base year of analysis and future calculus was the year 2004.

**iii Methodology:** Please specify the methodology used by your company to calculate GHG emissions.

Among several available protocols and norms for the realization of this nature inventories, it was used the GHG Corporate Protocol of the World Business Council for Sustainable Development and World Resources Intitute [GHGp].

**b Direct and Indirect Emissions – Scope 1 and 2 of the GHG Protocol (CDP5 Question 2b)**

*i Are you able to provide a breakdown of your direct and indirect emissions under Scopes 1 and 2 of the GHG Protocol and to analyze your electricity consumption? If so, please provide the following information together with a breakdown of the emissions reported under each category by country where possible. If not, please proceed to question 2b ii:*

**Scope 1 Direct GHG Emissions**

*a. Total global Scope 1 activity in metric tonnes CO<sub>2</sub>-e emitted.*

203,236 CO<sub>2</sub>e metric tonnes

*b. Total Scope 1 activity in metric tonnes CO<sub>2</sub>-e emitted for Annex B countries.*

203,236 CO<sub>2</sub>e metric tonnes

**Scope 2 Indirect GHG Emissions**

*c. Total global Scope 2 activity in metric tonnes CO<sub>2</sub>-e emitted.*

6,734 CO<sub>2</sub>e metric tonnes

*d. Total Scope 2 activity in metric tonnes CO<sub>2</sub>-e emitted for Annex B countries.*

6,734 CO<sub>2</sub>e metric tonnes

*e. Total global MWh of purchased electricity.*

47,860 MWh

*f. Total MWh of purchased electricity for Annex B countries.*

47,860 MWh

*g. Total global MWh of purchased electricity from renewable sources.*

42,452 MWh

*h. Total MWh of purchased electricity from renewable sources for Annex B countries.*

42,452 MWh

### **Additional information**

As Brazil is a country included in annex B, Scope 1 emission is directly related to the use of fossil fuel in Brazil. Since Cemig is established in Brazil, the direct emissions for Annex B countries of GHG's are the same. This is the same case for the Scope 2 emission and purchased renewable energy portion.

The electric energy consumption by Cemig results exclusively from energy utilized in installed industries and offices provided from national network. This consumption represented 6,733.86 tons of indirect emissions of CO<sub>2</sub>e in 2007.

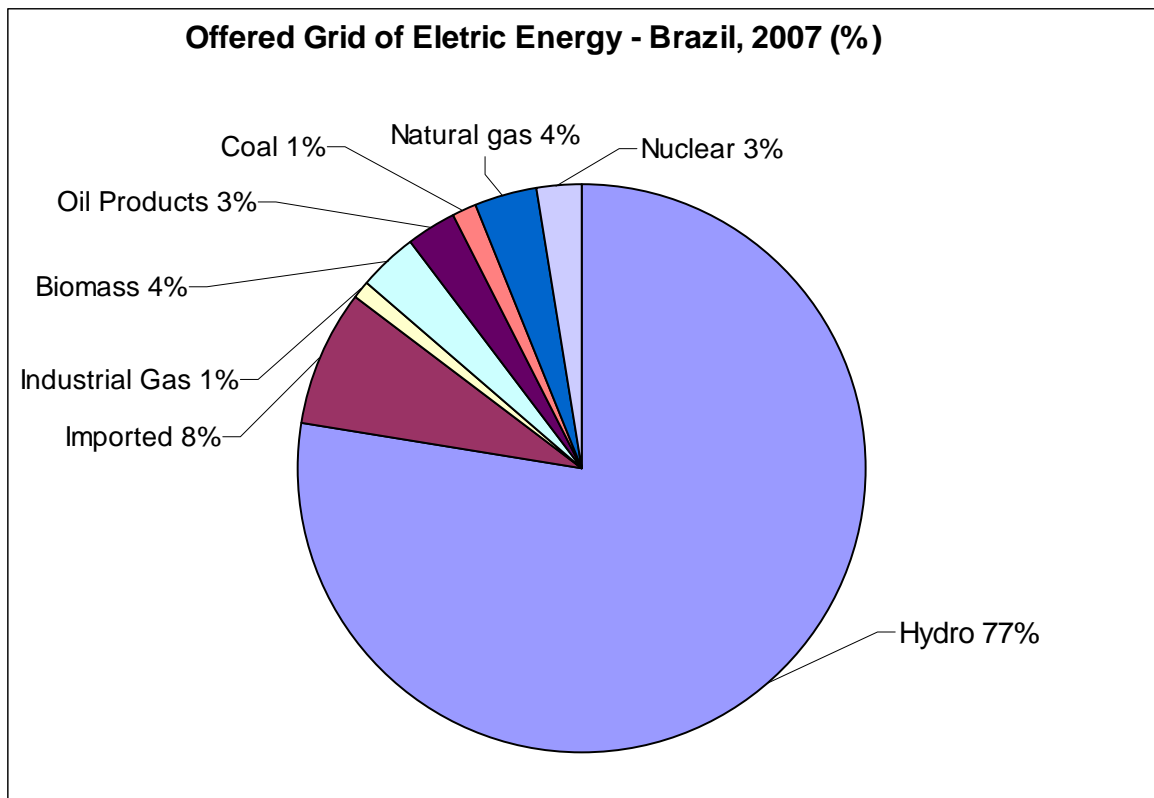
At the moment, Efficientia, the services company of the group Cemig that acts in the area of energetic solutions, is developing a macro-diagnosis in the consumption units of Cemig that represents 70% of the whole consumption of electric energy to identify the reduction in energy consumption and define goals of consumption.

The emission of GHG's in this activity is given by factors of emission developed by the coefficient of use of the fossil fuels in the electric energy production of the interconnected national system "grid" (SIN), mostly by thermal plants activities.

The data is found for the emission factor to electric energy acquired of SIN in region Southeast in 2007 represented 0.1407 t CO<sub>2</sub>e/MWh, according to data from Electric System National Operator (ONS) by the methodology developed with Ministry of Science and Technology (MCT). The methodology used is the "tool to calculate emission factor for an electricity system" used in approved methodologies by the "Executive Board" of UNFCCC/UNO (United Nations Framework Convention on Climate Change/ United Nations Organization). The total in MWh consumed by the installed industries and offices of Cemig represented 47,859.72 MWh in 2007. The period between 2004 and 2007 it was evaluated. A reduction of electric energy consumption of 12.5% was noted, mainly by intern awareness program and energy efficiency projects.

In Brazil, the biggest part of electric energy matrix in the interconnected national grid comes from renewable source generated by hydroelectric plants as showed in the graph attached below.

Considering that the Brazilian renewable energy comes from hydroelectric plants, biomass, imported energy (hydroelectric plants, mostly from Itaipu), can be determined that 88.7% of the whole electric energy in the interconnected national system in 2007 came from renewable energy. Therefore 88.7% of the energy consumed by Cemig in 2007 represents the origin of renewable sources of energy was provided by renewable sources of energy that represented 42,451.57 MWh.



Source: MME (Ministério de Minas e Energia).

Note: (a) includes autoproducers – 45.2 TWh; (b) biomass includes 559 GWh de eolian in 2007.

*ii If you are unable to detail your Scope 1 and Scope 2 GHG emissions and/or electricity consumption, please report the GHG emissions you are able to identify together with a description of those emissions.*

N.A.

**c Other Emissions – Scope 3 of GHG Protocol: (CDP5 Question 2c)**

How do you identify and/or measure Scope 3 emissions? Please provide where possible:

*a. Details of the most significant Scope 3 sources for your company.*

Cemig does not account emissions in scope 3

*b. Details in metric tonnes CO<sub>2</sub>-e of GHG emissions in the following categories:*

*i Employee business travel.*

N.A.

*ii External distribution/logistics.*

N.A.

*iii Use/disposal of company's products and services.*

N.A.

*iv Company supply chain*

N.A.

*c. Details of the methodology you use to quantify or estimate Scope 3 emissions.*

N.A.

**d External Verification** (CDP5 Question 2a iii)

*i Has the information reported in response to Questions 2b – c been externally verified or audited or do you plan to have the information verified or audited? If so:*

Cemig do not audit these informations specifically. All the data are gathered and validated internally for the Inventory Greenhouse Emissions composition and disclosure in its Annual Reports.

*ii Please provide a copy of the audit or verification statement or state your plans for verification.*

N.A.

*iii Please specify the Standard or Protocol against which the information has been or will be audited or verified.*

N.A.

**e Data Accuracy** (New to CDP6)

Does your company have a system in place to assess the accuracy of GHG emissions inventory calculation methods, data processes and other systems relating to GHG measurement? If so, please provide details. If not, please explain how data accuracy is managed.

The choice of the appropriate calculus method resulted from the availability of the activity data, of the specific emission factors, the combustion technologies process used, and other particular characteristics of the determined sources after the diagnosis of all the direct activities that proper significant GHG's emissions in Cemig. In this case, all the factors are available because there are historic calculus and emission factors studies. It was adopted in the respected order, specific national factor e known by the applicability principle, as in the case of electric energy consumption of the interconnected national system, following the emission factors of world high credibility organizations as GHG PROTOCOL.

The fossil fuels consume information are based on the intern transportation control area by the Total Fleet Control – TFC consolidation, that permits the supplying management process of all vehicles of the company. The thermal plant consumption of the company are collected by an equipment managed by a constant monitoring plan during its activity.

**f Emissions History** (CDP5 Question 2a iv)

Do the emissions reported for your last accounting year vary significantly compared to previous years? If so, please explain the reasons for the variations.

The GHG's inventory of Cemig is annually done for a comparative carbon dioxide emission analysis since 2004.

The Interconnected National System – SIN, gathering production, transmission, distribution in all Brazilian regions, demanded a higher electric energy production potential than the possible capacity of the hydroelectric plants. This demand is supplied by the increase in production of other power plants, mostly, thermal electric plants. In this context, 2007's Cemig emissions were higher than 2006, because the Igarapé thermal electric power plant. In 2007, Igarapé thermal

electric plant operated for 3,481 hours, 1,821 more than 2006 (that justify the higher emission this year). Igarapé thermal electric was responsible for 89% of total CO<sub>2</sub> emissions in 2007.

Historic of the last 4 years of CEMIG's emission

Year		2004	2005	2006	2007
GHG Emissions (t CO <sub>2</sub> )		40,676	35,145	119,846	203,236

During the last years a significant reduction of fossil fuel consumption of vehicles is occurring. The consumption of these activities has decreased from 2004 to 2007 in 44.8%, becoming only 19% in 2007. These gains have been getting better mostly because of the Fleet Total Control's consolidation that allowed the vehicle's supplying process of the company.

**g Emissions Trading (CDP5 Question 4b)**

*i Does your company have facilities covered by the EU Emissions Trading Scheme? If so:*

These questioning are not applicable because Cemig's activities are basically located in Brazil, which is a member of Non-Annex 1 countries ratified by Kyoto's Protocol, that's why it doesn't have GHG's reduction goals.

*a. Please provide details of the annual allowances awarded to your company in Phase I for each of the years from 1 January 2005 to 31 December 2007 and details of allowances allocated for Phase II commencing on 1 January 2008.*

N.A.

*b. Please provide details of actual annual emissions from facilities covered by the EU ETS with effect from 1 January 2005.*

N.A.

*c. What has been the impact on your company's profitability of the EU ETS?*

N.A.

*ii What is your company's strategy for trading or participating in regional and/or international trading schemes (eg: EU ETS, RGGI, CCX) and Kyoto mechanisms such as CDM and JI projects?*

Cemig has a work group that identify developing opportunities of Clean Development Mechanism (CDM) projects aiming possible carbon market credits.

In 2007, Cemig implemented in its management system an analysis tool aiming evaluating carbon projects for every new business considering this criterion in decision actions of the company. According cited in item "1b-iv" this questionnaire, a diagnosis was realized that raised all possible projects to generate carbon credits to Cemig and colligated companies. It was found opportunities of CDM's projects in the following areas: fuel substitution (conversion of the natural gas combustion cauldron); reed and cultivated forests reforestation aiming credits for carbon offset; replacing SF<sub>6</sub> keys by a compatible equipment; energetic efficiency projects as water heating by solar energy in inhabitable housing of low income people, capacity increase of thermal plants by reutilization of industrial processes gases.

Barreiro Thermal plant has an project considered CDM by Kyoto's Protocol already registered at the Executive Committee of UNFCCC – The United Nations Framework Convention on Climate Change, aiming to get the Certificate Emission Reductions – CERs, registered at UNFCCC as “Project 0143- UTE Barreiro S.A. Renewable Electricity Generation Project” (for more information please look at: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1134505349.88/view.html>). Even though Cemig has 100% of the assets, it granted carbon credits received by this project by Vallourec&Mannesman that is fuel supplier used in the plant (process's gases).

**h Energy Costs** (CDP5 Question 4d)

*i Please identify the total costs in US \$ of your energy consumption eg from fossil fuels and electric power.*

N.A.

*ii What percentage of your total operating costs does this represent?*

N.A.

*iii What percentage of energy costs are incurred on energy from renewable sources?*

N.A.

### 3 Performance

**Objective:** To determine performance against targets and plans to reduce GHG emissions.

**a Reduction Plans** (CDP5 Questions 1d and 4a)

*i Does your company have a GHG emissions reduction plan in place? If so, please provide details along with the information requested below. If there is currently no plan in place, please explain why.*

According to Kyoto's Protocol, Brazil is a non-Annex 1 component, therefore does not have GHG reduction goals obligations and no emission reduction plan determined by the company. However Cemig, adopted metrics and strategies to decrease GHG emissions, as for example, vehicles fleet substitution and efficiency metrics and energetic conservation (internal and in partnership with several productive sectors of the society).

In the moment, Efficientia, Cemig's services company that acts on energy solutions, that is developing a macro-diagnosis in Cemig's consumption units representative of 70% of total electric energy consumption with the objective of identifying the potential energy economy and define consumption goals.

When evaluating the period from 2004 to 2007, an electric energy consumption reduction of 12.5% occurred, resulting, mainly, of an awareness of the workers, the energetic efficiency projects and the implementation of quality and environmental management systems.

The fuel consume has presented a constant reduction during the years. In the period of 2004/2007 the reduction was of 44.8%, being 19%, only in 2007. These gains were reached, mostly, in function of the Fleet Total Control – FTC consolidation that allowed the supplying process of vehicles management of the company.

Cemig's generation site is predominantly based on hydroelectric power plants, corresponding to about 97.2%. Therefore, the GHG emissions of Cemig results in a thermal plant of oil fuel, from the vehicles fleet and the airplanes of the company, and of SF<sub>6</sub> emissions provided from installed equipments in electric distribution networks and energy substations.

Therefore Cemig's main goal, in this context, is to participate on initiatives that enable the rational and efficient electric energy use. The metrics adopted by Cemig, to contribute with GHG emission reduction, comprehend energetic efficiency and conservation programs, participation in gas utilization, solar energy, small hydroelectric centrals projects and alternative and renewable energy researches.

*ii What is the baseline year for the emissions reduction plan?*

N.A.

*iii What are the emissions reduction targets and over what period do those targets extend?*

N.A.

*iv What activities are you undertaking to reduce your emissions eg: renewable energy, energy efficiency, process modifications, offsets, sequestration etc? What targets have you set for each and over what timescales do they extend?*

According to previously cited, Cemig presents its energy generating potential mainly in hydroelectric plants, represented by 98.2% of its productivity in 2007.

Cemig destines resources to efficiency and conservation energetic programs, of creation of small hydroelectric centrals and alternative energy programs. All the new investments on

renewable energy carry directly to emission reduction. This occurs by insertion in the SIN of a new renewable source that will result on an activity reduction of the thermal plants.

Among these new investments it is important to point the main development programs for electric energy generation by renewable sources that Cemig participates:

- The Baguari hydroelectric power plant that is in construction process of the consortium of Neoenergia (52%), Cemig (34%), FURNAS (15%), and has the operations start forethought to 2009.
- Additionally, must be detached Cemig's participation in the Auction referring to Santo Antônio hydroelectric power plant (Madeira River Complex) in December 2007, in condition of member of the winner concession of the duel. The Santo Antonio hydroelectric power plant, with installed capacity of 3,150 MW, located on the Madeira River watershed, will be built in partnership with several companies, being the participation of Cemig Geração e Transmissão S.A. of 10% with start of operations foreseen to year 2012.

#### *Energetic Efficiency and Conservation*

In 2007 the Energetic Efficiency Program – PEE Cemig/Aneel proposed an energy consumption reduction of 47,054 MWh/year and the reduction in a peak demand of 8.3 MW. Through this program a reduction of 4,907 ton CO<sub>2</sub>e of GHG emission indirectly, once the programs and third industrial installations were realized.

In Cemig/Aneel energetic efficiency program of public lightning, were improved, in 2007, 43,000 points in 140 cities of Minas Gerais State, resulting in an annual reduction of 270 kW of demand and 1,150 MWh on energy consumption.

In the project of Improvement of Public Illumination - Reluz, which was financially supported by Eletrobrás in 2007. The modernization of 15 thousand illumination points were realized in the municipality of Betim which lead to an annual reduction of 270 kW of demand and 1,150 MWh of energy consumption.

The Conviver Project, initiated in 2006 to guide low income clients about energetic efficiency, is turned to popular communities in the metropolitan region of Belo Horizonte and on the countryside of Minas Gerais and counts with community relation agents work.

In 2007, it was donated 1,500 efficient refrigerators, 156,000 compact fluorescent lamps, and 3,000 heat recovering kits for electric showers. These actions provide an economy of 11,225 MWh on consumption and 5,697 kW demand of energy.

The Sustainable Efficient Integration Program – IES has as objective to promote the rational use of energy on productive chains in the agro business sector. The IES has promoted the creation of supporting cores to the rural communities, promoting the technical capacity of producers and culture diffusion of energetic efficiency, integration and sustainability of enterprises.

In 2007, many electric system optimization actions were realized through the energetic efficiency solution in several hospital unities of Minas Gerais State, with a reduction on peak demand of 805 kW that took to an energy economy of 4,404 MWh/year.

Efficientia S.A., services company belonged to Cemig, acting in energetic solutions area, realizes energetic efficiency projects in industries, public organization and companies. Efficientia was certificated, in 2006, according to NBR ISO 9001:2004, being the first Brazilian company of Esco – Energy Service Company to be certified. Among the developed works in 2007, detaches the implementation of two co-generation plants in metallurgy industries and of energetic efficiency works in lighting and industrial refrigeration. The energy economy reached by these projects totaled 43,259 MWh/year, what corresponds to the annual consumption of a city with about 30 thousand houses and represents an annual emission reduction of 4,511 equivalent tons of CO<sub>2</sub>.

#### *Gas*

As stated above, Gasmig is a company that belonged to Cemig and Gaspetro, and has the objective of increasing the benefits of natural gases benefits. Through natural gas supplying to industries and motor vehicles, Gasmig provides the substitution of more pollutant fuels to



natural gas. In year 2007, the gas volume sold by Cemig was 642,555 thousand m<sup>3</sup>, being 73.3% for industrial use, 13.5 % for automotive use and 12% for thermal generation use.

As natural gas does not present sulfur and nitrogen in its composition, it provides a free of sulfur dioxide –SO<sub>2</sub> with a smaller nitrogen oxide –NO<sub>x</sub> emission rate, among fossil fuels. Besides that, by being an gaseous fuel, its combustion processes in a more complete way and the carbon monoxide emission is lower than the other fossil fuels.

#### *The Minas Program Small Hydroelectric Centrals*

Cemig created a Core of Excellence in Small Hydroelectric Centrals in Itajubá and is working on to expand the number of power plants through the “Minas Program Small Hydroelectric Centrals”. This program is a partnership of Cemig and private investors, State Secretary of Minas Gerais and the Developing Bank of Minas Gerais State – BDMG. There are cadastres 37 small power plants, with 565 MW installed capacity.

In 2007, works were initiated in Small Hydroelectric Centrals Cachoeirão, with an operation start prevision in 2008's second semester. Which were possible through the implantations of Dores de Guanhões, Senhora do Porto, Fortuna II, Jacaré e Pipoca, small hydroelectric centrals with 91 MW installed capacity.

#### *Solar Energy – Benefits to the Community*

Cemig has developed works on the solar energy area, so much for the photon voltaic form as in its thermal solar form through the utilization of plan collectors and solar concentrators.

The partnership still continues, since 2002, between Cemig and Inhabitation Company of Minas Gerais State – Cohab and the State Regional Secretary Development and Public Politics – Sedru on Project for warming water wit solar energy in inhabitation areas. This projects has the objective of electric enrgy consumption optimization and peak demand reduction with the installation of an small scale solar heating system for inhabitation areas, prioritizing the ones built close to electric systems with supplying restriction. In 2007, 946 units were constructed in 7 cities of Minas Gerais State that provided an energy consumption reduction of 709 MWh/year and 518 kW of demand. With this project, Cemig was the winner of Environmental Prize Ponto Terra (Ponto Terra Environmental Award) – Minas 2007, in company category. The award, realized by Ponto Terra Organization, occurred during the 7<sup>th</sup> Latin America Conference about Environment and Social Responsibility – Ecolatina 2007.

And also, relating to water heating it was projected and installed in Cidade dos Meninos (Boys' City), a philanthropic entity that attends 5 thousand students, an innovator system that utilizes warm pumps of low potency coupled to a warming system with solar collectors. It was installed 42 systems that provided an economy of 220 MWh/year and a peak demand reduction of 480 kW.

Cemig, in 2007, installed 1,604 photo voltaic systems destined to community core electrification and rural residency of low income, within the *Programa Luz para Todos* (Light for Everyone Program). Cemig keeps investing in R&D projects for metallurgy silicon purification in Minas Gerais and photo voltaic cells development of low cost. Another initiative of the company refers to the research and experiments related to solar thermal electrics, using clindric-parabolic concentrators, and for water heating in a centralized form, using plane solar collectors (districted heat for low income communities).

#### *Investments on Sugar Cane Sector:*

In ambit of Programa Mineiro de Incentivo ao Desenvolvimento do Setor Sucroalcooleiro (Program for incentive to developing the sugar cane sector in Minas Gerias), intention protocols are being firmmed between Cemig, Minas Gerais Government, and sugar and alcohol plants that intend to install plants for energy co-generation for the utilization of crushed sugar-cane residues. It was identifies 45 plants to be implanted in Minas Gerais State, that will be able to reach a co-generation installed capacity of about 2,200 MW until 2015 with an extra generation of energy of 1,300 MWh for comercialization during the harvest period.

#### *Alternative Energy*

Cemig was the first Brazilian concessionaire of electric energy to install an eolion plant connected to an integrated electric system, the experimental wind plant at Morro do Camelinho, with capacity of 1 MW. A raising was made about the eolion-electric capacity of some promising

places in Minas Gerais State and, in 2007, it was signed confidential agreements with interested companies in evaluating the installation of an eolion power plant in the north of Minas Gerais. It was also initiated a R&D project of eolion-electric generators of small scale.

*v What investment has been or will be required to achieve the targets and over what time period?*

Even though there are not established goals, the resources destined to energy efficiency programs in year 2007 represented R\$ 43.5 million and refers to the energy efficiency program – PEE Cemig/Aneel and provided a consummation reduction of 47,054 MWh/year and a peak demand reduction of 8.3 MW.

Besides that, Cemig has realized an ample modernization and revitalization program in some plants, with investments of approximately R\$ 250 millions from the period of 2002 to 2009. The modernization and revitalization of these plants direct the investments to renewable energy, reducing the necessity of new generation plants construction.

Nowadays there are three big projects being implemented. The modernization of Três Marias Power Plant (396 MW) with an investment of R\$ 53 millions and conclusion due for 2008. The modernization of the generating units of Jaguará Power Plant (424 MW) with an investment of R\$ 60 million. This power plant started its operations in 1971, and was updated between the years 2004 and 2007. And the general reform of four generating units of Salto Grande Hydroelectric Power Plant (102 MW) with an estimated investment of around R\$ 17 million and will be concluded in 2009.

*vi What emissions reductions and associated costs or savings have been achieved to date as a result of the plan?*

The energy consumption reduction of 47,054 MWh/year and the peak demand reduction of 8.3 MW through the programs listed above it was obtained an GHG emission reduction of 6,622 tons on CO<sub>2</sub>e in the indirect form, once it was realized programs in installations of thirds. The economized energy is capable of supplying approximately 32.6 thousand residences with an average consumption of 120 kWh/month.

In the last years it has been occurred a significant reduction of vehicle fossil fuels. The consummation decreased in this activity, from 2004 to 2007, was 44.8%, being 19% only in 2007.

The electric energy consummation by the industrial installations and offices of Cemig there was a reduction from 2004 to 2007, of 12.5%, mostly by the internal awareness program and the energetic efficiency projects. This represents a reduction of approximately 2,229 tons of CO<sub>2</sub>e.

## **b Emissions Intensity (CDP 5 Question 4c)**

*i What is the most appropriate measurement of emissions intensity for your company?*

kgCO<sub>2</sub>e/MWh

Please give your company's emissions intensity figure for the measurement given above.

In 2007, Cemig's CO<sub>2</sub> total emission represented, 203,236 tons, and the emission intensity value was 5.74 CO<sub>2</sub>eq/MWh, very low value compared to the average of companies with base on thermal generation. If it was compared to a fictitious company in the electric sector

constituted, in equal parts, by mineral carbon, natural gas and oil fuel, the CO<sub>2</sub> emission intensity, would be 750 kgCO<sub>2</sub>/MWh<sup>1 2</sup>.

*ii Please state your GHG emissions intensity in terms of total tonnes of CO<sub>2</sub>-e reported under Scope 1 and Scope 2 per US \$m turnover and EBITDA for the reporting year.*

The emission total of scope 1 and 2 are 203,236 tons of CO<sub>2</sub>e.

*iii Has your company developed emissions intensity targets? If so:*

The Interconnected National System – SIN, gathering production, transmission, distribution in all Brazilian regions, demand a higher electric energy supply potential than what the current installed hydroelectric power plant can generate. The remaining energy demand is supplied by the increase in production of other power plants, mostly, thermal electric power plants. In the same way, when the demand of SIN exceeds Cemig's renewable energy production capacity, it has to produce electricity through its thermal power plants, increasing Cemig's emissions.

*a. Please state your emissions intensity targets.*

N.A.

*b. Please state what reductions in emissions intensity have been achieved against targets and over what time period.*

According to Kyoto's Protocol, Brazil is a non-Annex I country, therefore there are not obligatory GHG emission reduction goals and the company did not establish intensity goals itself. However Cemig, besides realizing an annual inventory for control of its emissions, adopted metrics and strategies to decrease GHG emissions, as for example, substitution of the vehicles fleet, efficiency metrics, energetic conservation so much internally as in partnership with several productive sectors of the society.

#### **c Planning (CDP5 Question 4e)**

Do you forecast your company's future emissions and/or energy use? If so:

There are no estimations of future emissions and energy use. However, through previously cited programs, Cemig seeks to minimize GHG emissions.

Besides the programs above, that are being developed, in the ambit of the sugar cane sector, intention protocols with sugar and alcohol plants that intend to be installed in Minas Gerais.

Cemig also effectuates a raising of the Aeolion-electric potency of some promising locals in Minas Gerais State and, in 2007, it signed agreements with interested companies in evaluating the installation of wind power plants in Minas Gerais. And also, a R&D project for wind-electric small scale generator was initiated.

In relation to bio fuels, the company has been working within other organizations of the state and research centers for the consolidation of biodiesel production technology in Minas Gerais. In 2007, it was opened the Biofuel Lab of the Technology Center Foundation in Minas Gerais – Cetec, with production capacity of 1,000 liters/day of biodiesel. In 2008, is foreseen the

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<sup>1</sup> Emission factor by energy, in CO<sub>2</sub>/TJ: natural gas (56,100 kgCO<sub>2</sub>/TJ); fuel oil (73,300 kgCO<sub>2</sub>/TJ); mineral carbon (98,300 kgCO<sub>2</sub>/TJ)

Reference source: 2006 IPCC Guidelines for National Greenhouse Gas Inventories

<sup>2</sup> It was considered an average performance for the electric energy generation: natural gas (40%); oil fuel (35%); mineral carbon (35%).

biodiesel utilization made in the lab for electric energy generation, in experimental form, in a motor generator group and in micro turbine.

Cemig has an experimental lab for hydrogen production by electrolysis and by ethanol reform. The hydrogen is initially used as fuel for fuel cells testing, for supplying intern demands and also a chemical element for the purification of silicon to be used on the R&D on Photo-Voltaic Cells Project that is in developing stage. Cemig studies in partnership with universities and research centers, new technologies of distributed generation. An important mark was the developing and construction, with national technology, of the first Stirling motor coupled directly to a forge for wood splinter burning. This experimental installation allows the generation of 9 kW of electric energy with the direct burn of biomass.

In partnership with Itaipu Binacional and Fiat Automobiles, it was initiated a research and study of technical and economic feasibility project for the utilization of motor vehicles moved by electric energy. Cemig intends to test prototypes of these vehicles in its fleet during the year 2008 aiming to evaluate operational aspects and maintenance and national technology development.

*i Please provide details of those forecasts, summarize the methodology used and the assumptions made.*

N.A.

*ii How do you factor the cost of future emissions into capital expenditure planning?*

N.A.

*iii How have these considerations made an impact on your investment decisions?*

N.A.

*iv Electric Utilities Forecasted Absolute and Relative Emissions By Fuel Type*

Cemig can not plan its emissions because of the Interconnected National System – SIN, gathering production, transmission, distribution in all Brazilian regions, that could demand a higher electric energy production potential than the possible capacity of the hydroelectric plants. This demand is supplied by the increase in production of other power plants, mostly, thermal electric plants. Cemig emissions could be higher if the SIN demanded more electric energy than all renewable plants of Cemig could have on production.

## 4 Governance

**Objective:** To determine responsibility and management approach to climate change.

### **a Responsibility** (CDP5 Question 5a)

*Does a Board Committee or other executive body have overall responsibility for climate change? If not, please state how overall responsibility for climate change is managed. If so:*

*i Which Board Committee or executive body has overall responsibility for climate change?*

Cemig's Board of Directors is made up of 8 Directors, elected by the Administrative Council. The statute defines that the Vice President Director has as one of its attributions the definition of politics and guidelines for environment, technology development, energetic alternatives and must monitor the conduction plan for attending the environmental, technological and quality improvements guidelines.

Into this politic the Board of Directors has defined a work group that has the objective of identifying opportunities to develop CDM – Clean Development Mechanism projects in the carbon market. This group is composed of at least one member of each Board of Directors and also one representant of Efficientia S.A., services company (ESCO – Energy Service Company) that is part of Cemig. In 2007, a CDM diagnosis was developed toward all areas of the company and raised 104 eligible projects for Kyoto's market. The Director of New Businesses has the function of promoting the prospect and analysis, regarding the company, in terms of business opportunities related to the benefits of the carbon credits market. The Commercial Director has the function of managing the commercialization of carbon credits of the company, with an interaction with the Director of New Businesses, considering the factor carbon credits generation for each new enterprise.

*ii What is the mechanism by which the Board or other executive body reviews the company's progress and status regarding climate change?*

There is no specific defined politic to review the company's progress or status in relation to climate change.

The sustainability report, like this document, describes activities related to climate change and the results reached with all company's initiatives.

The GHG emission inventory also provides guidelines in order to follow CO<sub>2</sub> annual emissions. All this data is inserted to worldly known sustainability indexes such as Dow Jones Sustainability Index (DJSI World), where Cemig was selected as being the world leader in "utilities" super sector, and the GRI – Global Report Initiative.

### **b Individual Performance** (CDP5 Question 5b)

Do you assess or provide incentive mechanisms for individual management of climate change issues including attainment of GHG targets? If so, please provide details.

Within the work group scope the developed projects by the company and that could be eligible to Clean Development Mechanism - CDM are evaluated. CDM project studies are inserted regarding energetic efficiency increase, cogeneration using biomass or industrial process's gases, renewable energy with biomass, small hydroelectric centrals, solar and wind.

Still within the context of CDM projects, Renewable Electricity Generation of Thermal Plant project that operates with the process's gases has a CDM project – Kyoto's Protocol CDM, already registered within the Executive Committee of UNFCCC - The United Nations Framework Convention on Climate Change, what could take to the obtainment of CER –

Certified Emission Reduction, registered on UNFCCC as "Project 0143-UTE Barreiro S.A. Renewable Electricity Generation Project".

Considering that Cemig's generation plant is predominantly composed by hydroelectric plants, that are considered renewable source of energy and, then not carbon emission players, the strategies and actions realized by Cemig with the objective of reducing carbon emission could affect climate equilibrium in the operational and influence areas, are the following:

- a) Promote metrics aiming energetic efficiency and conservation in several productive sectors of the society;
- b) Stimulate Small Hydroelectric Centrals and high efficiency co-generation (combined generation of stream and energy) projects. As examples, we could cite Cemig Minas Small Hydroelectric Centrals Program and Barreiro Thermal Electric Plant, that uses the gases from industrial processes of a metallurgy in order to produce energy;
- c) Facilitate the development of new technologies and projects of alternative sources of energy, such as solar, hydroelectric, biomass, fuel cell, biodiesel, among others, and also:
- d) To promote sustainable projects of energy consumption, including more efficient processes in the energetic area in partnerships with clients, public management organs. In this context, energetic efficiency is, for Cemig, a big ally in carbon emission reduction, associated to a cultural change and in the consumption habits of its clients.

#### **c Communications** (New to CDP6)

*Please indicate whether you publish information about the risks and opportunities presented to your company by climate change, details of your GHG emissions and plans to reduce emissions through any of the following communications:*

*i the company's Annual Report or other statutory filings, and/or*

Cemig shows in Sustainability Report annually to the public, specifying all the metrics adopted, which comprehend to projects and researches that aim the improvement of technologies and processes applied, for promoting alternatives that avoid or reduce GHG emissions.

In this report, the CDM project of Barreiro Thermal Plant was detached, which the energy reutilization of the process's gases contributed to accounted GHG emission reductions by these metallurgies, once the process's gases that would be thrown to the atmosphere are reused as input in these plants for electric energy and stream generation. The CDM appears as an opportunity to Cemig for promoting researches and reducing emissions.

Besides that, a series of programs and metrics cited above aim energetic efficiency and alternative energy use is being implemented by Cemig in the area of Minas Gerais State and they are detached in the Sustainability Report. Among these, they stand out mainly Baguari Hydroelectric Plant that is in a construction process and has operational start forecast to 2009. Additionally, must be detached the participation of Cemig in the Auction referring to Santo Antônio Hydroelectric Plant (Madeira River Complex) in December of 2007, in condition of consortium winner of the duel. Santo Antônio Hydroelectric Plant, with 3,150 MW installed capacity, located in River Madeira watershed, will be built in partnership with several companies, and Cemig Geração e Transmissão S.A. has 10% of participation and operational start forecasted to year 2012. And also Minas Small Hydroelectric Central Program processes besides the enterprises that it already has construction foreseen for 2007, 15 registered, totaling 209.4 MW of installed capacity, of which 68.5 MW with memos of understandings, 64.9 MW with confidential agreements signed and 76 MW with accomplished documental analysis.

*ii formal communications with shareholders or external parties, and/or*

For communication with the investors CEMIG the following site is available:

<http://v2.cemig.infoinvest.com.br/>

For that tool it is possible to access the annual reports containing financial demonstrations and the sustainability reports that expose to all investors its social, economical and environmental activities. Besides the annual reports there is the commitment to the reports of CVM (Commission of Securities), the Report SEC (SEC EDGAR Filing Information) and demonstrations with their fundamental indicators, historic of balances, results analysis and rendered information to international stock exchanges, in English and in Portuguese. Cemig makes available the answer of CDP in the site mentioned above, also in English and Portuguese, in the sustainability item.

*iii voluntary communications such as Corporate Social Responsibility reporting.*

The GHG inventory, with the annual following of CO<sub>2</sub> emissions of the company generates data that interfere in sustainability indexes of international reporters like Dow Jones Sustainability World Index (DJSI World), which Cemig was selected as the world leader of the "utilities" super sector, and GRI - Global Report Initiative. Its emphasis in sustainability has been recognized more and more and, in 2007, Cemig was selected the eighth consecutive year of permanence of Cemig in the Index and the first time that it is selected as world leader of the super sector. Cemig was also selected, for the third consecutive year, to compose the group of listed companies in the Sustainability Index of the Stock Exchange of São Paulo (ISE / Bovespa).

If so, please provide details and a link to the document(s) or a copy of the relevant excerpt.

The sustainability report can be accessed by the site:

[http://cemig.infoinvest.com.br/static/enu/relatorios\\_sustentabilidade.asp](http://cemig.infoinvest.com.br/static/enu/relatorios_sustentabilidade.asp).

The annual report can be accessed by the site:

<http://cemig.infoinvest.com.br/static/ptb/relatorios.asp#>.

For more information please access the site:

<http://v2.cemig.infoinvest.com.br>

[www.cemig.com.br](http://www.cemig.com.br)

**d Public Policy (New to CDP6)**

Do you engage with policymakers on possible responses to climate change including taxation, regulation and carbon trading? If so, please provide details.

N.A.