REPUBLIC OF CROATIA

CITY OF ZAGREB

MAYOR

Zagreb, May 16, 2014

PANEL:
SMART CITIES AND REGIONS:
FORGING PARTNERSHIPS TO FACE ENVIRONMENTAL CHALLENGES

BELO HORIZONTE:
THE CONSTRUCTION OF A SUSTAINABLE CITY

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Belo Horizonte
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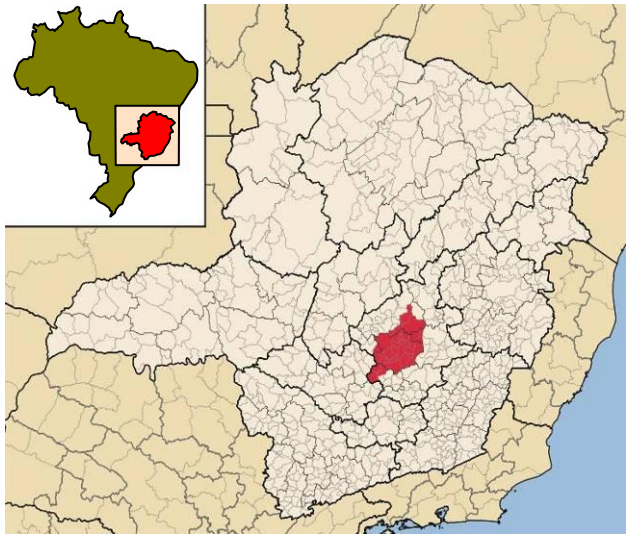
Belo Horizonte and the Metropolitan Region of Belo Horizonte (BHMR)

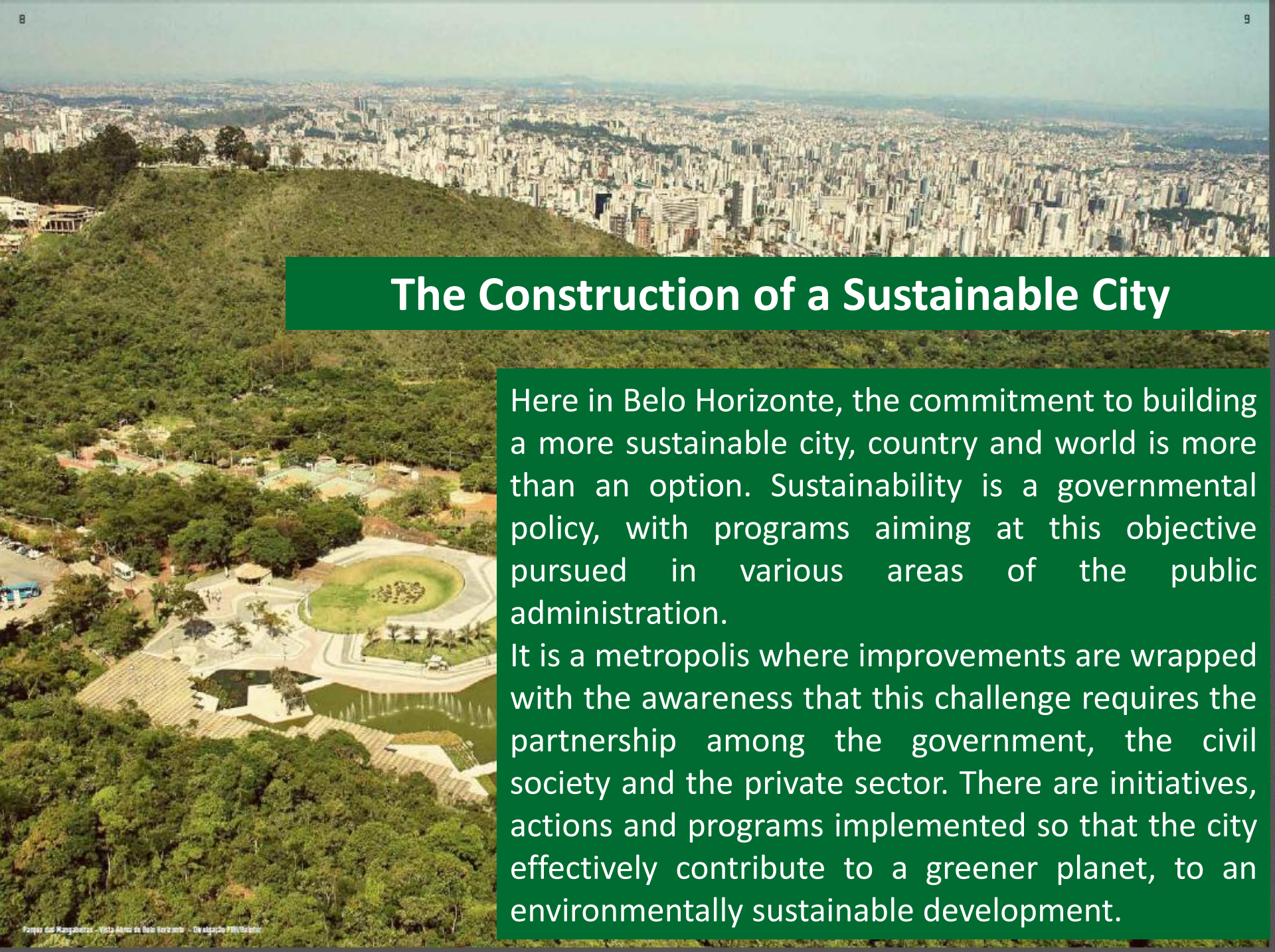


(34 cities)

FONTE:http://pt.wikipedia.org

Background Information

- Young city: **116 years old**
- Population**: 2.4m (5.1m in Metropolitan area)**
- Area: **331 km²**
- Density: **7,176 people per km²**
- Human Development Index (HDI)**: 0.84**
- GDP per Capita**: US$9,906.78**
- Economic activities (% of GDP):
  - **Trade and Services: 69.4%**
  - **Public Sector: 16.2%**
  - **Industry: 14.4%**



The Construction of a Sustainable City

Here in Belo Horizonte, the commitment to building a more sustainable city, country and world is more than an option. Sustainability is a governmental policy, with programs aiming at this objective pursued in various areas of the public administration.

It is a metropolis where improvements are wrapped with the awareness that this challenge requires the partnership among the government, the civil society and the private sector. There are initiatives, actions and programs implemented so that the city effectively contribute to a greener planet, to an environmentally sustainable development.

Sustainability Goals and Vision for the City

- Envisioning a **long-term Strategic Planning Program (BH 2030)** based on **25 Measurable Goals**
  - Toward a city of **opportunities, sustainable** and with **high quality of life**

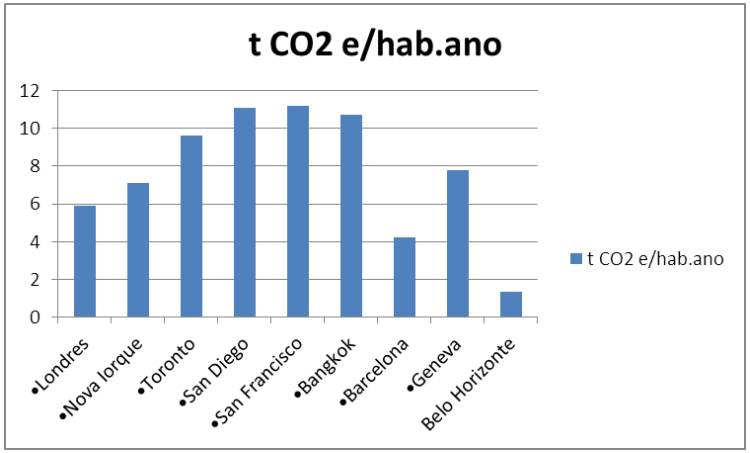
- Implementing a short-term **(2013 – 2016) Government Plan** structured into:
  - **12 Areas**
  - **40 major projects**
  - **Over 500 actions**

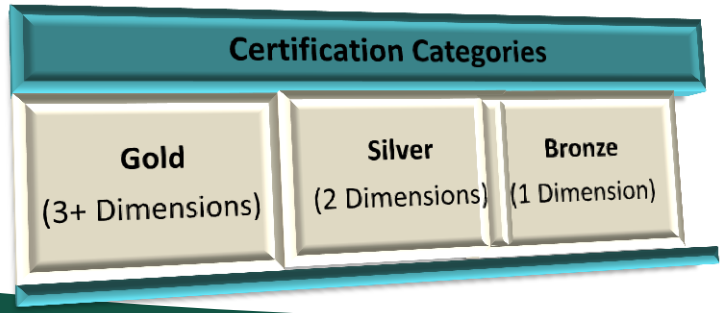
Municipal Committee on Climate Change and Eco-Efficiency (MCCCEF)

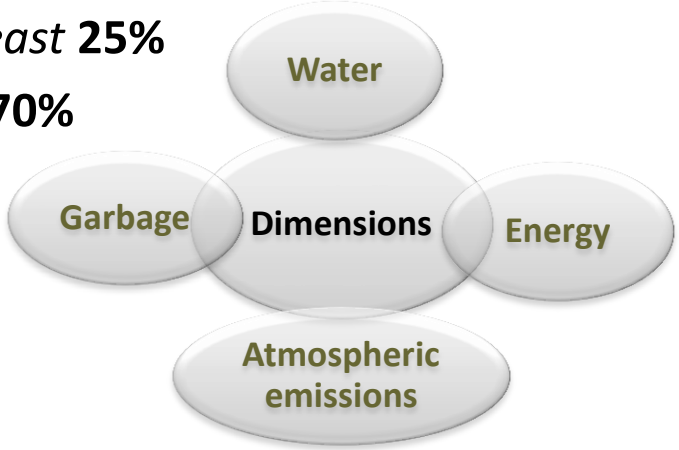
The Municipal Committee on Climate Change and Eco-Efficiency (MCCCEF) initiated the Municipal Policy to Mitigate Climate Change Effects in Belo Horizonte in 2006. It works on the articulation of public policy and private initiative to reduce greenhouse gases in the atmosphere and to enhance the environmental awareness of the society. Representatives of the municipal government and the state, citizens, nongovernmental organizations, the private sector and academic groups are working on the projects of Sanitation (Urban Water and Solid Waste), Energy Efficiency and Renewable Energy and sustainable buildings.

Current Actions for Achieving our Sustainability Goals

- **Climate Change** and **Ecoefficiency**
  - Two **Inventories of Greenhouse Gas Emissions** (2000–2007, 2008–2010)
    - Now being **updated annually**
  - **Emissions Reduction Plan,** collaboratively coordinated by the **CMMCE**
  - **BH Sustainable Seal**
    - Recognizes **businesses and buildings** that:
      - Reduce **water consumption by** *at least* **30%**
      - Reduce **energy consumption by** *at least* **25%**
      - Increase **waste recycling by** *at least* **70%**







Current Actions for Achieving our Sustainability Goals

- **Greener Belo Horizonte Program**
  - Already the **3rd most forested city in Brazil**
    - **18 square meters per person in green areas**
    - **73 Municipal parks, 790 public squares**
  - **Planting 54 thousand trees** by the end of 2014

Current Actions for Achieving our Sustainability Goals

- **"DRENURBS" Program**
  - **Revitalizes watercourses** and **creates linear parks**
    - **700km of streams** throughout **256 sub-basins**

- **Excellent Sanitation Services**
  - **100% water supply**
  - **Over 95% sewage and garbage collection**
  - **70% Sewage treatment**

Current Actions for Achieving our Sustainability Goals

- ✧ ***"Vila Viva"*** **Program**
  - ✧ Profound **revitalization of vulnerable areas**

Current Actions for Achieving our Sustainability Goals

- **Disaster Reduction and Management Strategy**
  - **Strategic Plan of the Civil Defense**
  - **Contingency Plan** for an **early alert system**
  - **Ongoing Activity Reports:**
    - **Executive Program for Risk Areas (PEAR)**
      - Diagnoses, prevents, & minimizes **geological risks**
    - **Reference Centers in Risk Areas (CREAR)**
      - Advanced posts for preventive work within the slums
    - **Rain Alert Team (NAC)** covers the main **flooding risk areas**
  - Awarded the ***Sasakawa Prize*** for **resilient cities** by the **Nations**

Transitioning to an Efficient Renewable Energy Future

- **98% of our electricity** comes **from renewable sources,** mainly water
- Minas Gerais is the Brazilian state with the highest per capita area of solar collectors. The capital has a system for heating water by solar energy in about 3,000 buildings. After 25 years of studies in the implementation and diffusion of technology, the initiative has assured the city of Belo Horizonte the title of ***"National Capital of Solar Energy."***

Transitioning to an Efficient Renewable Energy Future

- We are **Brazil's Solar Energy Capital**
  - With over **422m² of solar collectors per 1,000 habitants**
    - Compared to **127m² in Minas Gerais** and **44m² in Brazil**

The city also has the second largest pool heating system in South America. ***Minas Tênis Clube***

Transitioning to an Efficient Renewable Energy Future

- The only Brazilian capital to have **100% LED bulbs in traffic lights**
- In 2011, the City Hall, in partnership with Cemig, replaced with LEDs (Light Emitting Diode) the 22,500 incandescent and halogen bulbs of the traffic lights in 853 signaled traffic intersections in the capital.
- The change in the system represents an 87% reduction in energy consumption for each lamp substituted.

Transitioning to an Efficient Renewable Energy Future

- Our World Cup Stadium, ***Mineirão***, is **covered with Photovoltaic Cells**
  - Enough to **sustain itself** and **even resell excess electricity**

Transitioning to an Efficient Renewable Energy Future

Beginning of the energy production through the extraction of biogas
CTRS 040 (2011)

Transitioning to an Efficient Renewable Energy Future

BIOGAS EXTRACTION

- Public Private Partneship -PPP for the biogas (generated in the sanitary landfill) extraction;
- Amount allocated to the City Hall: $ 9.5 million;
- 15-year Concession;
- Contract signed in 2008 of july;
- 4.000.000 tonnes of CO2.

- High-capacity **Landfill Biogas Capitation Plant**
  - Can burn **up to 4,000m³ of gas per hour** and provide energy to about 20,000 houses

Transitioning to an Efficient Renewable Energy Future

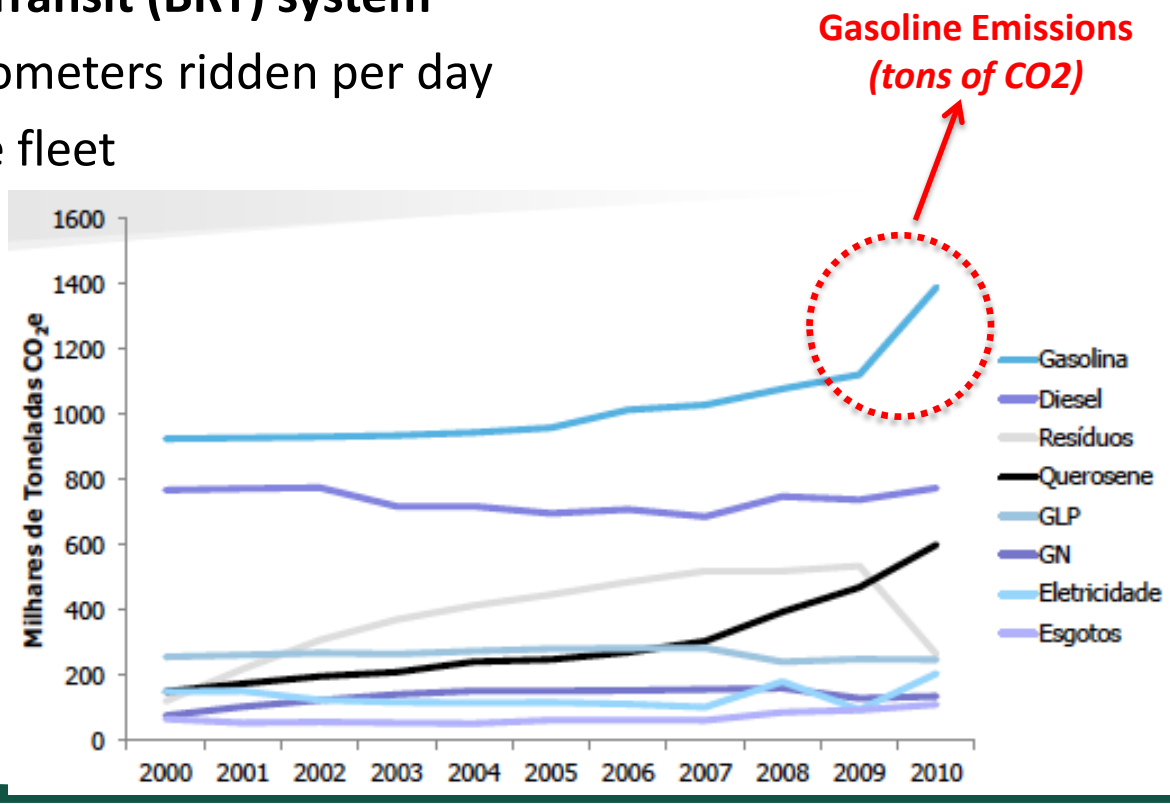
BIOGAS EXTRACTION

- Forecasting of avoided emissions: 4,000,000 (four million tonnes) of CO_2 in 10 years;
- The plant consists of several lines for gas pumping and 4 burners;
- The project was approved as Developed Clean Mechanism MDL according to the Fourth Convention of the United Nations (KYOTO PROTOCOL);
- The energy production that can be generated in the plant (5MW) will allow SLU to be self sufficient in energy due to their participation in the business.

Upcoming Actions for an Efficient Energy Future

- **Significant increase in gasoline emissions**
  - 3.8 million trips per day, only 34.6% in public transportation
  - Total of 1.26 million vehicles; 10% growth per year
  - More than 3 thousand buses across 263 different lines

- **Implementing a Bus Rapit Transit (BRT) system**
  - Reduction of 16% of kilometers ridden per day
  - Reduction in 10% of the fleet



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BELO HORIZONTE recently won the title of Earth Hour Capital 2014 for having demonstrated a sincere commitment to the creation of sustainable cities.

ICLEI
Local Governments for Sustainability

WWF
World Wildlife Fund

Thank you!

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