

HOW SÃO PAULO INTENDS TO REDUCE CARBON EMISSIONS

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Valor Econômico - May 23, 2007

We, citizens of the whole world, have followed the scientific debates about the implementation of measures intended to minimize the dramatic effects of weather change on a global scale. From the distance, we watch with perplexity the debates among nations about responsibilities and encumbrances for the adoption of possible measures. It is apparent that city governments are actually the institutions potentially capable of making advancements.

A group of gases intensely produced by human activity results in changes in the balance between energy received and energy absorbed by the Earth, and there is evidence that we continue to increase amounts of energy in the atmosphere, causing a rise in temperatures. Methane is one of the most relevant of such gases: a ton of methane is equivalent to approximately 21 tons of carbon dioxide in the formation of the greenhouse effect.

Not many people are aware that the City of São Paulo already contributes effectively and significantly to the reduction of global emissions of methane gas, whereas its largest sources are now under control.

That environmental gain was achieved through intervention in a problem we once believed had been solved a long time ago: the disposal of solid urban waste - domestic garbage. Such is the complex and conflicting environmental question, but in São Paulo domestic waste is collected and kept out of sight of most inhabitants. Thus the problem is only present if and when errors in domestic garbage collection occur.

Beyond the visible face of the problem, a complex network of services and investments allows safe management of the waste, which is kept out of reach of human contact and disposed of at dumps. Such dumps, unlike the *lixões* (irregular and extremely large outdoor dumps), are environmentally protected areas, avoiding human contamination, as well as damage to the soil and ground water tables. The city of São Paulo operates two good garbage dumps: *Bandeirantes* and *São João*, built and maintained with adequate safety. Like everything else in the city, the numbers are impressive: the *Bandeirantes* dump alone, in the Northern part of the city, receives seven thousand tons of garbage daily, besides the mud generated by sewage treatment of *Sabesp* (the State Water Authority).

The gas generated by the slow decomposition of the abundant organic matter present in the garbage has gained new meaning in recent years. The biogas, a gaseous mixture of organic origin, rich in methane, crosses the layers of material covering the dumps and releases itself to the atmosphere, thus contributing to the greenhouse effect and global weather changes. The strict control of such biogas takes place with its collection and burning, through a known and tested, albeit expensive, technology.

The city has already implemented control of biogas at the *Bandeirantes* dump. A system for collecting and compacting prevents the gas from being released into the atmosphere, besides allowing 80% of the biogas collected to be used as a source for the generation of electric power at a thermal 22 MW electric plant. The biogas surplus is burnt. Environmental gain is twofold: besides collecting the gas, the need for new sources of energy is minimized.

The investment was made possible by the ingenious financial schemes of the Kyoto Protocol: the earlier industrialized countries have their own targets for the reduction of the emission of gases that cause the greenhouse effect, and must meet them either within their territory or by financing investments in emerging countries.

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The project was checked and received the certification for the effective reduction in emissions from the U.N.'s technical body. Therefore, carbon credits were issued, and should be purchased by companies and institutions in countries having emission control targets to be met. By purchasing them, those countries are funding the environmental control already implemented here.

The *Bandeirantes* garbage dump already owns a dump control certification for the equivalent of 1,150,144 tons of carbon, a figure pretty close to the carbon credits generated by all the other certified Brazilian projects combined. It is the highest possible certification for a garbage dump in the whole world. It is also the one project generating the highest benefit percentage for the State, as half the credits belongs to the city and the other half to *Biogás Energia Ambiental S.A.*, the city's licensee for investments in the exploitation of that gas.

The credits belonging to the licensee company have meanwhile been sold on the company's own initiative and pursuant to its private interest. The city's share will soon be sold at a public auction with international reach, a sure and transparent means for a public entity to obtain the highest selling price, with the necessary guarantees for all parties involved.

It is the very first case of an inversion of a classic equation: usually investors and brokers in countries with carbon control targets to be met offer financing in exchange for the sale in installments of the credits to be eventually issued. The city is in a comfortable position and, by having made possible the investments and procedures through licensees, now offer potential buyers enough safety to attain best prices for the delivery of certificates.

The city will invest the amount collected from the auction in urban and environmental improvements of areas surrounding the *Bandeirantes* dump, whose impact is directly experienced there. The neighborhoods of *Perus* and *Pirituba* will receive parks and squares and benefit from other actions extensively discussed in public meetings. Since control of the methane gas will be continuous, soon we will have more credits to sell, always through public auctions, with social investments of the results. The dumps are city assets and should be maintained, valued and exploited throughout their life span.

In a few days, at the far Eastern end of the city a new facility for collecting and burning gas will be opened at another garbage dump, the *São João* dump, which will increase the contribution for the control of effects of greenhouse gases. The certification of the project and the selling of new carbon credits will also assure social and environmental investments in the areas surrounding such dump.

Through those actions, we will achieve a decrease of around 20% of carbon equivalent emitted by the city. This represents an environmental gain thus far matched by few, and qualifies the city of São Paulo as a proud and respected member in international debates.

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