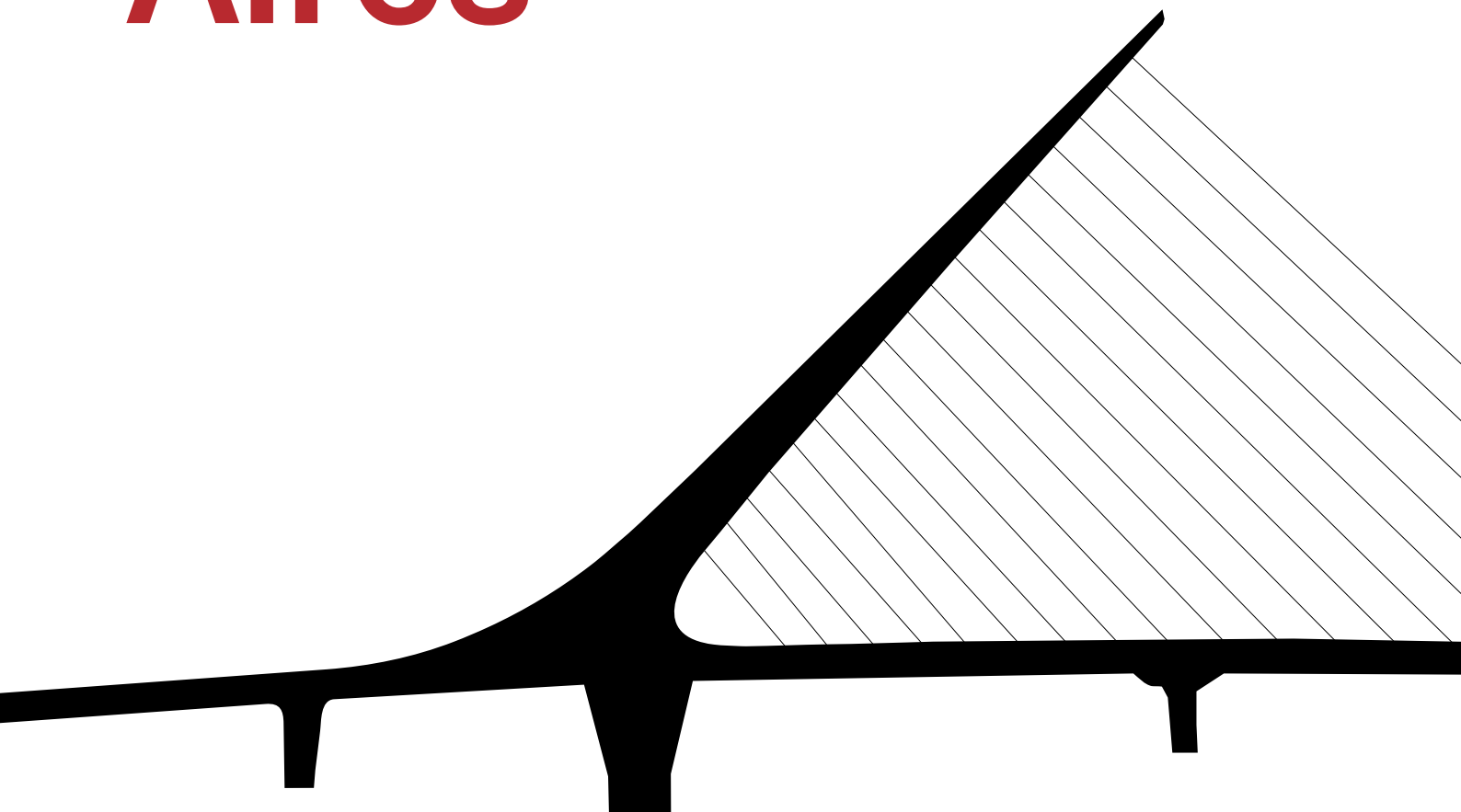


Data provided for the
CDP Cities 2013 Report

www.cdp.net

City of Buenos Aires



Written by



In partnership with



Report analysis & information
design for CDP by





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CDP, C40 and AECOM are proud to present results from our third consecutive year of climate change reporting for cities. It was an impressive year, with 110 cities reporting on their climate change data (a 50% increase from 2012), making this the largest and most comprehensive survey of cities and climate change published to date by CDP. City governments from Dallas to Hanoi to Ouagadougou participated, including over 80% of the membership of the C40 – a group of the world’s largest cities dedicated to climate change leadership.

Approximately two thirds of reporting cities measure city-wide emissions. Together, these cities account for just over 1 billion tonnes of greenhouse gas emissions, putting them on par with Japan, the world’s third largest economy and fourth largest emitter of greenhouse gas emissions. Over 70% of all reporting cities now have a plan for adapting to the effects of climate change. And cities reported over 1,000 individual actions designed to reduce emissions and adapt to a changing climate.

CDP salutes the hard work and dedication of the world’s city governments in measuring and reporting these important pieces of data. With this report, we provide city governments the information and insights that we hope will assist their work in tackling climate change.

The data presented here conveys information about every aspect of climate change measurement and management in **Buenos Aires**.

This document contains the questionnaire data provided to CDP from Buenos Aires as part of its 2013 CDP submission.

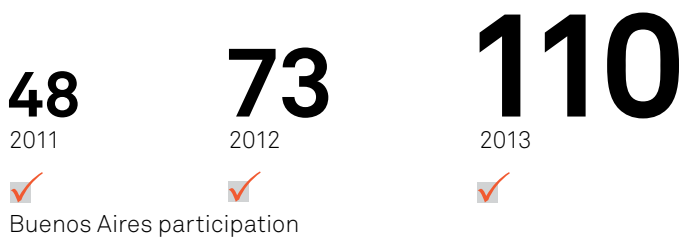
To see all of the results for all participating cities, visit cdpcities2013.net

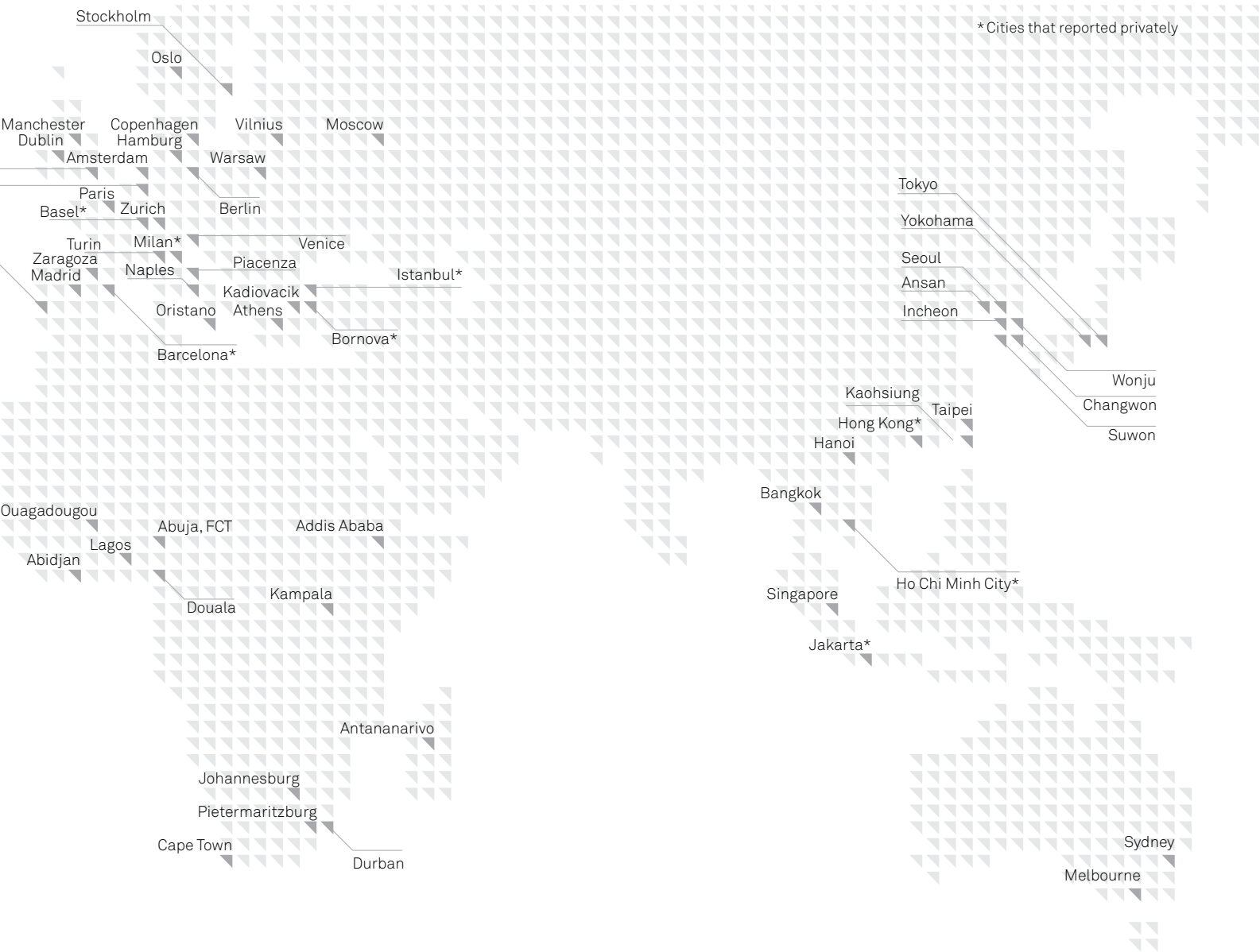
The graphics in this document are from the 2013 CDP Cities 2013 and Wealthier, Healthier Cities reports.



Buenos Aires in context

Number of cities responding per year





Total population of cities responding in 2013

296,471,000

Where Buenos Aires fits



27 cities
with **less than 600,000** people

33 cities
with **600,000 to 1,600,000** people

50 cities
with **greater than 1,600,000** people

Buenos Aires
2,891,082
people

Year reported

2013

Area

200

km²

Population

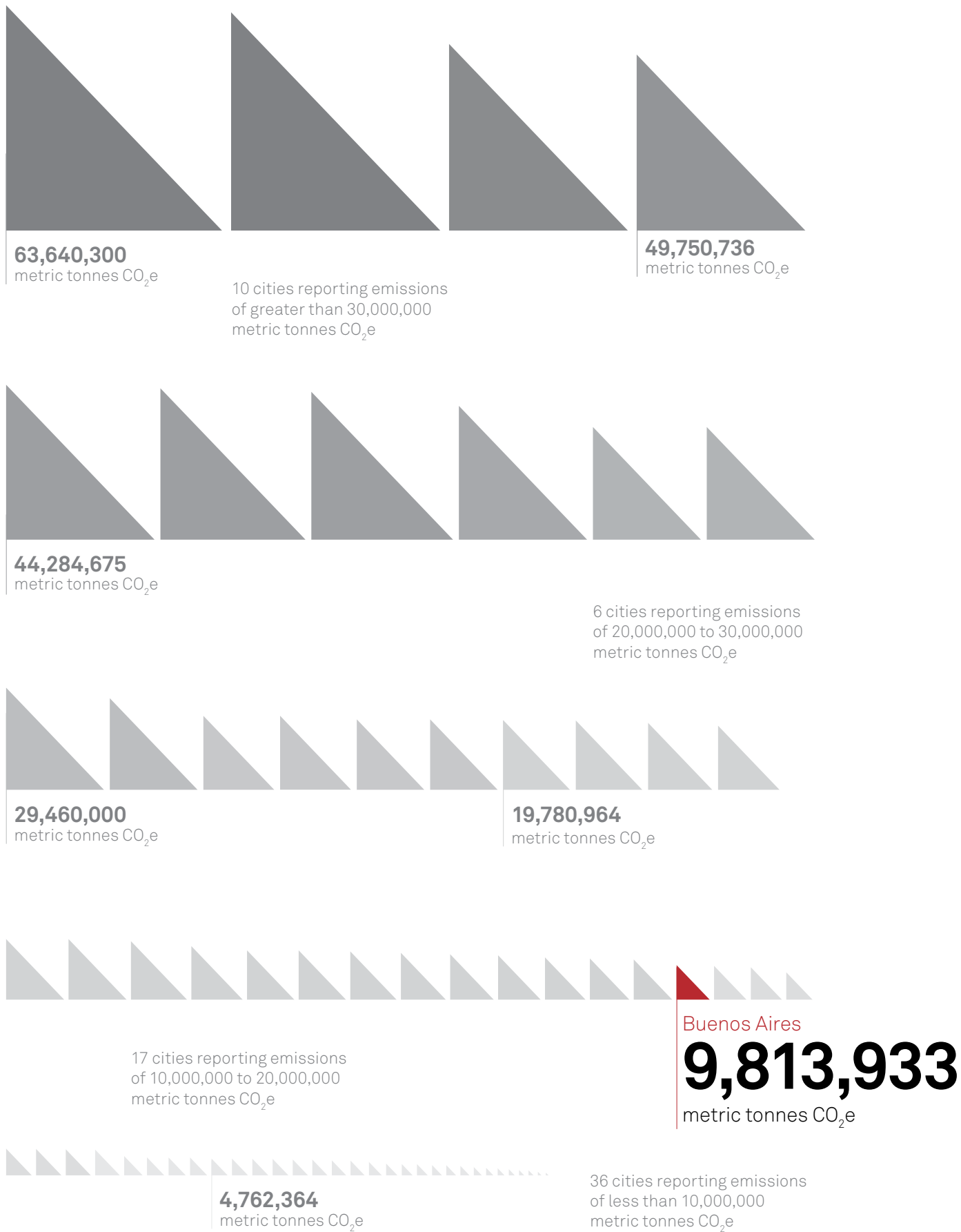
2,891,082

Buenos Aires in focus

Inventory method

Proprietary methodology

69 cities reporting emissions in 2013



0 Introduction

The 1994 constitutional amendment granted the city autonomy, whose formal name is: Autonomous City of Buenos Aires. The Río de la Plata and the Riachuelo are the natural borders of the city on the east and south, respectively. The rest of the metropolitan perimeter is surrounded by the General Paz Avenue from north to west. This avenue provides a fast connection between the city and the metropolitan area, a densely populated area with important business and industrial activity.

Introduction

The region was formerly crossed by different creeks and lagoons, some of which were refilled and others tubed. In 1908 many creeks were channeled and rectified, as floods were damaging the city's infrastructure. Starting in 1919, most creeks were enclosed. Notably, the Maldonado was tubed in 1954, and currently runs below Juan B. Justo Avenue.

The city's average annual rainfall ascends to 1,146 mm. Buenos Aires was founded in an area crossed by the winds called Pampero and Sudestada, and for the basins of rivers and creeks. The climate of Buenos Aires is temperate, with warm summers and fresh winters and average annual temperatures of 18°C. Especially, in the urban regions the temperatures tend to be higher than the registered in the suburban or rural surrounding area. Buenos Aires has experienced a rapid growth building construction, that together with the lack of planning, has contributed to increase this phenomenon known as heat island effect.

The City of Buenos Aires has grown throughout almost five centuries, without a specific planning, rather than the spontaneous union of originally distant neighborhoods. That is why the city presents an enormous variety of building design and utility. Throughout the time creeks and rivers were piped and refilled low zones that were attenuating the impact of the rains. At the same time, areas were levelled, streets were paved, towers and buildings were constructed, and other own modifications of the urbanization were carried out.

The changes fundamentally followed the line of the political and economic prevailing projects in every historical moment.

The Executive Office of the city of Buenos Aires is held by the Chief of Government elected for a four-year term. The Judicial branch is composed of the Supreme Court of Justice, the Magistrate's Council, the Public Ministry, and other City Courts. The national judiciary determines the autonomy of the city's judiciary with regard to common law, while the national executive branch controls the city's police. Since 2007, the 48 neighborhoods were organized in 15 communes. As for the relationship with the National and Regional Government, the City's political party happens to be the opposition to the national and regional government.

Buenos Aires is the financial, industrial, commercial, and cultural hub of Argentina. Its port is one of the busiest in South America; navigable rivers connect the port to northeast Argentina, Brazil, Uruguay and Paraguay. The economy in the city proper alone, measured by Gross Geographic Product, totalled US\$ 92.15 billion (US\$ 30.285 per capita) in 2008 and amounts to nearly a fourth of Argentina's entire economic output. The city's services sector is diversified and well-developed, and accounts for 76% of its economy (compared to 59% for the service sector for all of Argentina). However, the financial, business and real-estate services sector is the largest single sector of the city's economy, with 31%. Finance in Buenos Aires is especially important to Argentina's banking system, accounting for nearly half the nation's bank deposits and lending.

To the west of Buenos Aires is the Pampa Húmeda, the most productive agricultural region of Argentina which produces wheat, soybeans and corn. Meat, dairy, grain, tobacco, wool and leather products are processed or manufactured in the Buenos Aires metropolitan area. Other leading industries are automobile manufacturing, oil refining, metalworking, machine building and the production of textiles, chemicals, clothing and beverages. The city relies on local income and capital gains taxes for 61% of its revenues, while federal revenue sharing contributes 11%, property taxes, 9%, and vehicle taxes, 6%. Other revenues include user fees, fines and gambling duties. The city devotes 26% of its budget to education, 22% for health, 17% for public services and infrastructure, 16% for social welfare and culture, 12% in administrative costs and 4% for law enforcement.

Buenos Aires is reporting Government and Community GHG emissions.

1 Governance

Despite the fact that the City of Buenos Aires is not legally obliged to execute emission reduction programs, its Government assumes responsibility for the GHG emissions produced by its 2,891,082 inhabitants and nearly 3,200,000 commuters.

Bearing in mind the global effect of Climate Change, the Environmental Protection Agency of the City of Buenos Aires strongly believes that the only way to achieve GHG emission reduction is through Local Initiatives.

Governance

Thus, it is important to develop local Action Plans that take into account the risks and vulnerability specific to each region, as well as the adaptation strategies needed to prepare for the predicted climate changes.

Taking into account that Buenos Aires is one of the largest cities in Latin America, the Government has decided to embark on a long-term effort to develop a comprehensive climate change adaptation strategy and reduce the City's contribution to global warming. This is why, in December 2009 the City, officially launched the Climate Change Action Plan.

In order to establish this plan as a State Policy, the Adaptation and Mitigation Climate Change Law was approved in the City Legislature in September 2011 (and is being regulated at the moment), with the objective of establishing actions, tools and strategies in order to reduce human vulnerability and natural systems, protect its effects and strengthen its benefits; confirming the decision of the Government to grant Climate Change the importance it deserves, thus transforming it into a real and cross disciplinary state policy.

The Act defines the dissemination and communication strategies with the aim of ensuring access to information for all stakeholders. Likewise, it states to be the duty of the Enforcement Authority to promote public participation of stakeholders in pursuit of the definition of the best options for adaptation and mitigation, as well as the creation of an External Advisory Council, composed of experts in the field, to assist and advise the implementing authority, and the convening of a Ministerial Team, to coordinate between different departments the management of public policies related to the implementation of the law.

The law establishes the Enforcement Authority, to the highest environmental authority of the City of Buenos Aires: the Environmental Protection Agency. The Act establishes as well that specific adaptation and mitigation actions are compiled into the Climate Change Action Plan, defined as the city's strategy. The Action Plan launched in December 2009 stands as the starting point for the long-term strategy, which must be updated every five years.

However, the city government understands the need to go beyond this first step, establishing thus partial compliance goals every five years, always keeping in mind the ultimate goal set for 2030 (so as to be consistent with the Action Plan update period established by Law 3871/2011). Each period target will be disclosed in the Strategy Section.

After a thorough analysis of emission potential reduction for each mitigation sector, the city government set a 5% emission reduction target for 2015. This work was done in conjunction with the rest of the departments involved, understanding the importance of an inter-ministerial work while dealing with a cross-cutting issue.

As for the progress review, Buenos Aires developed its first GHG Inventory in 2003 (data until 2000) using the HEAT software provided by ICLEI. During the year 2009 the city developed the Climate Change Action Plan, together with the update of the GHG Inventory, during the period 2000–2008. The update was performed by Buenos Aires EPA, using for the general structure and for the transport sector in particular, the software Project 2 Degrees from the Clinton Foundation developed by Microsoft, Ascentium, ICLEI and CNT. In December 2010, the City signed an agreement with a National University and a Consultancy firm, in order to update the Inventory.

After a long process in order to collect, analyse and process new data, the City is ready to present GHG emissions results as for December 2010.

As mentioned, Buenos Aires City's population is almost 3,000,000 residents, but daily 3,200,000 commuters enter the City for different activities. For this reason, when calculating per capita indicators, we add 1/3 of commuters to the almost 3 million residents, taking into consideration commuters spend 8 hours per day (1/3 of the day) in the City, making use of electronic devices, consuming water and other resources, as well as disposing solid waste.



Buenos Aires does not provide incentives for management of climate change issues, including the attainment of greenhouse gas (GHG) reduction targets.

At a national level, although the Kyoto Protocol only sets legally binding GHG emissions reduction targets for developed countries, developing countries and their cities must also take on responsibility in reducing their emissions.





2 Physical risks

Current and/or anticipated effects of climate change present significant physical risks to Buenos Aires:

Seriousness

Low  Medium  High 

Timescale

Current 
 Short-term 
 Medium-term 
 Long-term 

More frequent hot days

Risk:  Timescale: 

Heatwaves and the increase in number of plagues have a negative effect on human health, as well as an increase on energy consumption and demand.

Risks & Adaptation

Hotter summers

Risk:  Timescale: 

Hotter and longer summers, cause a negative impact on human health as well as heatwaves and the increase in plagues affecting population. As a consequence, there is an increase on energy consumption and demand.

More frequent heatwaves

Risk:  Timescale: 

An increase in the number of heatwaves has a negative impact on human health, especially affecting children and adults over 65 years old.

Increased urban heat island effect

Risk:  Timescale: 

Due to an increase in the City's temperature there is an increase on energy consumption and demand.

Sea level rise

Risk:  Timescale: 

The sea level rise will directly cause the Rio de la Plata level rise, which will increase frequency of floods.

Increased wind speeds

Risk:  Timescale: 

Increased wind speeds are expected, together with changes in the wind direction towards the East, increasing the frequency of storms known in Buenos Aires, as 'Sudestadas'.

Increased frequency of large storms

Risk:  Timescale: 

An increase in the number of large storm is expected to cause a negative impact on human health as well as social impacts, especially on low income population.

More intense rainfall

Risk:  Timescale: 

More intense rainfall has negative social impacts, as well as impacts on human health in spontaneous settlements near the river. As a consequence of floods there are material losses, sometimes including housing losses, causing the need of settlements to relocate.

Increased average annual rainfall

Risk:  Timescale: 

Impacts on water availability.

More extreme precipitation events

Risk:  Timescale: 

Increase in extreme precipitation events, such as Rainfall over 100 mm in 24 hours and Rainfall over 60 mm in 1 hour have impacts on human health, social impacts (evacuations) and material losses.

Plague increase

Risk:  Timescale: 

Plague increase will affect population, causing negative impact on human health.

Decrease air quality

Risk:  Timescale: 

Deterioration of air quality is expected due to the use low-quality fuels in the production of energy from power stations in the city, in the aim of fulfilling demand.

Increased extreme events

Risk:  Timescale: 

According to future climatic scenarios, the city might suffer an increase (in terms of frequency and intensity) in extreme events in general, such as heavy storms, heat waves, sea level rise and wind effects. It is not yet confirmed, climate change impact in hail and snow storms events

From the rapid and unplanned urbanization that occurred in the city since the 1950s, some frequent flood-prone areas were occupied mainly by low-income social sectors looking for better opportunities.

Despite the remarkable increase in population density in the City, the lack of planning and infrastructure investment in recent decades has failed to address, even, natural increase in urban populations themselves. This has resulted in growth disorders of all kinds: lack or inefficiency of services and infrastructure, housing shortage and occupation of unsuitable areas, which are more vulnerable to the effects of environmental degradation.

In general, low-income population settles with high levels of overcrowding in substandard housing on flood plains without safe water and sanitation. Every time the city suffers a rainfall over 30 mm in one hour, it affects more than 350,000 inhabitants, 90,000 of which live in coastal settlements.

Besides the climatic conditions, there are certain features of the city which make the situation even worst: such as an inadequate hydraulic capacity of the stormwater network, lack of urban planning, increase in building construction and pavement, decrease in soil's retention capacity, together with a reduction of green spaces and city trees.

The city's drainage system was not enough to handle rain water collection, which is why major rains and storms cause flooding in different areas. That is why, in the light of an expected increase in extreme rain events and severe storms, and taking into consideration that in the City of Buenos Aires paving intensifies runoffs, important contributions to our strategy include the maintenance of the rainfall drainage systems, the management of water reservoirs, and the expansion of new piped relief canals to control the main underground creeks.

A central objective of the Water Plan is the development of two new relief canals for the Maldonado Creek using the earth pressure balance technique for the very first time in Latin America. This great work aims at preventing floods on the largest basin of the City, thus reducing floods by 75% and therefore helping solve a recurring problem of past decades.

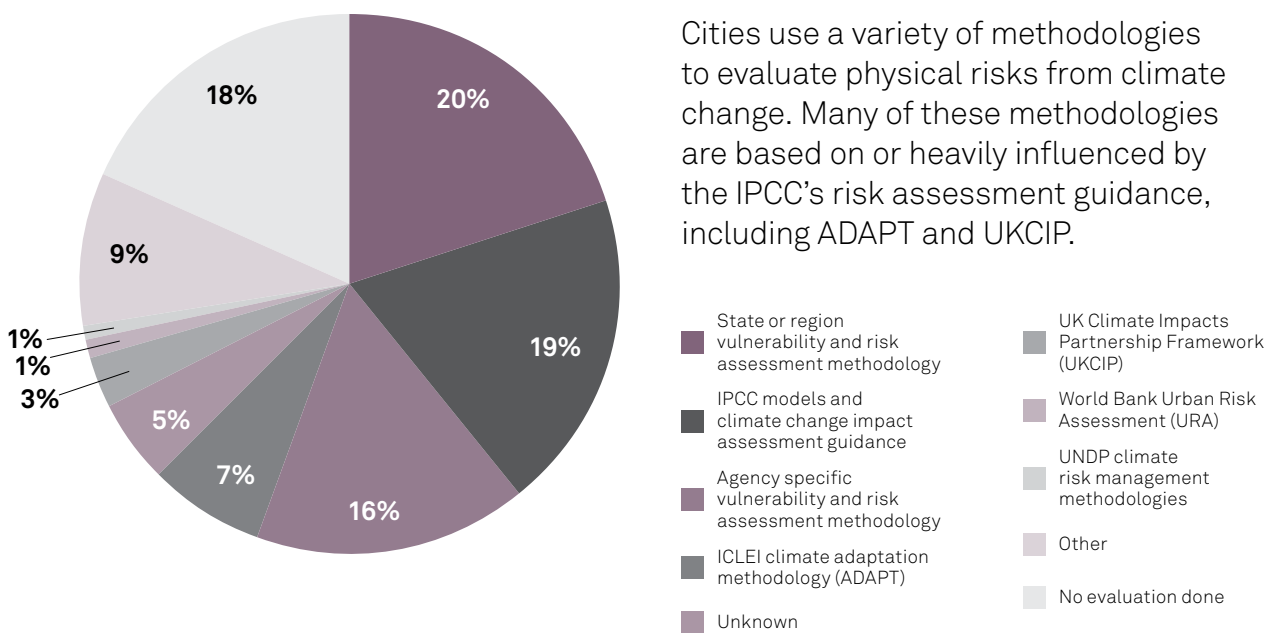
This project entails the completion of a short and a long tunnel. In September 2010, the short tunnel was completed, and is active since June 2011. In the same line, the long tunnel was finished, and is now working since August 2012. This project is expected to benefit approximately 267,000 people. In addition, water regulation in the event of intense rainfall now includes the management of several lakes in the City which serve as reservoirs.

The physical impacts of climate change could threaten the ability of businesses to operate successfully in Buenos Aires.

Physical impacts of climate change will increase Buenos Aires's costs, especially in the health department, and dealing with relocating settlements. Besides, when flooding occurs, the government has to deal with transport disruptions and lack of energy supply which may cause accidents because of failure in traffic lights.

Primary methodology used to evaluate physical risks

% of responses



During the process in which the Climate Change Action Plan was developed, the climatic conditions were analyzed in order to establish current changes and future expectations. From this analysis and according to the socioeconomic reality of the city, its infrastructure and its ability to adapt to changes, we were able to establish the level of vulnerability and risks of the different sectors. The City used its own methodology, based on expert's scientific knowledge, working together with the External Advisory Council. The information about the physical risks and changes in climatic conditions for the city in the future, were provided by the experts members of the External Advisory Council.

Future climate scenarios for the region were prepared from the information provided by the World Climate Research Program through the database from global climate models of the Coupled Model Intercomparison Project. These set of models were used by the IPCC in preparing the Fourth Report Synthesis (IPCC, 2007). Socio-economic scenarios are used in Global Climate Models to build future climate scenarios in order to estimate the concentration of each GHG. These scenarios are developed from emissions scenarios using information on the lifetimes of each of these gases in the atmosphere. Specifically, in terms of flooding, the vulnerable population was established among those living in regions below the altitude of 5m above the sea level. To estimate the likely area of future vulnerability to flooding, the experts consider the historical experience together with the future expectations of water level rise.

As mentioned in the Governance section, the City is already working in updating the Climate Change Action Plan. In order to analyze risk and vulnerability in a thorough way, we need to update climatic scenarios (both, current and anticipated events). In this framework and with the World Bank assistance, the City was able to update Impact Assessment and future scenarios with a scientific institution. At the same time, we started the institutional assessment in order to fulfil in the future the three pillars of an Urban Risk Assessment report. We are already making the most of this assistance, while we continue to analyse the data provided.

3 Adaptation

Buenos Aires has a plan for increasing its resilience to the expected physical effects of climate change.

Actions Buenos Aires is taking to reduce the risk to infrastructure, citizens, and businesses from climate changes include the following:

Increased urban heat island effect

Action: Green roofs

Green roofs and walls, consisting of rooftops and walls covered with vegetation, fulfill an important function: they decrease thermal range and reduce the loss of heat in winter and cold in summer. This first green roof was inaugurated in 2011 and, because it was constructed on a public school building, a low maintenance design was chosen and a path was built across the green area for student use. Moreover, the plants chosen are resistant to a wide temperature range. At the moment a follow up is taking place, measuring temperatures differences and water capacity. In the same line, in December 2012, the City Legislature passed a Law on Green roofs or terraces, which provides benefits for those owners who carry out these initiatives, more specifically, it grants discounts in lighting, sweeping and cleaning taxes (not yet regulated). Green walls help moderate temperature coming from concrete construction and reduce emissions and noise levels therefore the local Government has started the installation of green walls in urban highways.

Action: Tree planting and/or creation of green space

The City has strongly stepped over the environment, overwhelming its natural responsiveness capacity. Today we must fix this problem by creating new urban parks for recreation, planting street trees, creating more urban forests in order to purify the air, ensuring more permeable surfaces for flood control, and installing green roofs and walls. The proposed land distribution includes a network connecting three subsystems of green areas in the City. Urban green corridors can be included in linear parks or medium-to-large sized street trees systems. The main areas for the incorporation of these corridors are highly populated areas, and will include the construction of green roofs. The proposed land distribution includes a network connecting three subsystems of green areas in the City. Urban green corridors can be included in linear parks or medium-to-large sized street trees systems. The main areas for the incorporation of these corridors are highly populated areas, and will include the construction of green roofs.

Increased average annual rainfall**Action: Green roofs**

One of green roofs advantages in a City like Buenos Aires, with heavy storms, is the capacity to capture rain water, reducing flood risks. At the moment a follow up is taking place, measuring temperatures differences and water capacity.

More frequent hot days**Action: Disease prevention measures**

The rise of global temperature directly affects Dengue expansion, a viral disease transmitted by the “Tiger” mosquito. The prevention plan of the Government of the City of Buenos Aires against Dengue, aims to prevent the spread of the disease and eradicate those mosquitoes that transmit not only Dengue but other diseases as well. The Environmental Health Unit offers training courses related to the Climate Change and Health. In turn, the Environmental Epidemiological Surveillance Program aims at providing continuous, useful, and timely information about adverse environmental factors, to facilitate decision-making processes related to solution, control, and prevention.

More intense rainfall

Action: Storm water capture systems

In the light of an expected increase in extreme rain events and severe storms, and taking into consideration that in the City of Buenos Aires paving intensifies runoffs, important contributions to our strategy include the maintenance of the rainfall drainage systems, the management of water reservoirs, and the expansion of new piped relief canals to control the main underground creeks. A central objective of the Water Plan is the development of two new relief canals for the Maldonado Creek using the earth pressure balance technique for the very first time in Latin America. This project entails the completion of a short and a long tunnel.

This project is expected to benefit approximately 267,000 people. In addition, water regulation in the event of intense rainfall now includes the management of several lakes in the City which serve as reservoirs. In September 2010, the short tunnel was completed, and by August 2011, the second tunnel boring machine completed 8146.5m of a total of 9,864 m, thus completing 82.6% of the long tunnel. This project will benefit approximately 267,000 people. In addition, water regulation in the event of intense rainfall now includes the management of several lakes in the City which serve as reservoirs.

Action: Projects or policies targeted at those most vulnerable

Rainwater floods occur in different areas of the City of Buenos Aires every time it rains more than 30 mm in one hour, a recurrent problem that affects more than 90,000 people who are located in precarious riverside settlements, on the bank of the Riachuelo, a highly contaminated water body. In general, low-income population settles there in precarious and highly crowded housing, without safe water or sanitation services. They consist of flood zones, for which they must remain unoccupied. The local Government has performed surveys in all shantytowns on the riverside and has provided new housing in order to relocate families settled on the towpath (a 30 to 50 meter trail) in order to provide a solution to this major socio-environmental problem. In general, low-income population settles there in precarious and highly crowded housing, without safe water or sanitation services. They consist of flood zones, for which they must remain unoccupied. The local Government has performed surveys in all shantytowns on the riverside and has provided new housing in order to relocate families settled on the towpath (a 30 to 50 meter trail) in order to provide a solution to this major socio-environmental problem.

Increased extreme events

Action: Crisis management including warning and evacuation systems

Currently, the City of Buenos Aires has a weather alert network run by the Emergency Squad along with the Ministry of Environment and Public Space. The network has eight stations, and the Environmental Protection Agency plans to complete it by incorporating fixed Intelligent Monitoring Centers. This network will allow for the creation of a rainfall map –along with other weather variables– for each neighborhood, which will provide data for a more accurate alert system in the generation of weather forecasts and to analyze the “heat island” phenomenon. This network will allow for the creation of a rainfall map – along with other weather variables– for each neighborhood, which will provide data for a more accurate alert system in the generation of weather forecasts and to analyze the “heat island” phenomenon.

Action: Crisis management including warning and evacuation systems

The Coordination and Control Centre (CUCC, in its Spanish abbreviation) is a command and control center unique in Latin America. It has been designed and equipped with the latest technology allowing the City to coordinate rapid and integrated responses from all agencies for any type of disaster: flooding, police incidents complexes or health emergencies. The Centre has a modern computing platform and communications system for the exclusive use of the security forces and emergency. It was created to coordinate the actions of civil, emergency, traffic and police agencies by working with information from ongoing monitoring of the main access roads to the city, parks and public spaces. It works, as well, receiving phone calls from neighbours to immediately activate all necessary resources for each emergency.

More extreme precipitation events

Action: Crisis management including warning and evacuation systems

The Ministry of Environment and Public Space started the creation of an early warning system, which will provide underground information in real time on rainfall and storm effects in different neighborhoods of the City. It will be equipped with water level sensors (limnigraphs) located in rainfall drainage systems which shall provide data showing the amount of water concentrated in relation to pipe capacity during heavy rainfall events.

Increased frequency of large storms

Action: Survey and pruning

The task involves pruning, in two times of the year, coincided with the official ban which is set annually according to phenological observations of the state of the different species; the removal of dead and in risk trees, and root pruning that cause damage to public space and / or private property. Regarding the Public Trees Master Plan, a census on trees alignment and those in green spaces has been completed, allowing the City to have quantitative and qualitative information of trees, which can be broken down to neighborhood, municipality or watershed. From this survey it appears that the city has 368,202 trees, and that the most representative example would be an American ash, 8 feet high, with a trunk diameter (at 1 meter height) of 30 inches, with little lean, healthy and with good vitality.

Buenos Aires City is currently working on fixing previous shortcomings of misleading projections. At the moment, the city doesn't have an emergency action plan but aims to in the long term.

Flooding is Buenos Aires City's main weather-related problem. In this sense, the Ministry of Environment and Public Space started the creation of an early warning system, which will provide complementary information to the main weather alert network. The new system will provide underground information in real time about rainfall and storm effects in different neighborhoods of the City.

The potential consequences of climate change are especially critical in developing countries, particularly if we consider that the level of vulnerability is related to the ability of social groups to absorb the effects of these changes—that varies according to the possibilities of having technology, infrastructure and appropriate means.

Adaptation is a key core policy on climate change, as it allows to directly address local impacts on the most vulnerable sectors of society, allowing the city to be prepared for the possible effects of climate change in the best way possible, reducing their impacts and their costs while taking advantage of opportunities.

Although the city has already taken the first steps on adaptation, it is vital to have a comprehensive Risk Assessment Urban, thereby strengthening its three pillars (disaster, institutional and socio-economic assessment) in order to develop a long-term strategy, prioritizing preventive actions. Thus the city of Buenos Aires was invited by the World Bank to take part in a preliminary stage, of their Mayor Task Force initiative. In this framework, the Environmental Protection Agency coordinated the launch of a workshop, including every city department directly or indirectly related to risk and vulnerability issues. This first workshop allowed the different areas to understand the importance of having a comprehensive Urban Risk Assessment as a starting point to develop an adaptation strategy, working at an inter-ministerial level.

4 Social risks

Buenos Aires faces social risks as a result of climate change.

Increased incidence and prevalence of disease

Hotter and longer summers are expected to cause an impact on human health regarding heatwaves and plagues.

Increased risk to already vulnerable populations

Social impacts on spontaneous settlement's near the river, especially due to flooding, are expected. As a consequence material losses, sometimes including housing losses causing settlements to relocate will take place.

Increased resource demand

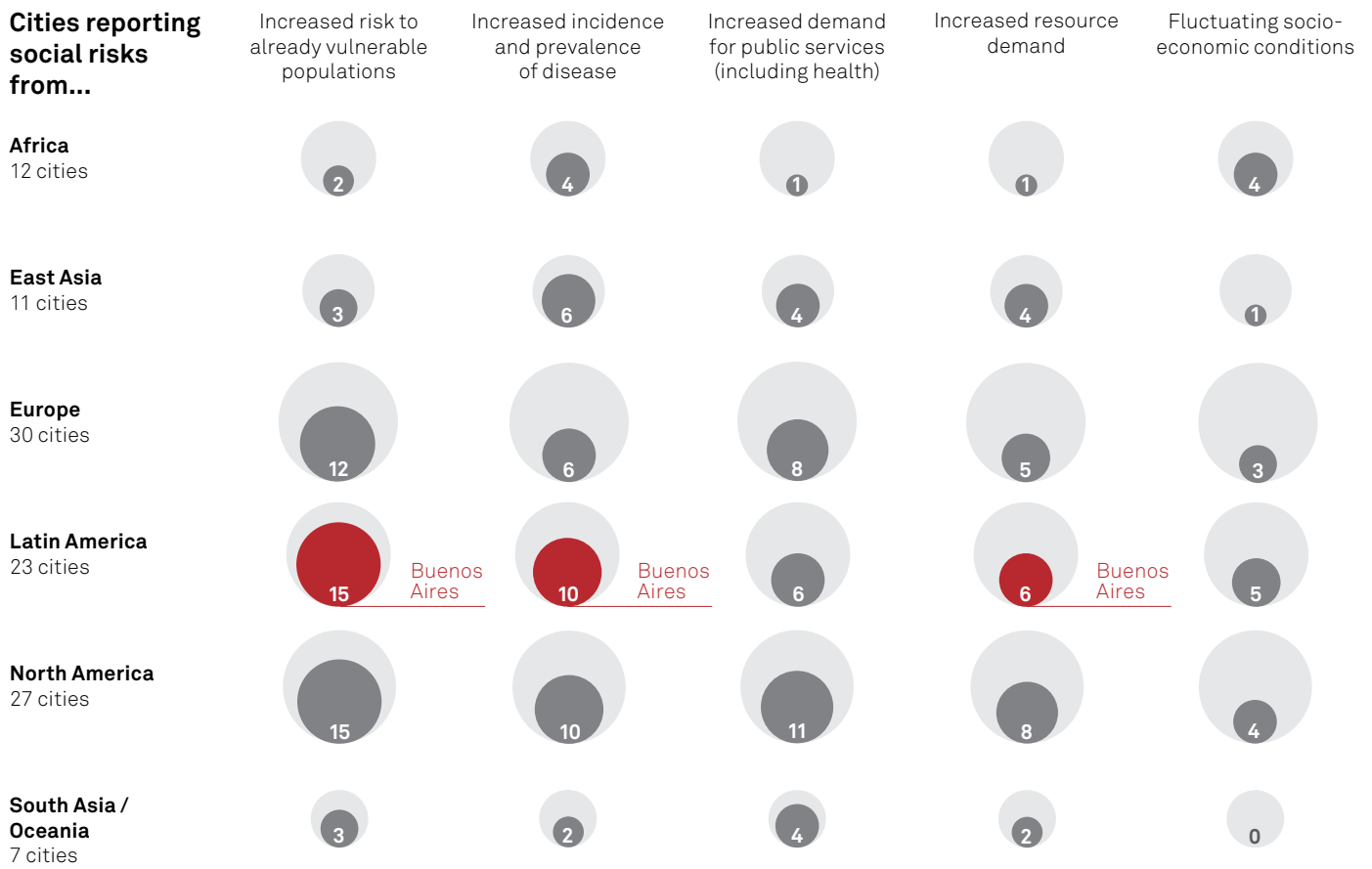
Hotter and longer summers are expected, generating an impact on human health as well as an increase on energy consumption and demand.

Population displacement

As a consequence of an increase in extreme precipitation events, such as Rainfall over 100 mm in 24 hours and Rainfall over 60 mm in 1 hour, impacts such as evacuations and material losses are expected.

Top five social risks

By region, # of cities



5 Opportunities

Climate change action presents economic opportunities for Buenos Aires.

Additional funding options

Currently, there is an increase in access to international cooperation, especially on adaptation projects.

Increased attention to other environmental concerns

The City of Buenos Aires is putting a lot of efforts in modifying existing behaviours which are an obstacle to sustainable development. In this regard, raising awareness strategies are the essence. The Government promotes programs and projects that, from a cross disciplinary approach; contribute to the promotion of environmental rationality. For this, several activities have been organized, which aim at rising awareness around the issue of climate change, specifically, and environmental protection, in general.

Opportunities

Development of new business industries (e.g. clean tech)

Electricity costs in Argentina for the last decade have been low because of subsidies. In the short term, energy efficiency and renewable energy projects become more viable as subsidies are reduced and energy demand keeps increasing, making different alternatives more attractive.

Improved efficiency of operations

In the long term, both, government and community save money through energy efficiency and transit improvement.

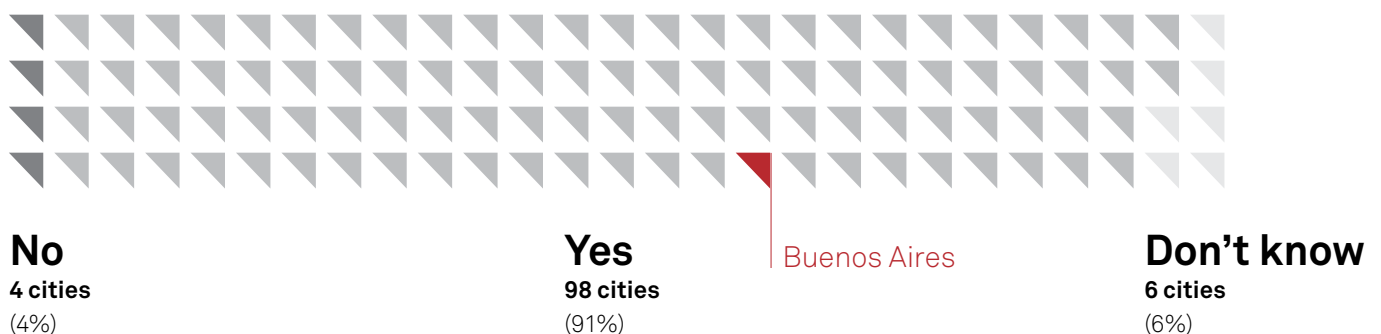
Increased green entrepreneurship

In the long term, tourism attraction is expected to increase.

Green jobs

In the medium-term, green jobs, especially in energy efficiency and sustainable construction are expected.

Cities that report climate change presents an economic opportunity # and % of cities



LGO Date and boundary

Buenos Aires is reporting a GHG measurement inventory for a period of one year for local government operations.

Fri 01 Jan 2010 – Fri 31 Dec 2010

Boundary typology used for Buenos Aires's GHG emissions inventory:

Companies, entities or departments over which operational control is exercised

Emissions – Local Government Operations

LGO Emissions data

The following major sources of emissions are included in Buenos Aires's municipal GHG emissions inventory:

Buildings

Buses

Electricity generation

**Electricity transmission
& distribution**

Local trains

Municipal vehicle fleet

Regional trains

Roads / highways

Street lighting and traffic signals

Subway / underground

Waste collection

Water supply

Buenos Aires has used a proprietary methodology to calculate GHG emission.

It was elaborated by the Buenos Aires EPA, using the Ghree platform, provided by EMS software, which was developed by external consultants together with a National University using, primarily, ICLEI methodology. The methodology for its preparation was divided into different stages:

Obtaining selected information

Processing of the received data

Loading of data into software

The conclusions drawn from this process

In order to obtain the correct information, the EPA identified the different sectors to be included in the inventory and selected the accurate data to calculate GHG emissions. When identified the bodies responsible for providing the necessary information, the data was requested.

When organizing information, the information was given in a hierarchical order as follows:

Field (I.e. Community)

Sector (I.e. energy consumption)

Category (I.e. Power consumption)

Sub category (I.e. Power consumption for residential)

When representing the GHG emissions produced within the Government Sector the following categories were elected:

1. Buildings and other facilities:
this category includes electricity consumption and gas consumption. Both categories cover all public buildings belonging to the City's Government, including schools, hospitals, administrative buildings, cultural centers and participation centers.

2. Street lighting and traffic signals: this category includes electricity consumption. This consumption includes all energy used for street lighting, parks, traffic signs, including traffic lights and power consumption of different fountains and monuments in the City.
3. Fleet Vehicles: this category includes fuel consumption from vehicles under the Government's control. Fossil fuel consumption has been divided into two subcategories, gasoline and diesel fuel consumption.

The data was processed by using the software EMS, which calculates GHG emissions, converted to carbon dioxide equivalent using information on energy consumption for activities (fuel, natural gas and electricity), emission factor, calorific power and density of energy used.

For the local government operation inventory, the methodology used in Buildings and other facilities sector in relation to energy consumption, was the one used for the Community Inventory. That is, stating the KWh/year consumed by all the buildings under the Government's control, and multiplying by the emission factor developed by the National Environmental and Sustainable Development Secretariat. As for gas consumption emissions, m^3 of gas consumed, value of calorific power of natural gas, density of the gas and its emissions factor (IPCC 2006 default) were considered in the equation.

For the street lighting and traffic signals sector, KWh/year consumed were multiplied by its corresponding emission factor of the grid.

For the Fleet vehicle sector's emission calculation, the equation considered the fuel used (assorted by type of fuel), the calorific power of each fuel, density of each fuel and its emissions factor.

Even though the City used a proprietary methodology, with the assistance of private consultants, the International Local Government GHG Emissions Analysis Protocol (ICLEI) was frequently consulted.

A different emission factor of the grid than the one developed by the Environmental and sustainable development secretariat was used. This new emission factor was recommended by external consultants to avoid double counting. The emissions associated with electricity consumption are then indirect, being the direct emissions generated to produce electricity which is then consumed by various users. Buildings under government's control include administrative offices, hospitals, public schools, museums, Community Participation Centers and cultural centers. The electricity stated as consumed by official building includes national government's buildings, building associations, among others as well as electricity consumed for water treatment and distribution, as it can't be disaggregated by the energy supplier.

Total amount of fuel consumed by Buenos Aires's local government operations during the reporting year:

Diesel / Gas oil

77

TJ

Naptha

12

TJ

Natural gas

1,607

TJ

Electricity, heat, steam, and cooling that has been consumed by Buenos Aires's local government operations during the reporting year:

Electricity

1,491,085
MWh

Total (Scope 1 + 2) emissions for Buenos Aires's local government operations:

552,541
metric tonnes CO₂e

Breakdown of Buenos Aires's GHG emissions by scope:

Scopes are a common categorization method. Scope 1: All direct GHG emissions (with the exception of direct CO₂ emissions from biogenic sources). Scope 2: Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

Total Scope 1 activity

103,725
metric tonnes CO₂e

Total Scope 2 activity

448,817
metric tonnes CO₂e

Buenos Aires does not measure Scope 3 emissions for local government operations.

There is no information on employees commuting and waste generated by local government's operations.

A new Separate Waste Recollection Pilot Program is taking place in government's buildings, but there are no plans for the time being of quantifying waste generation. For that reason, the Waste Sector is only included in the Community Inventory.

On the other hand, there are plans of measuring emissions for employees commuting at least for EPA's employees. These emissions will be then subtracted from community transport emissions to avoid double counting.

Breakdown of these emissions by department, facility, greenhouse gas (CO₂, CH₄, N₂O etc) or by any other classification system used:

Buildings and other facilities (Scope 1)

97,101
metric tonnes CO₂e

Buildings and other facilities (Scope 2)

383,397
metric tonnes CO₂e

Street lighting and Traffic Signals (Scope 2)

65,419
metric tonnes CO₂e

Fleet Vehicles (Scope 1)

97,100
metric tonnes CO₂e

During the year 2009 the city developed the Climate Change Action Plan, together with the update of the GHG Inventory, during the period 2000–2008. The update was performed by Buenos Aires EPA, using for the general structure and for the transport sector in particular, the software Project 2 Degrees from the Clinton Foundation developed by Microsoft, Ascentium, ICLEI and CNT.

In December 2010, the City signed an agreement with a National University and a Consultancy firm, in order to update the Inventory. After a long process in order to collect, analyze and process the data, the City recalculated its GHG emissions for the period 2000–2010, using an improved methodology using ICLEI Local Government Protocol.

According to last year questionnaire, we do not have updated values to report. As we have been working in methodology adjustments, you can see small differences in the Inventory results, but we are still reporting 2000–2010 emissions.

Regarding total GHG emissions evolution, we can see an increase of 8.8% for the whole period between 2000 and 2010.

However, in order to analyze annual changes there are several factors to take into consideration when studying GHG emissions in a city, such as demographic growth, commuters, temperature variations and economic fluctuation, among others. For example, the deep economic crisis that hit the country in 2001, causing a contraction in energy consumption (at a residential, commercial and industrial level), explain in part the observed decline in emissions between year 2000 and 2002, of around 4.9%. On the contrary, between 2005 and 2007 there have been a sharp increase in GHG emissions (around 8.3%), due among other reasons, to an increase in energy consumption because of high maximum temperatures during the summer and low minimum temperatures during the winter.

That is why, even though we do not have updated values to report, the city have done a thorough analysis in order to identify key sectors which might have an important effect on GHG emissions.

C External verification

The GDG emissions data that Buenos Aires is currently reporting has not been externally verified or audited.

The emission report doesn't go through a verification process but the City of Buenos Aires has an advisory council of experts to turn to. In the same line, the GHG emission report was developed together with external consultants who designed the software and verified the methodology and data input.

C Date and boundary

Buenos Aires is reporting a GHG measurement inventory for a period of one year.

Fri 01 Jan 2010 – Fri 31 Dec 2010

Boundary typology used for Buenos Aires's GHG emissions inventory:

Geopolitical Boundary

Defined as physical areas over which local government has jurisdictional control.

C GHG emissions data

Buenos Aires has used a proprietary methodology to calculate GHG emission.

Emissions – Community

Even though the City used a proprietary methodology, with the assistance of private consultants, the International Local Government GHG Emissions Analysis Protocol (ICLEI) was frequently consulted.

It was elaborated by the Buenos Aires EPA, using the Ghree platform, provided by EMS software, which was developed by an external Consultancy Firm together with a National University.

The methodology for its preparation was divided into different stages:

Obtaining selected information

The processing of the received data

Loading of data into software

The conclusions drawn from this process

In order to obtain the correct information, the EPA identified the different sectors to be included in the inventory and selected the accurate data to calculate GHG emissions. When identified the bodies responsible for providing the necessary information, the data was requested.

Organizing information

The information was given in a hierarchical order that was organized as follows:

Field (I.e. Community)

Sector (I.e. energy consumption)

Category (I.e. Power consumption)

Sub category (I.e. Power consumption for residential)

To represent the GHG emissions produced within the Community sector the following categories were elected:

1. Energy consumption

2. Transport

3. Waste (Scope 3)

4. Water treatment (Scope 3)

1. Energy consumption

This category includes electricity, natural gas and diesel consumption. It is divided in 3 sub-categories: residential, commercial and industrial.

2. Transport

This category includes different means of transport, both private and public, which were considered representative at the time of accounting GHG emissions.

Private transport:

- Private cars (including vans), taking into consideration the kind of fuel used: gasoline, diesel or natural gas.
- Duty traces (light and heavy), taking into consideration the kind of fuel used: gasoline, diesel or natural gas.

Public transport:

- Buses, with diesel engines
- Taxis, including diesel and natural gas
- Subway, operating through electric power
- Trains, including those running with electric power as well as those using diesel engines.

3. Waste (Scope 3)

This category includes the amount of Municipal Solid Waste generated (taking into consideration residential and urban solid waste) in Buenos Aires during the reporting year, as well as its composition.

- Food waste
- Pruning and garden waste
- Wood
- Textile
- Paper and cardboard
- Glass, plastic, metal and others.

4. Water treatment (Scope 3)

This category includes the energy consumed (KWh) for treating and providing drinkable water to the City.

The data was processed using the software EMS, which calculates GHG emissions, converted to carbon dioxide equivalent using information on energy consumption (fuel, natural gas, electricity) for activities, emission factor, calorific power and density of energy used.

For the community inventory, the methodology used in the Energy Sector was the one used for the Government operation inventory. That is, stating the KWh/year consumed by the 3 sub categories, and multiplying by the emission factor of the grid. As for gas consumption, m^3 of gas consumed, calorific power of natural gas, density of the gas and its emissions factor (IPCC 2006 default) were considered in the equation.

For the private transport sector and buses, GHG emissions were calculated using the EMS software, which required, for each sub categories within the sector, the amount of circulating cars by type of fuel consumed and the amount and type of fuel sold in the city. Fuel consumed by industries and government's fleet was subtracted to the amount of fuel sold leaving amount of fuel consumed by vehicles.

For the other public transport sector, trains and subways, GHG emissions were calculated from electricity and diesel consumed when travelling within the city. Kilometers travelled and energy consumption data was obtained from the National Regulatory Commission of transport, and Metrovías (Subway grant company).

For the Waste sector, the methodology used was one developed by the Intergovernmental Panel of Climate Change (IPCC), “Tool to determine methane emissions avoided from disposal of waste at a solid waste of disposal site”. In order to apply this methodology, it was necessary to obtain both the amount of Municipal Solid Waste (MSW) generated in the City of Buenos Aires in each of the years considered in the inventory, as well as their composition.

For the Water treatment sector, the energy consumed is calculated multiplying the amount of water supplied (m^3) and the energy consumed per m^3 of treated and distributed water.

Total (Scope 1 + 2) emissions
for Buenos Aires:

9,813,933
metric tonnes CO₂e

Breakdown of Buenos Aires's
GHG emissions by scope:

Scopes are a common categorization method. Scope 1: All direct GHG emissions (with the exception of direct CO₂ emissions from biogenic sources). Scope 2: Indirect GHG emissions associated with the consumption of purchased or acquired electricity, steam, heating, or cooling.

Total Scope 1 activity

6,813,214
metric tonnes CO₂e

Total Scope 2 activity

3,000,718
metric tonnes CO₂e

Breakdown of these emissions by end user, economic sector, IPCC sector, GHG or any other classification system used:

End user: buildings, water, waste, transport. Economic sector: residential, commercial, industrial, institutional. IPCC sector: stationary combustion, mobile combustion, industrial processes, waste. Greenhouse gas: CO₂, CH₄, N₂O etc.

Residential

3,723,716
metric tonnes CO₂e

Commercial

1,748,421
metric tonnes CO₂e

Industrial

625,494
metric tonnes CO₂e

Transport

3,716,301
metric tonnes CO₂e

Total amount of fuel consumed in
Buenos Aires during the reporting year:

Diesel / Gas oil

31,454

TJ

Naptha

21,315

TJ

Liquefied Natural Gas (LNG)

8,534

TJ

Natural gas

51,995

TJ

Electricity, heat, steam, and cooling that has been consumed by Buenos Aires during the reporting year:

Electricity

10,090,481
MWh

Buenos Aires measures
Scope 3 emissions.

Waste

1,284,204
metric tonnes CO₂e

Buenos Aires has no landfills within the geopolitical boundaries of the City; that is why MSW is sent outside the city, to the metropolitan area. The methodology used to calculate its GHG emissions was one developed by the Intergovernmental Panel of Climate Change (IPCC), "Tool to determine methane emissions avoided from disposal of waste at a solid waste of disposal site".

In order to apply this methodology, it was necessary to obtain both the amount of Municipal Solid Waste (MSW) generated in the City of Buenos Aires (including commercial and industrial waste) in each of the years considered in the inventory, as well as their composition. Data on amount and composition of waste was available for residential and urban waste generated in the City. The GHG emissions from Municipal Solid Waste generation, avoided through CDM projects on landfill methane capture, were undermined.

Water treatment and transport

81,312
metric tonnes CO₂e

Drinking water is treated in Buenos Aires City boundaries. However, the City Government does not manage the water treatment and distribution plant. Considering the local government is not involved, in this case, in management decisions, it was calculated in scope 3.

During the year 2009 the city developed the Climate Change Action Plan, together with the update of the GHG Inventory, during the period 2000–2008. The update was performed by Buenos Aires EPA, using for the general structure and for the transport sector in particular, the software Project 2 Degrees from the Clinton Foundation developed by Microsoft, Ascentium, ICLEI and CNT.

In December 2010, the City signed an agreement with a National University and a Consultancy firm, in order to update the Inventory. After a long process in order to collect, analyze and process the data, the City recalculated its GHG emissions for the period 2000–2010, using an improved methodology using ICLEI Local Government Protocol.

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Regarding total GHG emissions evolution, we can see an increase of 8.8% for the whole period between 2000 and 2010.

However, in order to analyze annual changes there are several factors to take into consideration when analyzing GHG emissions in a city, such as demographic growth, commuters, temperature variations and economic fluctuation, among others. For example, the deep economic crisis that hit the country in 2001, causing a contraction in energy consumption (at a residential, commercial and industrial level), explain in part the observed decline in emissions between year 2000 and 2002, of around 4.9%.

On the contrary, between 2005 and 2007 there have been a sharp increase in GHG emissions (around 8.3%), due among other reasons, to an increase in energy consumption because of high maximum temperatures during the summer and low minimum temperatures during the winter.

That is why, even though we do not have updated values to report, the city have done a thorough analysis in order to identify key sectors which might have an important effect on GHG emissions.

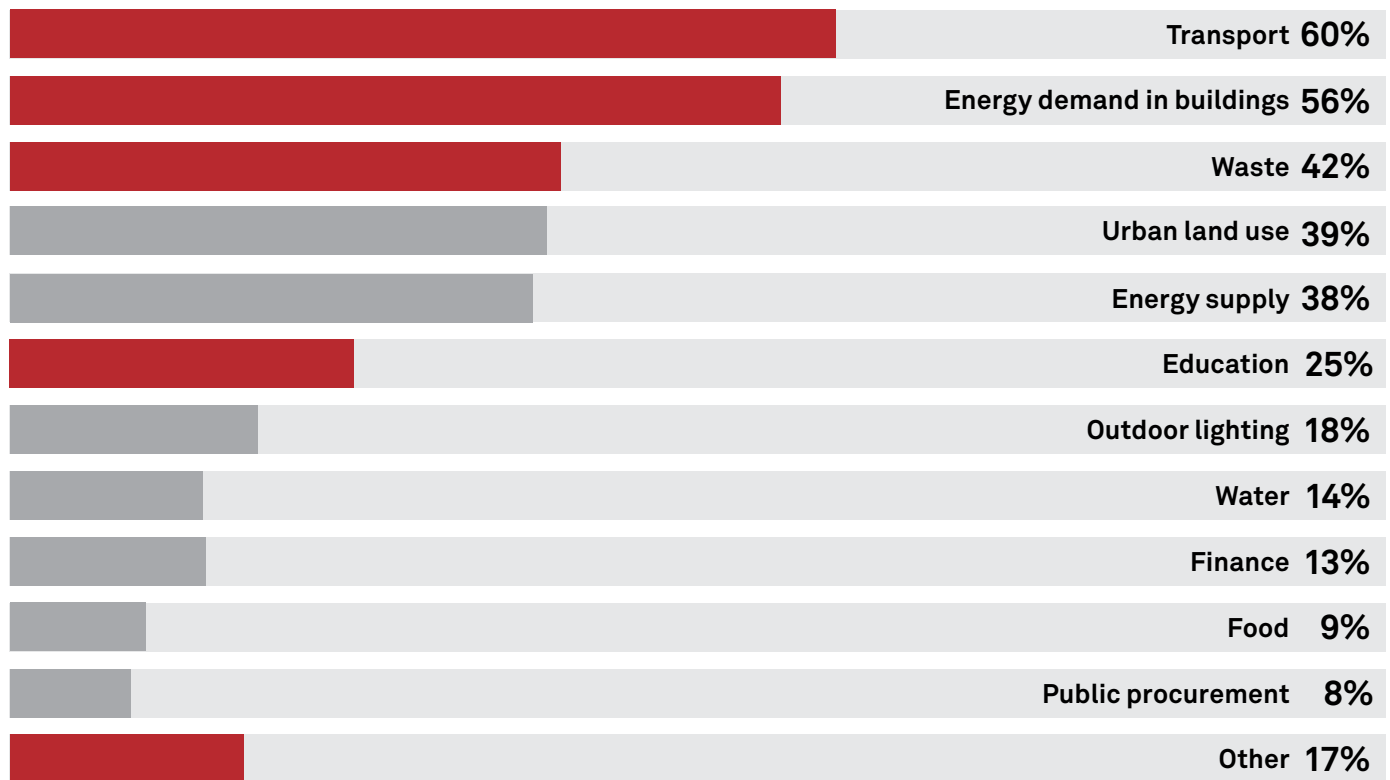
C External verification

The GDG emissions data that Buenos Aires is currently reporting has not been externally verified or audited.

The emission report doesn't go through a verification process but the City of Buenos Aires has an advisory council of experts to turn up to. In the same line, the report was made together with external consultants who designed the software and they verified the methodology and data input.

Cities reporting city-wide reduction activities

By category, % of cities



Strategy

6 Local government operations – GHG emissions reduction

Buenos Aires has a GHG emissions reduction target in place for local government operations.

Buenos Aires's local government operations and community wide GHG emissions reduction target in detail:

Baseline year

2008

Baseline emissions

11,267,090
metric tonnes CO₂e

Percentage reduction target

5%

GHG sources to which the target applies

**Energy, transport
& waste**

Target date

2015

During 2012, the city government worked in order to establish partial GHG reduction targets to achieve the long term goal published in the Climate Change Action Plan in 2009. As a result, the city expected to achieve in 2015 a 5% reduction from 2008 emissions, taking into consideration total emissions (altogether in Community and Government emissions).

Baseline year

2008

Baseline emissions

11,267,090

metric tonnes CO₂e

Percentage reduction target

30%

GHG sources to which the target applies

Energy, transport & waste

Target date

2030

After a thorough analysis of the various mitigation and adaptation measures, and after evaluating their potential GHG emission reduction, the City of Buenos Aires set as a global goal to reduce 30% of GHG emissions in 2030, considering 2008 as a baseline year. Even though, the inventory includes Government emissions and community emissions, the reduction goal was set as a whole. It's important to take into consideration that as Government's emissions are considerably lower than the Community emissions (just 5% of the city's total emissions), so is the reduction goal. The government aims to set policies to mitigate GHG emissions, while leading the city through the example

Activities undertaken to reduce Buenos Aires's emissions in its government operations and city-wide:

Energy Demand in Buildings

Energy efficiency /retrofit measures

The Environmental Protection Agency (EPA) has entered into agreements with 60 companies taking part in the Buenos Aires Cleaner Production Program (P + L), which aims at designing, implementing, and evaluating environmental improvement programs with commonly set objectives. These companies participating, currently entail electric energy reductions of up to 15%.

Promoting energy efficiency to reduce consumption, both in homes and shops and service companies: through the Program of Energy Efficiency in Homes, the City of Buenos Aires Bank grants 10% off in the purchase of air conditioners and fridges having "A" Energy Efficiency Labels.

Consistent with the City's Governments efforts to promote "cultural change" in the area of the City of Buenos Aires, the Environmental Protection Agency (APrA) has been working on two manuals of good environmental practices (including topics such as responsible consumption, sustainable mobility, efficient use of water and energy, etc.). These are targeted for two important sectors in terms of environmental impact and possibility of replication: companies and government.

Renewable on-site energy generation

The program on thermal solar energy in social housing started as a pilot test in 5 houses and a community centre of a low income neighborhood. The Environmental Protection Agency is currently undergoing the second stage of the program, consisting on the installation of more solar heaters (4 houses and 2 community centres) in another low income neighborhood.

During 2012 a Law to promote the use of solar energy (electric and thermal energy) in private buildings was enacted, but is not yet regulated.

Building codes and standards

Building represents one of the most significant sources of CO₂ emissions. Consequently, the encouragement of sustainable building is one of the other important aspects we need to address. We have realized there is an important information gap in this sense, and we therefore feel that our greatest responsibility is to create awareness throughout society, especially amongst those involved in the construction business, and to promote sustainable construction principles and criteria. To this end, we have been offering courses, lectures and seminars related to different aspects of sustainable buildings, as well as organizing contests

In terms of sustainable construction promotion by modifying building codes, in December 2012 the City sanctioned an Act on thermal conditioning standard incorporating reforms related to thermal insulation in the Building Construction Code.

Finance

Clean technology funds

The Agency, together with the City of Buenos Aires Bank, grants credits with subsidized rates to SMEs (small and medium enterprises) working on environmental improvement projects. Moreover, within the framework of the incentives program, the Agency is working since 2008 in the granting of non-refundable contributions for SMEs working towards more sustainable production (29 have been granted since 2008 with a max. of 60,000 Argentinean pesos per project)

Bearing in mind the benefits of a city with less private cars and more bicycles, regarding travel time, air quality, population health, among others, the city has launched zero interest rate loans for bike purchase.

Adaptation infrastructure finance

In December 2012, the City Legislature passed a Law on Green roofs or terraces, which provides benefits for those owners who carry out these initiative, more specifically, it grants discounts in lighting, sweeping and cleaning taxes (not yet regulated).

Transport

Improve fuel economy and reduce CO₂ from motorized vehicles

Ecobus (hybrid vehicle): A prototype has already been built, and it is the first hybrid electric bus developed in the country. Currently it is the only bus circulating, eventually, the city's plan is to launch a gradual replacement of circulating buses. The hybrid electric Ecobus reduces emissions of particulate matter by 75%, of carbon monoxide by 55%, and of greenhouse gas by 40%, while it consumes 40% less of fuel, encouraging research and development in cleaner technologies for transportation.

Improve bus transit times

The City Government started implementing a network of exclusive lanes for bus and taxi circulation in order to reap the benefits of these forms of transportation while addressing the issues that have traditionally undercut their effectiveness. Travel times are expected to improve and fuel efficiency can increase up to 10%. This change in circulation follows the environmental urban plan (a law passed by the local legislature unanimously), and also implies transforming one-way avenues into two-way ones, in order to increase passenger flow. In fact, an immediate result of this program has been journey time reduction. Preferential lanes for public transportation and counter-flow lanes do account for the reduction of 10% to 35% of journey time reduction.

BRT (Bus Rapid Transit) uses dedicated bus lanes, fewer stops, time-saving technologies, and additional efficiency measures to make bus travel fast, reliable, and effective. The first BRT lane was inaugurated on 2011 and it is 12.5km long. Currently, a new line is being constructed, keeping in mind the 72km extension target by 2015.

Infrastructure for non-motorized transport

Cycling offers an environmentally-friendly and space-efficient way to travel around the city. It is an emission-free, low-cost travel mode that we seek to promote as part of our strategy to increase non-motorized transportation and decrease private vehicle use. The protected bike path network is currently a 100km long. Located at side streets, away from intense vehicular flows, the bike paths are increasingly being used by the population. The network has been designed to join strategic points of the City. Not only they do not contaminate and are one of the most economical means of transportation, while at the same time improving health: they also appear to be a fast means of transport.

The Buenos Aires Bicycle Program promotes the use of bicycles as an ecological, healthy, and fast means of transportation. This Program includes the creation of a protected bike path network and bicycle parking infrastructure, the implementation of a free biking system, the provision of road safety education, and the promotion for its use in the private sector as a real alternative for transportation. The biking system currently has 28 stations and more than 1,000 available bicycles. Launched at the end of 2010, today it has 60,000 registered users, with an average of 4,200 trips per day. As part of Corporate Social Responsibility Program more than 50 companies offer storage, lockers, and changing rooms for their employees, to encourage the use of the bicycle as a mean of transport to get to work.

Pedestrian priority areas: Pedestrian streets humanize public space and redefine it as a meeting point. With these goals, we defined pedestrian priority streets, widen and levelled sidewalks to encourage pedestrian traffic unimpeded. At the moment, in the downtown area, five pedestrian streets have been created.

Transportation demand management

In order to disincentive private vehicles from entering the City, highways tolls fares have been increased and segregated in rush and off-peak hours. In this line, since December 2011, tolls fares have increased four times. The last one, applicable from January 2013, will reach 10% increase in the fare, expecting to finance subway service.

Taxis, as well as public buses, drive on preferential lanes within the City and are allowed to enter the ban area for private vehicles, between 11 and 16hs.

Waste

Improve the efficiency of waste collection

The City is currently undergoing a transformation in the waste collection system. By early 2013, containers are expected to be installed in every corner of the City, which means the eradication of bags lying on the street.

Recycling or composting collections and/or facilities

Solid waste disposal is done outside city limits, where methane sequestration and treatment is performed. Still, we are committed to progressively reduce the total amount of waste sent to final disposal through the promotion of waste segregation programs and the encouragement of a local recycling market. The local Government is now working with urban recycling cooperatives, to which it provides transportation, uniforms, and mandatory registration cards. The collected material is transported into green centers (waste separation centers), which are operated by the cooperatives.

During 2012, the City has worked together with the Regional Government on the construction of a MBT plant (Mechanical Biological Treatment Plant) located within the landfill premises (outside the City boundaries). This plant is expected to treat 1000tn of waste per day, 310 day a year, diverting 400tn of organic and 200tn of recyclable waste per day. The launch is expected for January 2013.

The city now counts with 10 green centres, where waste classification takes place. Residents may take directly their recyclable waste. The City also counts with its first mobile and sustainable recycling collection point: Green mobile Center. It was designed especially for residents to dispose of certain residential waste streams and was built from a recycled container. It has 16 photovoltaic modules in 4 panels located on the roof that generate the energy needed to cover 100% of their energy consumption. It is lit, both internally and externally, with LED technology and has a green roof, covered with vegetation and native plants of the City. All these features allow the Center to work as an informative point to spread the existence and use of this technology, as a mean of mitigating the effects of climate change.

Waste prevention policies or programs

A program on public awareness campaigns to reuse, reduce and recycle, and sustainable consumption promotion is taking place, in order to reduce MSW generation and final disposal.

As from October 9th, 2012, supermarkets and autoservice, deliver only non-biodegradable bags which are certified in accordance with the provisions of the IRAM N ° 13610 and comply with the measures. 50% of the non-biodegradable bags delivered by these shops should be green and 50% black, so they can be used for source separation of household waste. The City's Law No. 3147 states that these shops will replace 100% of their non-biodegradable bags to biodegradable by October the 7th, 2013. These businesses must count, from October 2012, with incentive schemes through which to implement measures which ensure that their clients stop using non-biodegradable bags and start using reusable bags, cart or return their nonbiodegradable bags for recycling. In addition, they must have enough supply of reusable bags available for sale, in order to promote its use, and must implement recycling systems for non-biodegradable bags to ensure

Education

Climate change-focused curriculum

We are aware that the actions we are implementing are not enough to attain the behavioural changes we need in order to fight climate change. An enormous task lies before us, as we need all of the city's inhabitants to become aware of the responsibility that each of them has in reverting this trend. We are convinced that the government must preach through the example and firm commitment while leading the city of Buenos Aires along this process. Public awareness campaigns in different topic areas, to promote sustainable behaviour in general and inform the people about consequences of daily actions.

Since 2007, the Environmental Education Law (N° 1687) promotes environmental issues in the school curricula. It aims to create spaces where students study the environment and its complex interactions with political, social, cultural, economic and ethics aspects.

Schools should lead the example for sustainability, gathering students, teachers, and the rest of the school community to work towards the solution. The program Green Schools acts under three pillars: Energy efficiency, renewable energy and climate change, environmental health and integral waste management and consists of the calculation and reduction of their footprint.

Other

Subway network extension

The current network has six underground lines and a line of surface (Premetro), reaching a total length of 54.5km. It is estimated that the subway holds a 10% of all trips are made daily in the metropolitan area of Buenos Aires, carrying 1,300,000 passengers a day. The system has a good connection to the main railway lines, linking the major transshipment centers for the City of Buenos Aires. The Government of the City is currently undertaking extension works of the subway network with the aim of revitalizing it through enlargement. During 2012, 5 new stations were finished and next to be inaugurated. The City of Buenos Aires has made a record investment over the past four years in the expansion and modernization of public passenger transport.

Public awareness campaigns

Public awareness to reduce the use of automobiles together with different policies to achieve that goal, such as improving public transportation.

Social inclusion and environmental quality subsidies

A program for socio environmental initiatives is taking place in communities, which consists of the granting of nonrefundable contributions (subsidies) aiming at financing eco-friendly projects of production and infrastructure which help improve the standard of living in vulnerable communities. The contributions shall be of up to thirty thousand Argentine Pesos and their beneficiaries shall be non-profit organizations and cooperatives for projects entailing social inclusion and environmental quality.

Orientation centres

The Entrepreneur Orientation Centre works as a counselling center for those who wish to development an idea and / or business project “environmentally friendly”, or in strengthening a newly established venture aimed at an environment improvement and innovation.

Environmental care recognition

The Contest “Environmental Care Recognition in Small and Medium Enterprises (SMEs) of the City of Buenos Aires” aims to reward and disseminate best environmental management practices implemented voluntarily by those SMEs that meet environmental regulations. The winners can receive the Gold, Green or Green Plus distinction.

Carbon emission reporting, SMEs

As part of the initiative to support the private sector towards sustainable consumption and production, Buenos Aires EPA is developing the Carbon Footprint Program for SMEs (Small and Medium Enterprises), to be launched soon. The program’s goal is to encourage companies to reduce their GHG emissions accompanying them to an improvement in its management, by providing a tool that allows them to count their fuel consumption and emissions from their activities. After the carbon footprint calculation, the companies will implement the improvement plans suggested by the government. Currently, looking for funding to support the companies to invest in the improvements previously mentioned.

Anticipated lifetime emissions reductions reported by cities

By category (millions metric tonnes CO₂e)



Note that anticipated emissions reductions are difficult to estimate. This data therefore reflects a significant bias toward emissions reduction actions that are easier to quantify.

8 Planning

Climate change-related projects for which Buenos Aires hopes to attract private sector involvement:

Energy Efficiency in public Lighting – Stage 2

Buenos Aires aims to replace gradually the total amount of street lights and traffic signals with more efficient technologies, such as LED, solar panels for street lights and wind power.

Green Roofs – Stage 2

In a new stage of the project, the City is planning to build green roofs in 20 public buildings and 50 schools in order to expand urban green corridors.

Electric Bicycles

In order to avert future climate disruption from mobile source greenhouse gas emissions the City Government developed a strategy to achieve the level of mobility for the city and region need, improving and expanding public transportation, promoting sustainable modes of transportation, proactively reducing congestion, and introducing clean technologies and more efficient vehicles.

In this sense, the local Government plans to launch the introduction of electric bicycles. These bikes have a small electric engine and a rechargeable battery and can ride up to 40 km, with only one charge.

Some people need to get to work without making a previous physical effort, for which other means of transport exist, such as motorcycles, which, used in messenger and delivery companies, are known for their high level of noise during night hours. These bikes can be an answer for this kind of problems. The project includes green credits to promote the use of these bicycles instead of motorcycles in messenger and delivery companies.

BRT – Stage 2

As the results have been successful, and in not every part of the city, the subway extension is the best option because of the drainage pipelines, the extension of the BRT network is planned.

Hybrid Bus – Stage 2

In a second stage of this project, the City government seeks to encourage the bus companies to incorporate at least one hybrid unit per group and two units per line in the BRT.

Energy Efficiency Program in Public Buildings – Stage 2

In a second phase of the project the EPA seeks to complete the 1500 public buildings, with their respective energy consumption diagnosis, improvement plans and training for an Energy Manager responsible for each building.

Carbon Footprint Program for SMEs

As part of the initiative to support the private sector towards sustainable consumption and production, Buenos Aires EPA is developing the Carbon Footprint Program for SMEs (Small and Medium Enterprises), to be launched soon.

The program's goal is to encourage companies to reduce their GHG emissions accompanying them to an improvement in its management, by providing a tool that allows them to count their fuel consumption and emissions from their activities. After the carbon footprint calculation, the companies will implement the improvement plans suggested by the government. Currently, looking for funding to support the companies to invest in the improvements previously mentioned.

Risk and vulnerability analysis

As to improve the City's Adaptation capacity, it is really important to study vulnerability areas over GIS and mapping zones, as the baseline to set an efficient Adaptation strategy.

Buenos Aires does incorporate desired GHG emissions into the masterplanning for the city.

Buenos Aires set a Strategic plan in 2008 in order to achieve the following goals:

Environmental protection

Safeguard the environment and the health of the citizens of the City of Buenos Aires

Economic prosperity

Foster a prosperous, innovative and eco-efficient economy

Equity and health

Promote the development of a healthy, safe, and inclusive society

Taking into account that Buenos Aires is one of the largest cities in Latin America, the Government has decided to embark on a long-term effort to develop a comprehensive climate change adaptation strategy and reduce the City's contribution to global warming. This is why, through the sanction of Decree 137, the City's Action Plan on Climate Change was officially launched in December 2009.

In order to establish the Climate Change Action Plan as a State Policy, the Adaptation and Mitigation Climate Change Law was approved in the City Legislature in September 2011, with the objective of establishing actions, tools and strategies for Climate Change issues in the City of Buenos Aires, to reduce human vulnerability and natural systems, protect its effects and its benefits.

The Act defines the dissemination and communication strategies with the aim of ensuring access to information for all stakeholders. Likewise, we define the duty of the Enforcement Authority to promote public participation of stakeholders in pursuit of the definition of the best options for adaptation and mitigation, as well as the creation of an External Advisory Council, composed of experts in the field, to assist and advise the implementing authority, and the convening of a Ministerial Team, to coordinate between different departments the management of public policies related to the implementation of the law.

Buenos Aires has many different thematic programs (i.e. sustainable mobility, waste management, among others), which are all included in the Climate Change Act which connects and gathers all programs aimed at reducing greenhouse gases.

Buenos Aires set in 2009, when launching the Climate Change Action Plan, a long term strategy for emission reduction:

Reduction target

30%

Target date

2030

Nevertheless, the city government understands the importance of setting a short and medium term goal. That is why, as for August 2012 we embark on an interministerial effort in order to set the 2015 goal, while analyzing each action and its potential emission reduction.

The renewable energy strategy is included in the global goal, in the Energy sector. As a long term goal (2030), the city aims to generate 10% of the current electricity used in public sector with renewable energy and replace by clean energy 10% of commercial and industrial energy consumption.

Emissions from the energy sector account for 52% of total emissions in the city, which happens to be the greatest impact on GHG generation in the city. However, in this first target period to achieve in 2015, the city government focuses its actions primarily on awareness and training campaigns in order to encourage the use of clean energy while offering subsidies and financial incentives.

The strategy seeks to foster and promote the use of renewable energy sources while reducing energy consumption through energy efficiency promotion. The government aims to achieve this promotion through guidelines and training courses on one hand and through economic incentives on the other, in order to show the way while offering the tools to achieve the goal.

Even though GHG emissions from the official energy sector account only for 5% of the City's total emissions, mitigation measures in this sector are important as they act as an example to other sectors and show the Government's commitment towards Climate Change issues. The emission reduction target is expected to be accomplished, among others, with the implementation of renewable energies in public buildings. These measures include the use of solar energy (electric and thermal energy), hybrid external lights and wind energy, increasing progressively the amount of public buildings with these technologies.

9 Water

Buenos Aires does not foresee substantive risks to its water supply in the short or long term.

Buenos Aires city's consumption water is obtained from the Río de la Plata river and treated at the water treatment plant AySA. According to the experts, the Río de la Plata water is not expected to suffer salinization because of sea level rise, expected from climate change. In the same line, in the short term, the treatment plant is expected to be able to provide water to the increasing population. On the other hand, more and more residents prefer bottled water to tap water, which means different access opportunities to water quality, as bottled water is more expensive.

In the long term, an increase in energy demand may lead to cuts in the energy provision. As a consequence, a reduction in the water treatment plant capacity to treat and distribute drinkable water may take place.





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