

OCTOBER 2017

ENERGY EFFICIENCY BRIEF

Rosario, Argentina

INTRODUCTION

Greater Rosario is the largest city of the Santa Fe Province in Argentina and is located on the west bank of the Paraná River in the south of the province, about 300 km from Buenos Aires. Its 1.2 million inhabitants account for about 37% of Santa Fe's population and 3% of Argentina's population. The Province contributes about 10% of Argentina's GDP, which makes it Argentina's third largest provincial economy after the Buenos Aires Province and the city of Buenos Aires. Agriculture and manufacturing are the region's main contributors to national GDP and exports.

Rosario is a relatively modern city, founded in the 19th century, and is the industrial, commercial and financial center of the province. The port of Rosario is an important element of development that connects, through the Paraná waterway, the capital and the inland regions of the northeast of the country. Rosario has a temperate Pampean climate, which is hot from November to March (up to 40° C) and cold between June and August (down to minus 8° C). It rains more in summer than in winter.

Argentina's significant domestic natural gas and hydro resources has led to an electricity generation system based on these fuel sources, offering low electricity prices. However, declining gas production due to the exhaustion of resources coupled with growing energy consumption is emphasizing the importance of both diversifying energy supply and managing energy demand.

The city administration has a clear understanding that clean and efficient delivery of energy represents a major competitive factor for the local economy and the wellbeing of its citizens, so initiatives are taking place to minimize the energy needs of families and businesses.



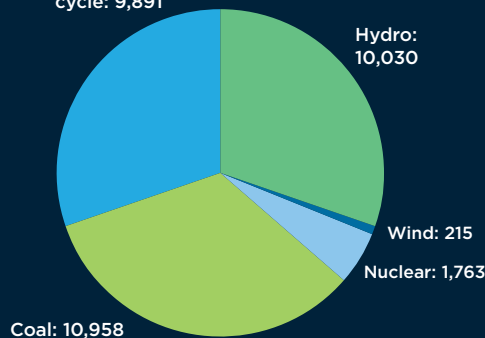
ROSARIO CITY PARTNERSHIPS AND COMMITMENTS

Rosario is a partner and an active member of several international initiatives that work to create more sustainable cities, including:

- Acting as Vice President of UCLG (The Global Network of Cities Local and Regional Governments);
- Acting as Vice President of the Sustainable Development and Climate Change of Mercociudades Network (*Red de Mercociudades*);
- The Inter-American Development Bank initiative on Emerging and Sustainable Cities;
- The Declaration of Cities' Commitment to the 2030 Agenda for Sustainable Development;
- The Compact of Mayors.

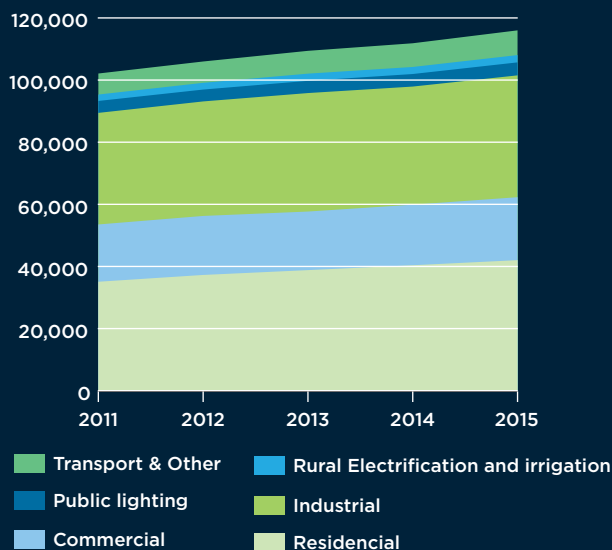
Installed Power capacity (MW) in Argentina in 2015

Natural Gas combined cycle: 9,891



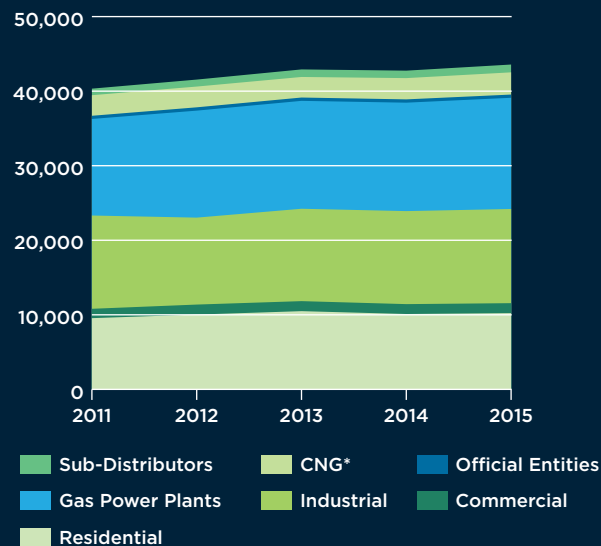
Electricity demand by main users in Argentina

GWh



Natural gas demand by main users in Argentina

Million m³



*CNG: Compressed Natural Gas

BUILDINGS SECTOR

"Our commitment is to reduce energy consumption throughout the City by ten percent."

Monica Fein, Mayor of Rosario

CURRENT STATUS

The city of Rosario was mostly built during the 20th century and, until recently, without any energy conservation regulations for the construction sector. Winters in Rosario are short and benefit from the heat island effect of the built-up areas, but summers typically have several days of high temperature, high relative humidity and heavy solar gains, giving rise to widespread reports of thermal discomfort inside Rosario's buildings. This effect has been compensated by the increasing installation and use of air conditioners, putting pressure on electricity systems, which have begun to experience significant supply shortfalls in recent years.

EXISTING INITIATIVES

Rosario is the first city in Argentina to implement energy efficiency measures during the building construction phase. The Sustainable Building Program (*Ordenanza N° 8757* from 2011, amended in 2013) prioritizes the passive design and energy efficiency of new buildings, addressing hydrothermal aspects and reduction of energy demand for heating and cooling.

Rosario has also put an energy efficiency plan in place targeting the use of solar water heaters in sports and community centres, as well as the installation of solar photovoltaic systems within public facilities and infrastructure developments.

PRIORITY OPPORTUNITIES

- Extend the existing *Ordenanza N° 8757* to energy efficient building components and systems, such as windows, hot water production systems and heating and cooling systems, could further improve the overall performance of new and existing buildings in Rosario.
- Consider the development of a buildings energy labelling system for consumer information at the point of purchase or renting property. The results of such programmes in the European Union have demonstrated higher value for money to more efficient homes.
- The development of training sessions and the furnishing of information to local construction professionals and material supply companies could facilitate the market penetration of energy efficient solutions.
- The public sector could continue to lead by example, aiming at nearly zero energy demand in new Rosario municipal buildings, as it may drive innovation and support the advancement of new building codes. Showcasing the results of energy efficiency interventions, in public and private buildings, for example at the Rosario City Hall, schools and sports centres, may further accelerate the adoption of such solutions in private buildings.
- Build models of green public procurement, namely on energy consuming products such as lighting, ventilation, heating and cooling, as well as office equipment.
- Opportunities exist for further enhancing the use of renewable energies in heating systems and electricity supply of public and private buildings, especially hot water production and solar photovoltaic generation for local use.

INDUSTRY SECTOR

CURRENT STATUS

Rosario is home to a strong base of industrial activity and serves as the main commercial hub between the capital of the country and the provinces. The manufactured products of agricultural and livestock origin account for more than 75% of international exports from the Province of Santa Fe. Moreover, agricultural machinery manufacturing, which provides the necessary equipment for agricultural use, is another important industry in the city.

EXISTING INITIATIVES

Rosario has developed a green label for small and medium sized enterprises (SMEs) with good environmental performance in the city. Through its *Sello Verde* Program, Rosario recognizes the companies that comply with the legal environmental obligations; develop capacity-building actions; have an energy efficiency manager; monitor their energy and water consumption; have an appropriate residues disposal plan; and have an improvement strategy.

The municipality of Rosario is also actively developing and providing environmental best practice guides targeting the industrial sector, and publications are available for the ice cream production industry, the meat industry, the food processing industry, the printing industry, and vehicle repair shops.

PRIORITY OPPORTUNITIES

- Further dissemination of the *Sello Verde* initiative is encouraged among SMEs. Promoting benchmarking may stimulate the adoption of environmentally sound actions by other companies.
- Compliance with ISO 50001 or other energy management systems could also be added to upgrade the *Sello Verde* initiative for companies to better identify energy efficiency opportunities and to increase the adoption of energy efficient solutions.
- Knowledge exchange and capacity building with other industrial associations relevant in Rosario are encouraged, especially for the development of further Best Practice Guides and of training sessions targeting specific industries.
- Dissemination of information on cross-sectoral technologies, such as minimum energy performance standards for motors and drives, could also be enhanced, as they are applicable in multiple industries and even in commercial buildings.
- Encourage the development of local Energy Services Companies (ESCOs) that can offer services on energy auditing, project development and investment support for energy efficiency solutions and technologies implementation.

TRANSPORT SECTOR

"We are moving towards sustainable mobility, improving waste treatment, promoting alternative energies and an economic and urban development matrix in favor of the most vulnerable social and environmental sectors."

Monica Fein, Mayor of Rosario

CURRENT STATUS

The Municipality of Rosario has a complex transportation system, consisting of an international airport, train lines, river ports and roads. Over the last decades, the economic development of the city has put strong demand on the transportation system, creating challenges to passenger and freight transport, as well as on local environmental pollution. The significant use of private motorized transport and old heavy-duty vehicles for freight transport has contributed to city traffic congestion and pollution. In response, the municipal transport authority has adopted a reorganizations plan and improvements in the city.

EXISTING INITIATIVES

The municipal transport authority is implementing an integrated plan aimed at the use of public transportation and non-motorized transport, and discouraging the use of private motor vehicles. The municipality has introduced a few bus lines using electric trolleybuses; implemented a bicycle-sharing system; and has developed optimization measures such as dedicated lanes for public transportation, new integrated ticketing and monitoring technologies, information displays for passengers, and pedestrian-centred design.

Rosario municipality has the second biggest public lighting area in Argentina, with about 86.000 street lights in place. The municipality is making a significant investment in the public lighting system introducing LED technologies and renovating high pressure sodium-vapor and metal-halide lamps. Besides being the most energy efficient, LED lighting can also ensure further safety and comfort to pedestrians and drivers.

PRIORITY OPPORTUNITIES

- Continue the diversification of transport fuels, namely by the electrification of the municipal fleet and further progress in the electrification of the public transportation system.
- Continue development of intermodal transport, including further expansion of the train system and its integration with the other means of transportation.
- Continue the implementation of urban development plans that reduce mobility needs, by carefully managing business precincts and reducing the parking areas in the city.
- Continue the development of bicycle lanes in the city and increase the number of shared bicycles in service.
- Consider the introduction of a congestion charge and the removal of combustion engine-driven vehicles from the busiest city areas, through the development of mandatory efficiency standards and vehicle labelling directives.
- Consider subsidy schemes to replace old inefficient heavy-duty vehicles registered or circulating in the city.
- Offer information meetings and briefings on sustainable transportation targeting young audiences, for example, in schools and universities.
- Continue the deployment of LED lighting systems, to replace old fixtures in streets and public buildings.



The Copenhagen Centre on Energy Efficiency functions as the global thematic Energy Efficiency Hub of Sustainable Energy for All (SEforALL), and accordingly works directly to support the SEforALL objective of doubling the global rate of improvement in energy efficiency by 2030.

The Copenhagen Centre fulfils its mission through:

- assisting policy change in countries and cities, with knowledge, insights and technical support
- accelerating action through innovation in delivery models, public-private partnerships, finance and project development
- raising the profile of energy efficiency by communicating success and supporting outreach.

For more information, please visit www.energyefficiencycentre.org or contact us at c2e2@dtu.dk

Visit Copenhagen Centre's Knowledge Management System at kms.energyefficiencycentre.org

IN CONCLUSION

- The Municipality of Rosario is already a front-runner in Argentina considering the actions and policies it is implementing on energy efficiency. This path still has opportunities to be further enhanced as it may bring environmental benefits and improvements to the quality of life of the citizens.
- Increased data collection and monitoring of energy use can further help the evaluation of policies, programs and tools and contribute to increase energy efficiency locally.
- Capacity building and information dissemination across all sectors is needed and a local structure that could perform these activities could be of significant help in the implementation of the municipal policies on energy efficiency.
- The Rosario Municipal Government should consider further advancing work with the tools of the Global Covenant of Mayors for Climate and Energy to assess, target and plan energy efficiency, renewable energies and emissions reduction.
- The Copenhagen Centre on Energy Efficiency has a strong knowledge base on best practice energy efficiency, and is working with the City of Rosario to improve and support energy efficiency, helping the city to refine its strategy, define its priority opportunities, get connected with delivery partners and accelerate investments for implemented projects. For example, Rosario and the Network of Argentinian Municipalities Against Climate Change have the opportunity to partner with international initiatives such as the Sustainable Energy for All Global Energy Efficiency Accelerators for buildings and equipment. These sectoral-level initiatives also cover vehicle fuel efficiency, district energy, industry and appliances and lighting. It is anticipated that deployment projects and investments developed for Rosario will act as leadership examples that can be replicated in other cities willing to take action on energy efficiency.