ESSAYS

The Perfect Storm: Heat Waves and Power Outages in Buenos Aires

Valeria Procupez

In December 2013, and then again in mid-January 2014, thermometers in Buenos Aires hit their highest marks in over half a century. In relentless heat waves that affected almost all of Argentina, the city endured peaks of around 39ºC (102.2ºF) and a "real feel" of 47ºC (116.6ºF) due to persistent humidity.[1]

The duration of the heat waves set a historic record. The first one started on December 16, 2013, and lasted eighteen days, the longest since Buenos Aires began recording temperatures in 1906 (Villalonga 2014). Another heat wave hit in January 2014 and turned the month into the hottest January since 1961. Ever since Buenos Aires instituted color alerts, this was the longest period of consecutive days of red alert in the city (SMN 2014).[2] Authorities called for people to remain at home or in the shade, drink plenty of liquids, and wear hats and sunscreen.

And in tandem with these events . . . the lights went off. This outage was to yield yet another record in the history of the city, in this case regarding the length of the blackouts. Over two hundred thousand households, in which there were eight hundred thousand inhabitants, were left without electricity (*Infobae* 2013), in some cases for ten consecutive days and in others with recurrent power outages for as long as forty days. Blackouts were registered in over sixteen neighborhoods

1. According to the Servicio Meteorológico Nacional (SMN), the National Weather Service, under the Secretary of Science, Production, and Technology, a "heat wave" in Buenos Aires occurs when temperatures persist above a minimum of 22˚C (71.6˚F) and above a maximum of 32˚C (89.5˚F) for a period of more than three days (SMN 2014).

2. Color alerts regarding temperatures are issued daily by the SMN during conditions of extreme heat. The color indicates increments in the daily mortality risk, yellow being the lowest (a 10 percent increase) and red the highest (indicating a 60 percent increase).

Public Culture 28:2 DOI 10.1215/08992363-3427475

throughout the city, as well as in municipalities of the greater Buenos Aires metropolitan area (*InfoNews* 2013).

Initial frustrations and formal complaints to the authorities quickly fueled protests around the city. Technical crews failed to respond or, worse, proved unable to reestablish or sustain power supplies, and external generators distributed by energy companies were not enough to provide service for all the affected clients. Technicians reported severe problems in distribution, not just the overheating of wiring but also extensive damage to transformers and substations. No one offered convincing explanations of what was happening. Accusations flew back and forth among the national and local administrations (of opposing political affiliations), both of which claimed that the private sector was responsible for failing to invest in system upgrades to meet increased demand in the city (*InfoNews* 2013).

Extreme weather conditions and a sudden increase in power demand often lead to temporary blackouts (Harris 2011: 60–62). Buenos Aires has had its share of utility outages throughout the years, too, but the prolonged system outages in recent years have highlighted the underlying situation of an electrical grid already working at its limit capacity. The intense heat waves revealed a broader spectrum of shortcomings regarding energy in Buenos Aires, including a steady increase in demand that has not been matched by investment in supply, aging infrastructure, and a manifest inability to confront challenges such as those brought about by climate change.

.....

Argentina has one of the largest electricity systems in South America, with an electrification rate of almost 90 percent, an installed capacity in the public power grid of around thirty-three hundred megawatts, and a high per capita consumption (Enerdata 2013). When the system was privatized in the 1990s, during a period of neoliberal reforms, the previously state-owned electricity model was unbundled. Functions such as generation, transmission, and distribution were separated, which broke down vertical integration and combined ownership of production and distribution (Datamonitor 2011). While the other functions were open to a competitive market, distribution to clients was assigned to private companies as regulated monopolies. As a consequence, today clients cannot choose their provider, but prices are regulated (Recalde 2011; Haselip and Potter 2010).

Electricity provision for the city of Buenos Aires was divided between two distribution companies, Edenor and Edesur, which thus serve a captive market yet offer controlled prices. After the economic crisis of 2002 provoked the demise of the national government and the debt default, the incoming authorities issued a utility tariff freeze to prevent oscillation in energy prices from affecting house-

hold economies (De Santis 2013) and established a government subsidy to cover companies' operating costs. Since then, the economy has recovered and electricity demand in the city has soared, but subsidies have remained in place—even with increasing modifications—and clients in Buenos Aires pay the lowest rates in the country even though they consume a high percentage of the energy produced nationally (CEDEM 2014).[3] Some critics argue that the tariff freeze has discouraged the companies' investment in upgrades (De Santis 2013), since their earnings fell despite the sharp increase in demand. Others lament that within the current market structure, the government is unable to fully control commitments to invest in infrastructure (Recalde 2011). As an example, at the peak of the heat waves, the national government seized the administration of an underused fund it had created the previous year, with the aim of allowing Edenor and Edesur to perform repairs, maintenance, and upgrades to the grid.[4]

By the same token, the fragmentation and deregulation of the system have also complicated long-term planning. The high dependence of Argentine energy supply on thermal production—basically on natural gas—makes it vulnerable to the severe decline in reserve margins due to local consumption but also due to exports, which were only cut down around 2006, when the government decided to regulate them to protect local demand.[5] Some kind of centrally planned energy policy is needed that takes into account the various aspects of the system as a whole and makes provisions accordingly, such as diversifying production by developing renewable energy sources (Recalde 2011).

.....

3. The Argentine economy grew at a steady rate of 7–9 percent annually between 2004 and 2009, but it has since decreased due to the effects of the international financial crisis (Enerdata 2013). As the report by the Center for Economic Development (Centro de Estudios para el Desarrollo Metropolitano [CEDEM 2014]) notes, Buenos Aires's population constitutes 7 percent of the total population of the country, but electricity consumption reaches 12 percent. The same study indicates, however, that even though Buenos Aires has a per capita consumption rate of 4.1 megawatt hours compared to the national average of 2.5 megawatt hours, the city has a much larger population during the day than at night—since people come to work but do not reside in the city.

4. To raise money for the Fund for Works to Consolidate and Expand Electrical Distribution (Fondo de Obras de Consolidación y Expansión de Distribución Eléctrica, or FOCEDE), in 2012 the companies had been allowed to charge consumers a fixed amount with the specific purpose of performing repairs to the grid. When the government took over, it planned to increase the funds with contributions from other sources and force companies to perform over four hundred repairs or upgrades, raise the number of on-call work crews to solve emergencies, and maintain a twenty-four-hour call center to respond to customer demands (*La Nación* 2014).

5. Although the energy mix in Argentina comes from several sources, 60 percent of the energy produced is thermal (using nonrenewable fossil fuels—88 percent of which is natural gas), producing large emissions of carbon dioxide (CO_2).

A similar lack of coordination between programs carried out by different agents contributes to the failure of curbing consumption or making energy use in Buenos Aires more efficient. This adds to a pervasive *cortoplacismo*, or "collective short-term mentality" (Grimson 2004: 189), a trait that appears to guide not only policy making but also Argentines' attitudes and behaviors. Possibly the effect of recurrent experiences of uncertainty, this temporal frame of actions foregrounds immediacy and overlooks long-term planning (Procupez 2012: 166), leading to the overlapping of measures with conflicting outcomes and the stretching in time of temporary solutions. Below are some examples of how those different effects and behaviors combine into insurmountable disjunctions in the system.

Demand for energy in the city has grown steadily since roughly 2004, mostly due to economic growth in commercial activities and residential consumption (CEDEM 2014). However, the low price of energy for consumers has not encouraged energy saving, and different campaigns promoted by both the city and the national governments have not entirely succeeded in promoting a more rational use of electricity. Thus the indirect subsidies that have protected household economies for a long time might also be held accountable for the overuse of electricity (De Santis 2013). As expected, demand rises in periods of extreme weather (usually winter and summer months), as happened during the heat waves when it rose to the city's maximum power demand (around twenty-four thousand megawatts), much higher than for the same months the previous and following years (CNEA 2015).

Argentines have taken advantage of sustained economic growth to purchase appliances and other consumer goods. The government incentivized consumption, too, with programs that facilitated installment payments for certain products.[6] Since 2011, the sharp restrictions on purchasing US dollars (D'Avella 2014), combined with a generalized distrust in saving in the local currency, further encouraged spending. Air conditioners, which are emerging as a hallmark of First World modernity, are becoming massively popular, with sales increasing by a remarkable 36 percent in 2013. The increasing incidence and frequency of heat waves in Buenos Aires has made air-conditioning all the more popular (SMN 2014).

Recent economic prosperity has also propelled a construction boom in Buenos Aires, and weak regulation has led to indiscriminate construction of residential towers in some neighborhoods, building densification (D'Avella 2014), and a sig-

6. This could have been an opportunity to add an incentive to purchase high-efficiency appliances and thus contribute to the efficient use of energy, but it was also part of the uncoordinated efforts (Gil 2014).

nificant increase in electricity demand.[7] In some places, as many as half of the new buildings are "electric," meaning they lack connection to gas pipelines and depend on electricity as the only source of energy (*Clarín* 2014a).[8] Substations, however, have not been upgraded to sustain the higher demand, and many urban neighborhoods where construction was concentrated—such as Flores and Almagro—were among those most affected during the blackouts (*Página 12* 2014). Among more affluent residents, one popular response to these outages has been to purchase portable generators—the city has seen record numbers sold since 2013—yet this temporary solution contributes to an increase in CO_2 emissions, exacerbating the long-term problem of heat (*La nación* 2013). In all these examples, the unanticipated effects of uncoordinated measures and actions converge into the perfect storm of the blackouts.

.....

The local government reports that 56 percent of all emissions in Buenos Aires are from energy consumption, and in recent years, as part of its policy on climate change (Resolution 3.871, 2011), the city has designed programs to promote energy efficiency. It offers credits for local industry and service companies that improve efficiency and environmental protection. It has attempted to curb electricity consumption in public buildings, with the objective of achieving a 20 percent reduction. It has also established measures to reduce emissions in transportation and industry.

The national government, for its part, launched a program for the rational and efficient use of energy in 2007, which included an educational section to promote clean generation activities and labeling of appliances. In addition, it has declared its intention to increase the nation's share of renewable energy by 2016 and to invest in research and development of alternative energy sources (Enerdata 2013).

These initiatives, however, appear as discrete plans rather than integral parts of a coherent and coordinated national policy and are undermined by the unanticipated consequences of related developments in other policy domains. Despite promises to reduce Argentina's carbon footprint, CO_2 emissions from energy com-

7. Nicholas D'Avella (2014) nicely shows that the boom in construction was related to a notion of building as investment, in the sense of providing (relatively) stable assets—bricks—instead of the volatile Argentine currency.

8. Electric buildings are considered a "world tendency" because they are cheaper to build, require fewer certifications, and offer more possibilities for architectural design and because gas is a nonrenewable fuel that, in addition, is not particularly safe. However, the city does not seem to keep records of the permits it has granted for construction of this kind of building or to have made provisions to request the upgrading of infrastructure (*Clarín* 2014b).

bustion have been rising rapidly since 2002, reaching a level 80 percent higher than in 1990 (Enerdata 2013).

During heat waves, the problems with Argentina's infrastructure planning and climate change adaptation strategy become abundantly visible, and citizens respond with passionate protests. But when the weather cools so does popular outrage, and other urban issues—poverty, housing, inflation, corruption, even traffic—displace concerns about the climate. The city moves on as if global warming is a distant problem, until things heat up again.

References

CEDEM (Centro de Estudios para el Desarrollo Económico Metropolitano). 2014. "El consumo de energía en la Ciudad de Buenos Aires en 2013" ("Energy Consumption in the City of Buenos Aires in 2013"). Informe de resultados no. 633. Buenos Aires: Ministerio de Hacienda GCBA.

Clarín. 2014a. "Cada vez se construyen más edificios eléctricos" ("Increase in Construction of Electrical Buildings"). January 17.

———. 2014b. "Daños en la red eléctrica" ("Damage in Electrical Grids"). January 13.

CNEA (Comisión Nacional de Energía Atómica). 2015. *Síntesis del mercado eléctrico mayorista* (*Summary of the Wholesale Electricity Market*). March. Buenos Aires: CNEA.

Datamonitor. 2011. "Electricity Industry Profile: Argentina." London: Marketline.

D'Avella, Nicholas. 2014. "Ecologies of Investment: Crisis Histories and Brick Futures in Argentina." *Cultural Anthropology* 29, no. 1: 173–99.

De Santis, Juan Pablo. 2013. "Causas y responsables de los cortes del electricidad en Buenos Aires" ("Causes and Responsibilities for Electricity Outages in Buenos Aires"). *La Nación*, December 13.

Enerdata. 2013. "Argentina Energy Report." February. London: Enerdata.

Gil, Salvador. 2014. "Plan ahora eficiencia 12" ("High Efficiency 12-Installment Plan"). *Página 12*, October 1.

Grimson, Alejandro. 2004. "La experiencia Argentina y sus fantasmas" ("The Argentine Experience and Its Ghosts"). In *La cultura en las crisis latinoamericanas* (*Culture in the Latin American Crises*), edited by Alejandro Grimson, 177–93. Buenos Aires: El Consejo Latinoamericano de Ciencias Sociales (CLACSO).

Harris, Anne. 2011. "Avoiding Future Electricity Shortfalls." *Engineering and Technology* 6, no. 10, 60–63.

Haselip, James, and Clive Potter. 2010. "Post-Neoliberal Electricity Market 'Re-Reforms' in Argentina: Diverging from Market Prescriptions?" *Energy Policy* 38, no. 2: 1168–76.

Infobae. 2013. "Continúan los cortes de luz y la ola de calor amenaza con extenderse." ("Power Outages Continue and the Heat Wave Threatens to Extend"). December 29.

Infonews Tiempo Argentino. 2013. "El calor no cesa, los cortes de energía tampoco" ("Heat Does Not Cease, Neither Do Power Outages"). December 28.

La Nación. 2013. "Los precios y las claves para comprar un grupo electrógeno" ("Prices and Clues to Purchase Portable Power Generators"). December 18.

———. 2014. "Prometen obras en el sector eléctrico" ("Promises of Improvements in Electric System"). January 11.

Página 12. 2014a. "La demanda eléctrica sigue encendida" ("Electrical Power Demand Is Still On"). February 19.

———. 2014b. "Otro mes de caída en las ventas minoristas" ("Another Month of Decreasing Retail Sales"). February 18.

Procupez, Valeria. 2012. "Inhabiting the Temporary: Patience and Uncertainty among Urban Squatters in Buenos Aires." In *The Anthropology of Ignorance: An Ethnographic Approach*, edited by Casey High, Ann H. Kelly, and Jonathan Mair, 163–88. New York: Palgrave Macmillan.

Recalde, Marina. 2011. "Energy Policy and Energy Market Performance: The Argentinean Case." *Energy Policy* 39, no. 6: 3860–68.

SMN (Servicio Meteorológico Nacional, Argentina). 2014. "Informe especial debido a la ocurrencia de una ola de calor excepcional en Argentina durante Diciembre de 2013" ("Special Report Due to the Occurrence of an Exceptional Heat Wave in Argentina during December 2013"); "Informe especial debido a la ocurrencia de temperaturas extremadamente altas. Enero 27 2014" ("Special Report Due to the Occurrence of Extremely High Temperatures, January 27, 2014"). www.smn.gov.ar/serviciosclimaticos/clima/archivo/OlasdeCalor_BuenosAires.pdf.

Villalonga, Juan Carlos. 2014. "Camino al desastre" ("On the Way to Disaster"). *Los verdes* (blog), January 14. www.losverdes.org.ar/blog/?p=1238.

Valeria Procupez is a visiting scholar in the Department of Anthropology at Johns Hopkins University. Her publications include articles and book chapters on issues of social housing, urban infrastructure, and public policy in Argentina.