

SYSTEM

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POWER OUTAGES

blackout

Quito,
Ecuador,
November 5,
2009

Rio de Janeiro,
Brazil,
November 10,
2009

Watch

Analysis of system power outages can help us learn and avoid similar events in the future. If you have information on any blackouts, please e-mail to:

[http://editor@pacw.org](mailto:editor@pacw.org)

■ **Ecuador:** Rolling blackouts began to strike across the country as a severe drought has caused major water shortages at the Paute River Dam, which normally accounts for 40% of the nation's power. As of November 11, only two of the ten turbines were functioning and the dam, which normally supplies nearly 20,000 MW per hour, was putting out less than 5,000 MW. Blackouts from Quito to Guayaquil normally last from two to six hours at a time. The government instituted a power-rationing scheme to ease the disruptions which ended in January.



Punjab, India,
January 02,
2010

Nairobi, Kenya,
December 30,
2009

Zanzibar,
Tanzania,
December 10,
2009

■ **Brazil:** A massive blackout struck across 18 states of Brazil and neighboring Paraguay at approximately 10pm local time: The cause of the outage, which affected nearly 60 million people, was caused by the short circuit of three transmission lines from the Itaipu Hydroelectric Power plant. The collapse of the lines caused the plant to shut down for the first time in its history, and led to other power plants being shut down as a precaution. Major cities such as Rio de Janeiro, Sao Paolo, Belo Horizonte and Brasilia were all affected, with residents trapped in elevators, subways and suburban trains. Road traffic was also chaotic as the power outage darkened traffic lights before being restored after several hours.

■ **Tanzania:** A power blackout hit the semi-autonomous archipelago of Zanzibar, which is home to just under one million residents. The outage was apparently caused by

the breakdown of an undersea cable providing electricity from the mainland, which is said to be badly decayed and in need of replacement. With repairs not expected to be complete until late February, area homes and businesses have been forced to run on power from expensive generators for nearly two months.

■ **Kenya:** Another blackout struck most areas of Kenya, barely a month after a major outage left the country in darkness. Many are blaming the nations' over-dependence on thermal power generation, which is quickly becoming a major problem in this country of 39 million. According to Kenya Power & Lighting, two thermal generators at a substation near Naivasha, with a capacity of 60MW and 33MW respectively, failed at about 4:30am local time, leading to an interruption of the power supply to many parts of the country for nearly 4 hours.

■ **India:** Power was knocked across northern India after the tripping of the northern grid led to a disruption of power supply to the hydro and thermal power plants of the region. A technical problem in transmission lines may have been triggered by fog and cold weather conditions, leading to three train accidents and a disruption of air traffic. Electricity was cut in most parts of Punjab, Haryana, Himachal Pradesh, Jammu, Kashmir and Chandigarh for nearly seven hours.

■ **Australia:** A substation fire caused an outage to more than 13,000 homes in the Bundaberg area of south-east Queensland. At approximately 4am local time a switch gear caught fire at a nearby substation and authorities of Ergon Energy were forced to re-route power to other substations while they carried out repairs and urged residents to minimize their usage once the electricity was restored later in the day. ■

Bundaberg
QLD, Australia,
January 11,
2010