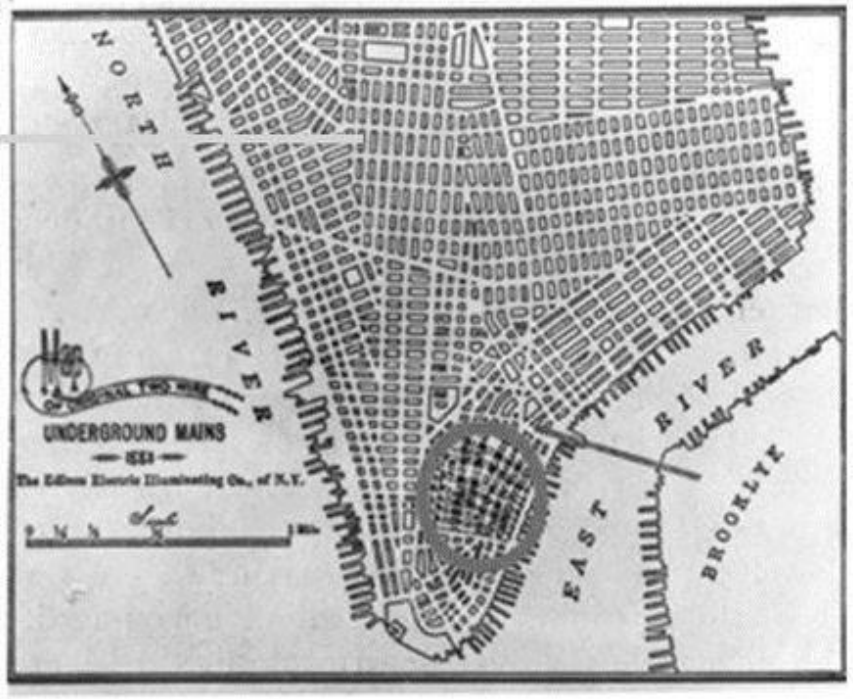
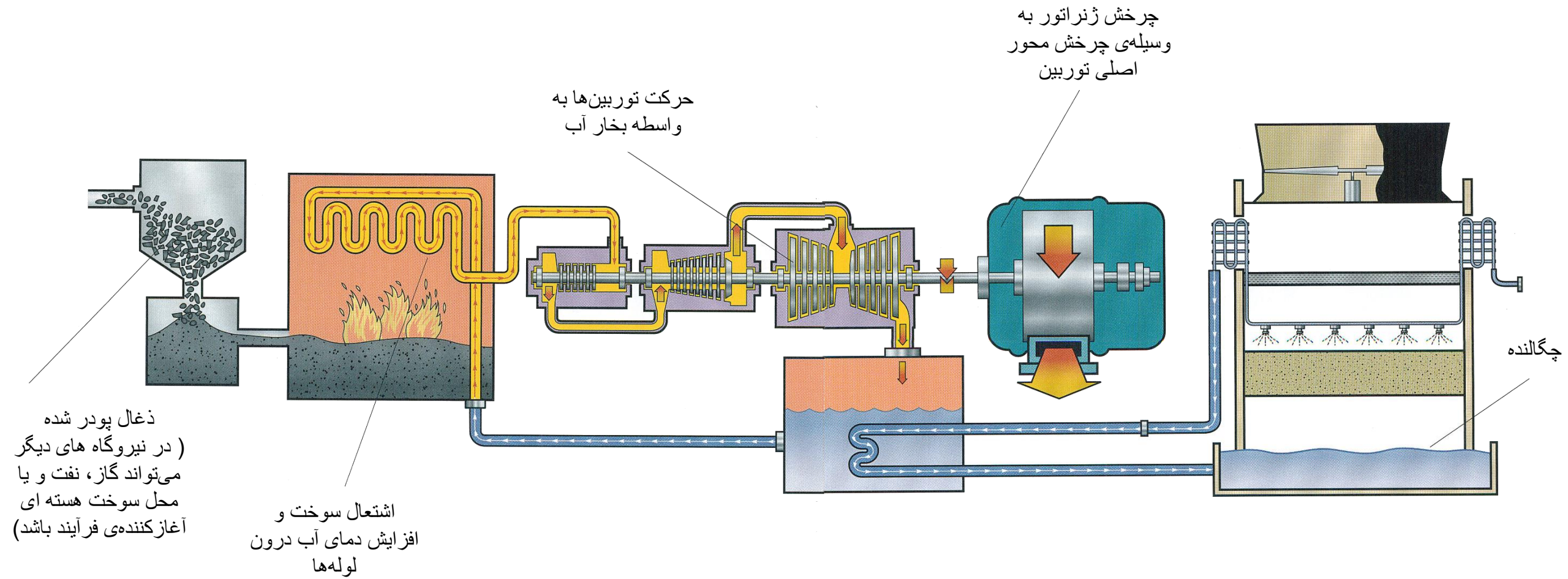
The city that never sleeps

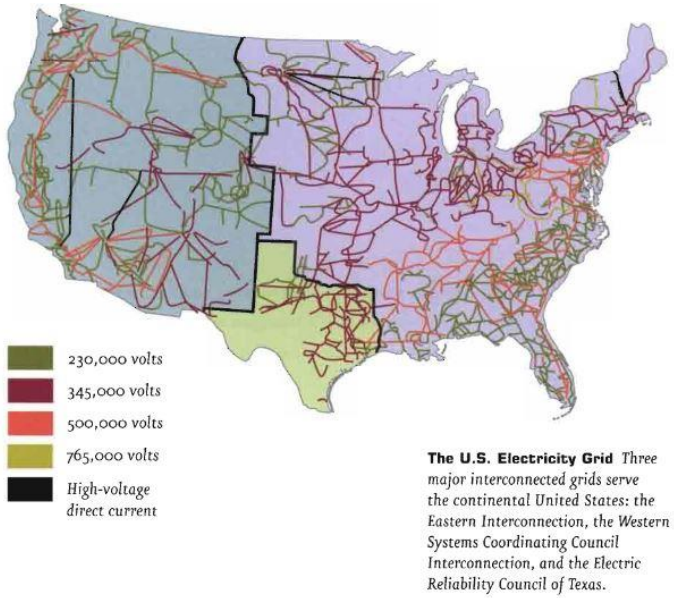
The great blizzard of 1888 ◿

The Pearl street ▽



Generation

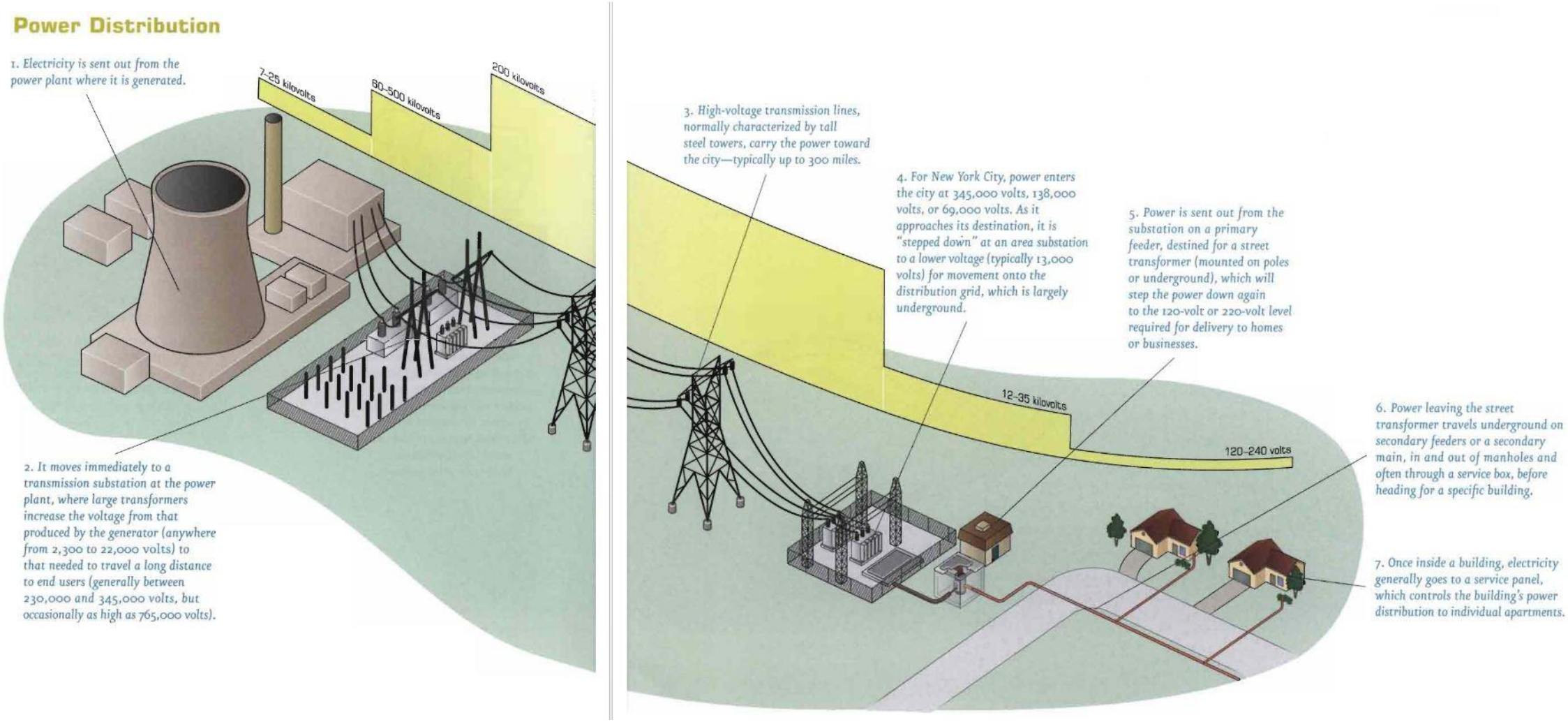

چرخش ژنراتور به
وسیله‌ی چرخش محور
اصلی توربین
حرکت توربین‌ها به
واسطه بخار آب
چگالنده
ذغال پودر شده
(در نیروگاه های دیگر
می‌تواند گاز، نفت و یا
محل سوخت هسته ای
آغازکننده‌ی فرآیند باشد)
اشتعال سوخت و
افزایش دمای آب درون
لوله‌ها



The U.S. Electricity Grid *Three major interconnected grids serve the continental United States: the Eastern Interconnection, the Western Systems Coordinating Council Interconnection, and the Electric Reliability Council of Texas.*

New York Power Generation

Distribution

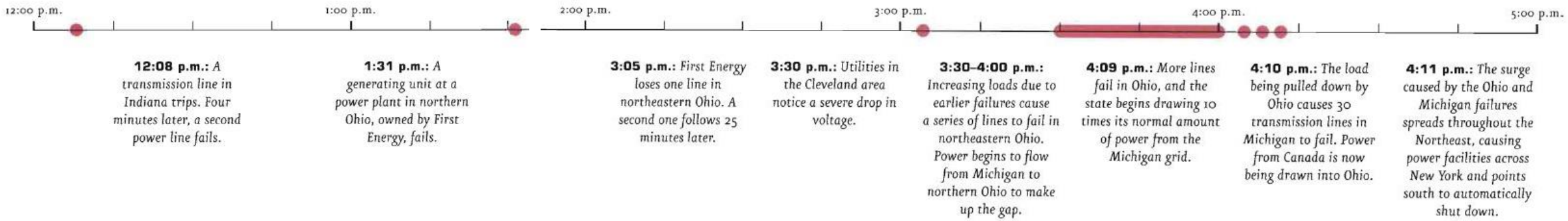


Blackouts and Brownouts

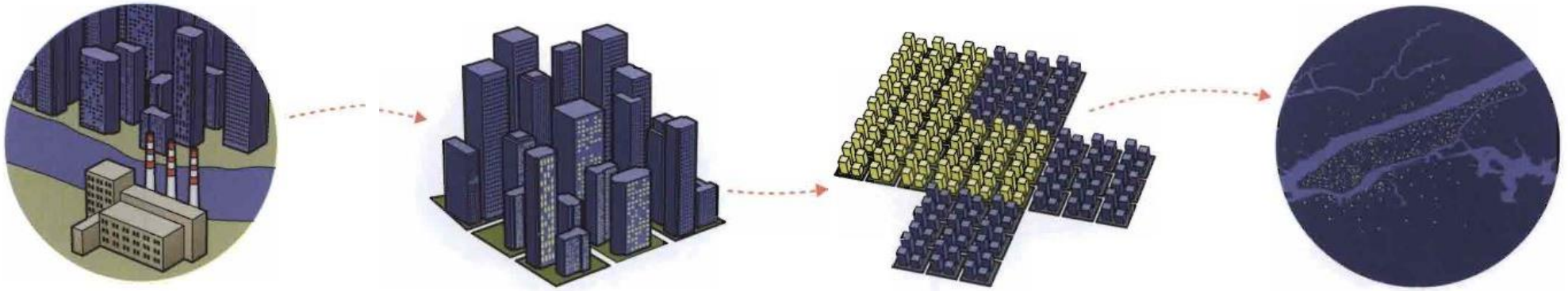
New York blackouts

- 1965
- 1977
- 2003
- 2019

Northeast blackout of 2003



Returning to Power



1. A power plant must be brought on line slowly, first producing power in small increments. Starting fossil fuel and nuclear plants can take time, as considerable energy is needed to turn enough water to steam in order to begin generating power.

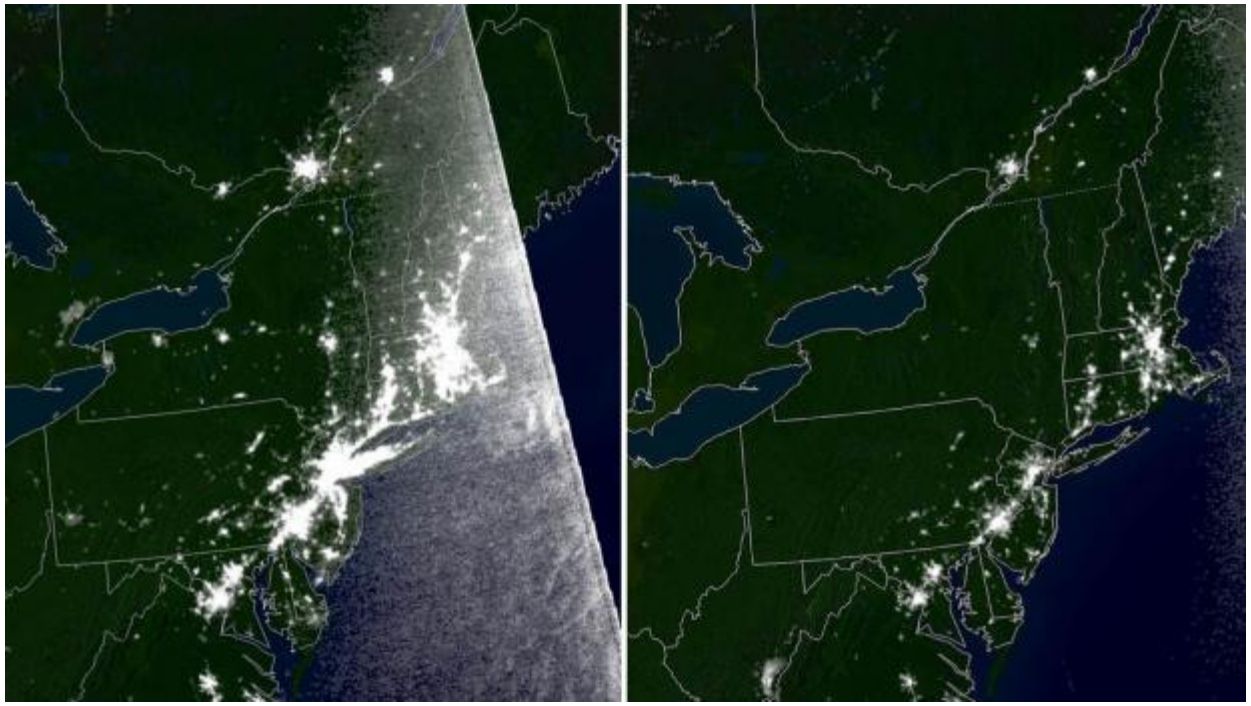
2. As small amounts of electricity are produced, limited numbers of customers may be brought on line by activating certain feeder lines.

3. Electricity demand is added, neighborhood by neighborhood, until roughly half of the generator's capacity is being produced.

4. At that point, the plant can be connected first to other plants in the area producing at a similar level and then to the wider regional and state grids.

Northeast blackout of 2003

Map of August 14th,2003 blackout. Source: U.S. Department of Energy, August 2003



Source: imagery provided by the national oceanic and atmospheric administration and the defense meteorological satellite program

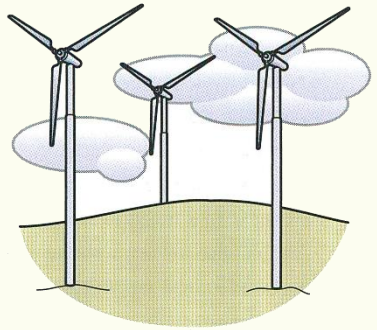
Northeast blackout of 2003

How to manage peaks

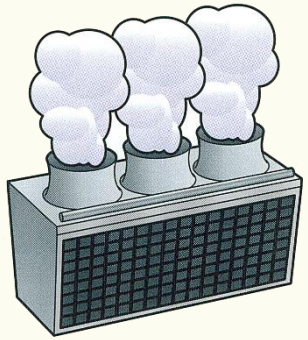
- Increase import
- Maximum outcome
- Policies
- Brownouts
- Small scale blackouts

New York Independent System Operator (NYISO) control center

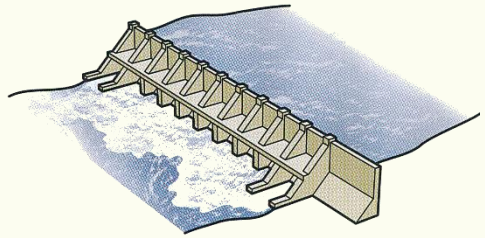
Alternative energy sources



Wind



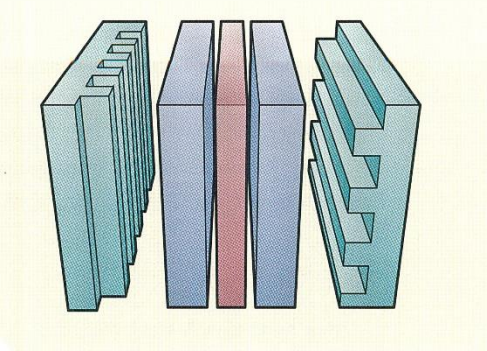
Geothermal



Hydroelectric

Solar

Bio mass



Fuel cells

ENERGY POOL