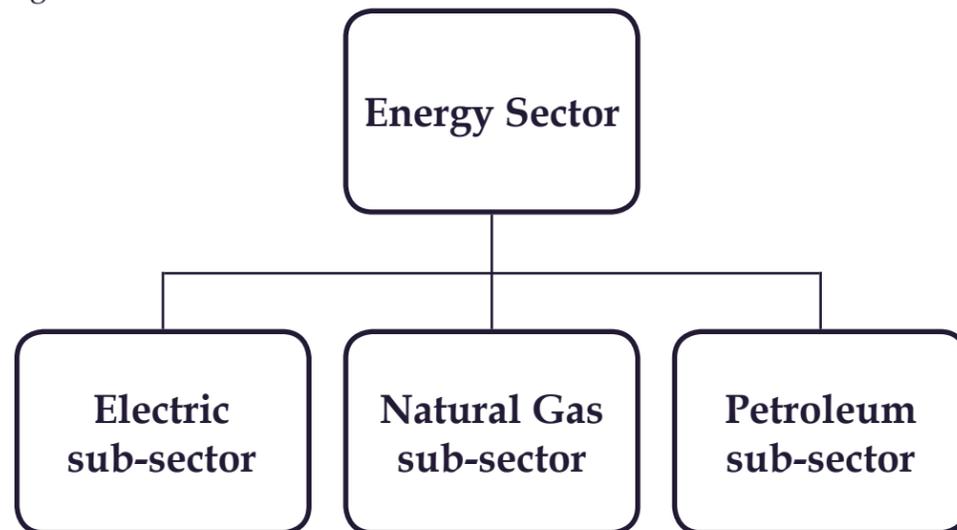




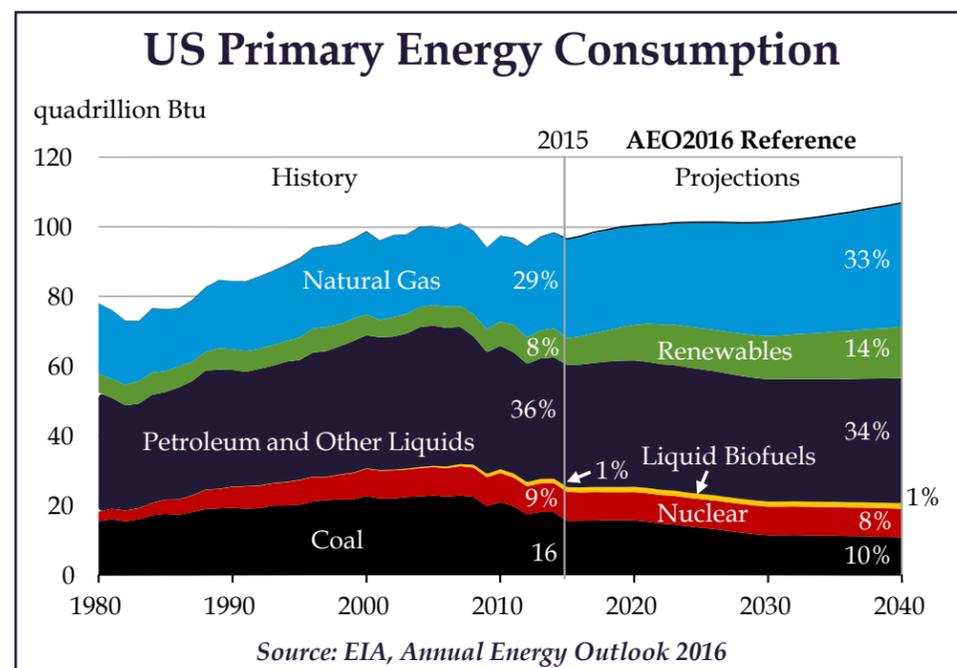
# ENERGY SECTOR SNAPSHOT: ELECTRIC

## Sector Information

The Electric sub-sector is comprised of generation facilities, transmission lines, substations, control centers, and distribution lines. This sub-sector includes entities regulated by federal and state agencies.



Roughly 98 percent of electricity is generated domestically. The primary fuel for electric power generation is petroleum and other liquids, followed by natural gas, coal, nuclear, and renewable energy sources, including solar, hydroelectricity, and wind.



## Threat

### Cyber: High

Electricity infrastructure is increasingly automated and controlled by regional grid operators. China, Russia, and Iran are developing capabilities and collecting intelligence by establishing persistent access in the Electric sub-sector networks. In December 2015, the first reported power outage caused by a cyber attack occurred in Ukraine, whereby approximately 230,000 customers lost power for up to six hours. In 2015, 46 cyber incidents were reported within the Electric sub-sector, second only to the Critical Manufacturing Sector.

### Terrorism: Low

There have been no known attacks by terrorist groups against this sub-sector in the last decade; however, criminal incidents have occurred. In April 2016, an individual attached incendiary devices to high-voltage power lines in Tyngsborough, Massachusetts, causing a four-acre brush fire. In June 2014, an explosive device damaged a diesel tank at the UniSource Energy Services power station in Nogales, Arizona. In April 2013, gunmen attacked a Pacific Gas and Electric Company's substation near San Jose, California, causing \$15 million in damage. The substation was inoperable for 27 days.

### Natural Hazards

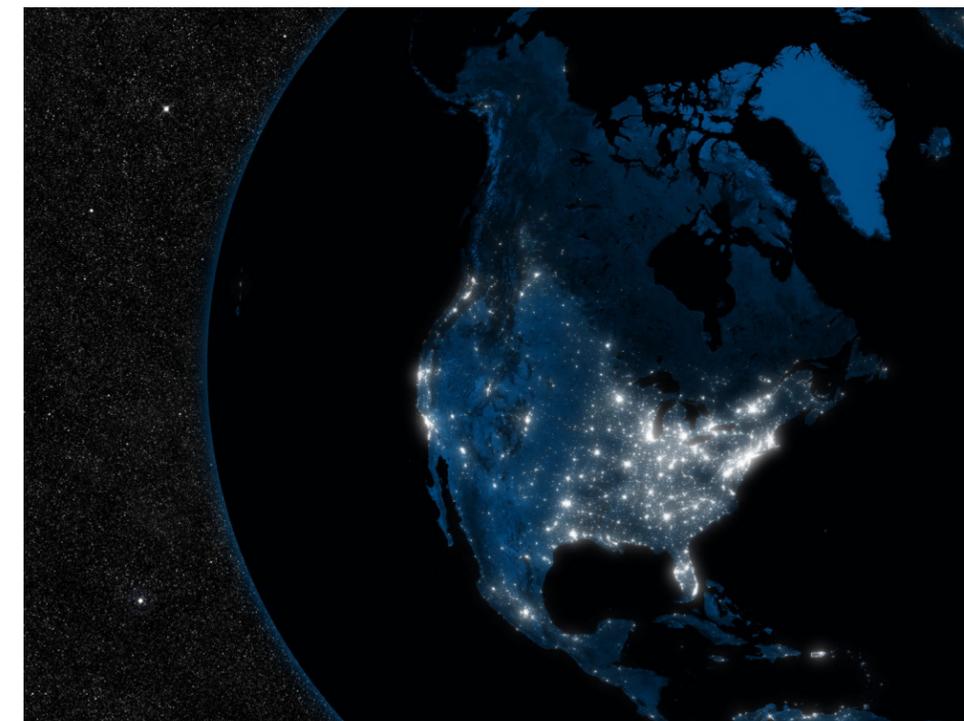
All other sectors have some degree of dependency on this sub-sector for normal operations, making the restoration of electric power a top priority following a natural disaster. Hurricanes, earthquakes, winter storms, wildfires, and solar flares are hazards to this sub-sector. In October 2012, approximately 2.9 million of New Jersey's 3.9 million customers lost electric power during Superstorm Sandy.

## Intelligence Gaps

- What physical security vulnerabilities are present at electric facilities?
- What cyber vulnerabilities can terrorists or foreign adversaries exploit?

## Preparedness

In March 2016, the US Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability released a [report](#) detailing synchrophasor technology development—a grid monitoring system that enables operators to more quickly detect system disturbances, improve grid efficiency, and prevent or recover from outages. Companies under the jurisdiction of the North American Electric Reliability Corporation started implementing this technology, incentivized by DOE grants.



### Contact Information

For more information, please contact NJOHSP's Preparedness Bureau at [preparedness@njohsp.gov](mailto:preparedness@njohsp.gov).