

# Report: Climate change threatens California electric supply

By Rory Carroll, Reuters

SAN FRANCISCO – California's electricity sector is more vulnerable to climate change than previously thought, as higher temperatures will impede the state's ability to generate and transmit power while demand for air conditioning rises, a report said Tuesday.

The data is part of the latest report released by the California Natural Resources Agency and the California Energy Commission, which are trying to help state and local leaders prepare for life in the hotter, drier California of the future.

Wildlife, agriculture and coastal communities are also at serious risk from climate change, the report said. Sea levels could rise by more than a foot by 2050, and more intense storms combined with less overall precipitation will present a host of challenges.

California is considered a national leader in setting policies to combat climate change, with a strong renewable electricity mandate in place and a carbon cap-and-trade program coming into force next year.

"We know that climate change will significantly affect the state's energy supply and demand," said Robert B. Weisenmiller, chair of the California Energy Commission.

"This groundbreaking research gives us the data and analytical tools we need to better plan, forecast and prepare to meet the state's energy needs as we face climate challenges," he said.

The warmer climate will decrease hydropower generation in the summer months when it is needed most, the report said. High-elevation hydropower plants, which supply about 75 percent of the state's hydropower, are especially at risk, since the small size of their reservoirs allows little flexibility to cope with reduced snowpack.

At the same time, higher temperatures alone will require the state to increase its electricity generating capacity 38 percent over current levels by 2100.

The report notes that renewable energy facilities, like wind and solar, are less threatened by climate change conditions, use less water, and produce none of the heat-trapping greenhouse gas emissions that come from natural gas-fired plants.

California has set a goal of cutting its output of greenhouse gas emissions to 1990 levels by 2020, the most ambitious target of any state.

The ability to move electricity from power plants to end users will also be threatened by climate change, since electrical transmission lines lose 7 to 8 percent of their transmitting capacity in high temperatures – just when demand for power rises.

Key transmission corridors are also vulnerable to more frequent and severe wildfires. The report said that the threat of wildfire to the transmission lines will increase by 40 percent.

Transmission lines with a high risk of wildfire interference include those that bring hydropower from the Pacific Northwest into California during peak demand periods as well as the lines bring power to the Los Angeles metropolitan area.

Those risks can be reduced by introducing more locally produced and distributed electricity, the report said.

Statewide average temperatures are expected to climb by 2.7 degrees above 2000 averages by 2050, according to climate scientists.

That will lead to an increase in mortality and health problems for at-risk populations, the report said.

The hotter climate will also mean that by the latter half of the century, dry water years are expected to increase by 8 percent in the Sacramento Valley and by 32 percent in the San Joaquin Valley, compared to the latter half of the 20th century.

The rise in sea level along California's coastline is also expected to accelerate, climbing 10 to 18 inches higher by 2050 and 31-55 inches higher by the end of this century. That creates the risk of saltwater intrusion into coastal groundwater supplies and into the Sacramento-San Joaquin Delta.

"These studies show that climate change is being felt in California now and will have more severe impacts in the future unless we plan ahead," said Susanne Moser, a Santa-Cruz based researcher who contributed to the assessment studies.