

# Climate change threatens electric power supply in California, report warns

By 2050 extended years of drought could lead to an electricity shortage as well as a water shortage, according to new study released Monday

[Rose Hackman](#) Mon 18 May 2015 16.01 EDT

**By 2050 extended years of drought could lead to an electricity shortage as well as a water shortage, according to new study released Monday**

Californians may have to start rationing more than water, including how much they turn on their lights and how often they use their hairdryers.

By 2050, extended years of drought in the state could lead to an electricity shortage as well as a water shortage, according to a study [published on Monday](#) in the journal Nature Climate Change.

In the study, Arizona State University authors Matthew Bartos and Mikhail Chester found that almost half (46%) of 978 electric power stations in the western US should expect to face a decrease in electricity generating capacity by “mid-century”, a timeframe coined as 2040 to 2060, due to climate change.

A 10-year drought scenario would reduce the energy-producing capacity of vulnerable electric power stations by as much as 8.8%, the authors found.

Worse, the study warns that current plans looking at electricity generating facilities in the western US have not taken into account the effects of climate change on productiveness, meaning they may have grossly overestimated the region's preparedness in the face of a changing climate and its capacity to meet electricity needs more generally.

In a Frankenstein-like twist – of a monster coming back to haunt its creator – Bartos and Chester found that changing weather conditions due to climate change, a phenomenon largely attributed to greenhouse gas emissions caused by burning fossil fuels like gas, oil and coal, will particularly adversely affect electricity generators that burn fossil fuels for power.

The study analysed all electricity generating methods used in the area, including fossil-fuel facilities using steam and combustion technology as well as renewables like wind, solar and water.

The authors found that while climate change may affect all forms of electricity production, it will have a disproportionately negative effect on older fossil fuel technologies.

Renewable technologies were found to be more resilient to the effects of climate change, suggesting that a greater shift towards renewables may not just help diminish greenhouse gas emission, but may also help create a more climate-resistant power infrastructure.

Speaking from Arizona, Bartos warned that summers are set to pose particular levels of strain. With temperatures rising due to the predicted ongoing effects of global warming, electricity generating facilities will fall victim to warmer waters and warmer air temperatures.

Summer, Bartos said, is also the time when electricity demand is at its peak – due to air conditioners working full blast.

Combine that with population increase and we may have a bit of a disaster on our hands, he said. The worst-case scenario would be a complete energy blackout.

There was hope in the study, however, in that the Pacific north-west is set to fare much better than the US south-west. Preparedness and collaboration between the two regions might mean that southern Californians could continue plugging in their hairdryers after all.

## Since you're here ...

... we have a small favour to ask. More people are reading the Guardian than ever but advertising revenues across the media are falling fast. And unlike many news organisations, we haven't put up a paywall – we want to keep our journalism as open as we can. So you can see why we need to ask for your help. The Guardian's independent, investigative journalism takes a lot of time, money and hard work to produce. But we do it because we believe our perspective matters – because it might well be your perspective, too.

*I appreciate there not being a paywall: it is more democratic for the media to be available for all and not a commodity to be purchased by a few. I'm happy to make a contribution so others with less means still have access to information. Thomasine F-R.*

If everyone who reads our reporting, who likes it, helps fund it, our future would be much more secure. **For as little as \$1, you can support the Guardian – and it only takes a minute. Thank you.**