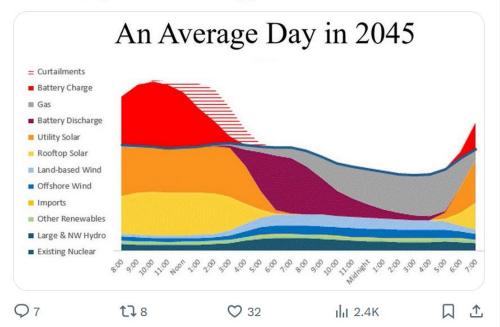




## Ryan Pickering 🤵 🔌 🔤 @ryan\_pickering\_ · 16h

Grateful to publish new research on California's 2045 clean energy roadmap. Spoiler: It barely reduces our reliance on fossil fuels despite a colossal deployment of renewables



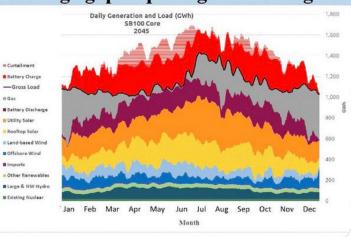


## Ryan Pickering 🎡 🔌 🕮 @ryan\_pickering\_ • 16h

This is a minute by minute model of SB100, California's landmark climate legislation designed to decarbonize our electricity grid by 2045 solely with solar, wind, geothermal, batteries and imports. Sadly, it's not even close.

## California's goal is 100% clean electricity by 2045. Instead, there is a large gap requiring the use of gas.

By 2045, all retail sales of electricity are supposed to be emission-free. Solar output is large, with wind much smaller. Batteries play a large role but cannot fill the gap between supply and demand. SB100 allows the burning of gas to cover transmission losses, but gas is needed throughout the year just to keep the lights on. Our model excludes transmission losses, and yet we find that, in 2045, California's grid will be burning 81% as much gas as it is now. Curtailment is extensive; that is, a great deal of excess power could be produced, but not at the right times, and only some of it can be stored in the batteries.



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Battery Charge

-Gross Load

# Existing Nuclear

m Gas

0 6

111 342

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