

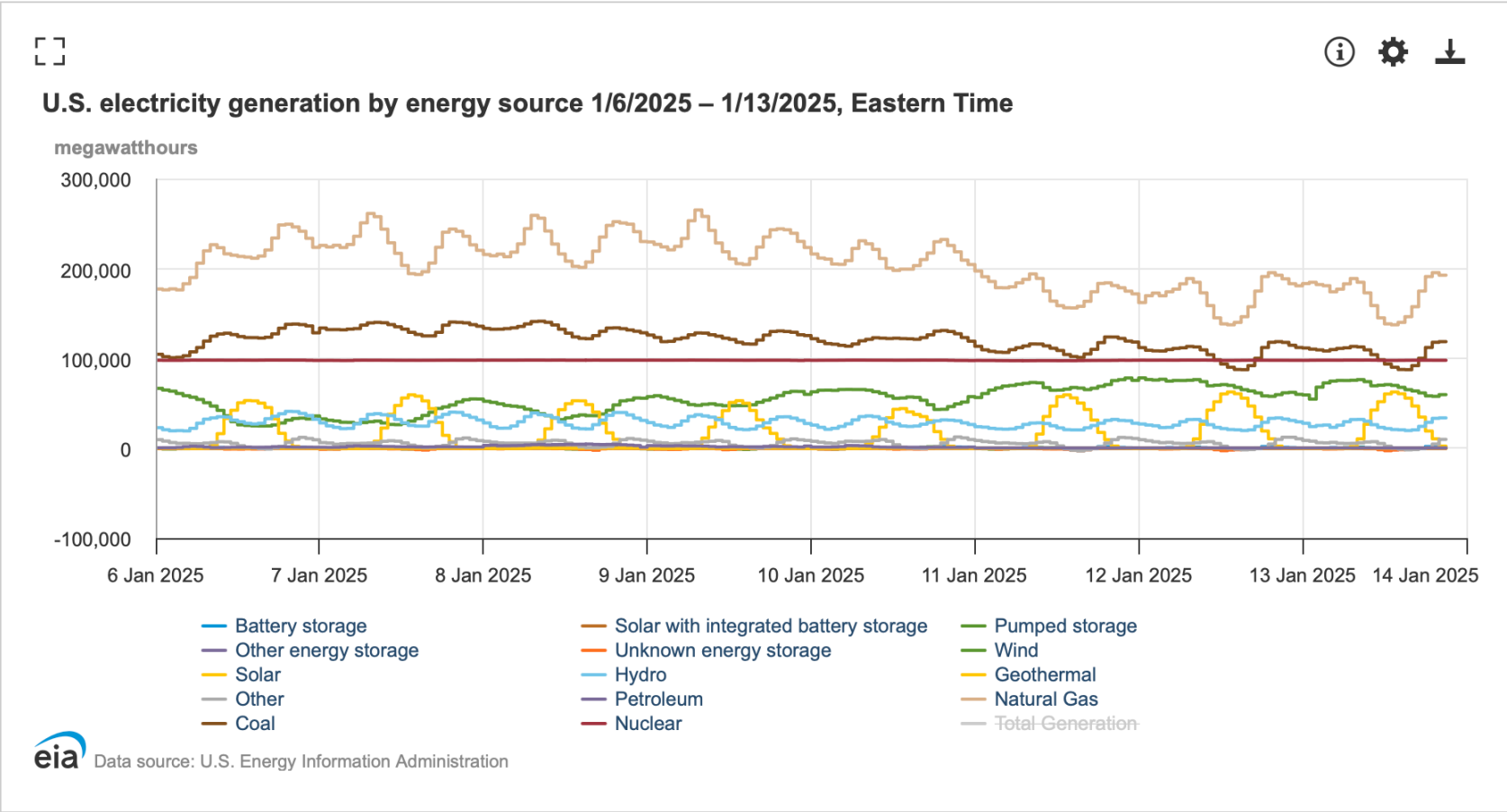
Blackouts or
Bright Futures:
Affordability,
Reliability and
the Grid



ALWAYS ON
ENERGY RESEARCH

“In God we trust. All others must bring data.” Dr. W. Edward Deming

U.S. Real Time Generation



Mythical Headlines

It's cheaper to build new solar than it is to operate coal plants

New analysis released by Lazard compares the levelized cost of energy for various generation technologies on a \$/MWh basis and shows that renewables, specifically utility-scale solar and wind, are the economic frontrunners.

OCTOBER 20, 2020 **TIM SYLVIA**

COMMERCIAL & INDUSTRIAL PV COMMUNITY COST AND PRICES FINANCE INSTALLATIONS MARKETS
MARKETS & POLICY PROCUREMENT RESIDENTIAL PV SUSTAINABILITY UTILITY SCALE PV UNITED STATES



Coal plant.

Forbes

99% Of U.S. Coal Plants Are More Expensive Than New Renewables. A Coal-To-Clean Transition Is Worth \$589 Billion, Mostly In Red States

By Irina Ivanova

Latest Local News Live Shows ... CBS NEWS

MONEYWATCH TECH

It's now cheaper to build a new wind farm than to keep a coal plant running

By Irina Ivanova
November 16, 2018 / 8:31 AM EST / MoneyWatch

f X

Reality

“The claim that green energy is cheaper relies on bogus math that measures the cost of electricity only when the sun is shining and the wind is blowing. Modern societies need around-the-clock power, requiring backup, often powered by fossil fuels. That means we’re paying for two power systems: renewables and backup. Moreover, as fossil fuels are used less, those power sources need to earn their capital costs back in fewer hours, leading to even more expensive power.”

Bjorn Lomborg WSJ

Green Electricity Costs a Bundle

The data make clear: The notion that solar and wind power save money is an environmentalist lie.

By Bjorn Lomborg

Jan. 1, 2025 at 5:31 pm ET

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ISO NE: The Staggering Costs of Green Policies

The Staggering Costs of New England's Green Energy Policies

ISO-NE All-InSystem Cost per Megawatt-hour (MWh): Existing vs. New Energy Sources

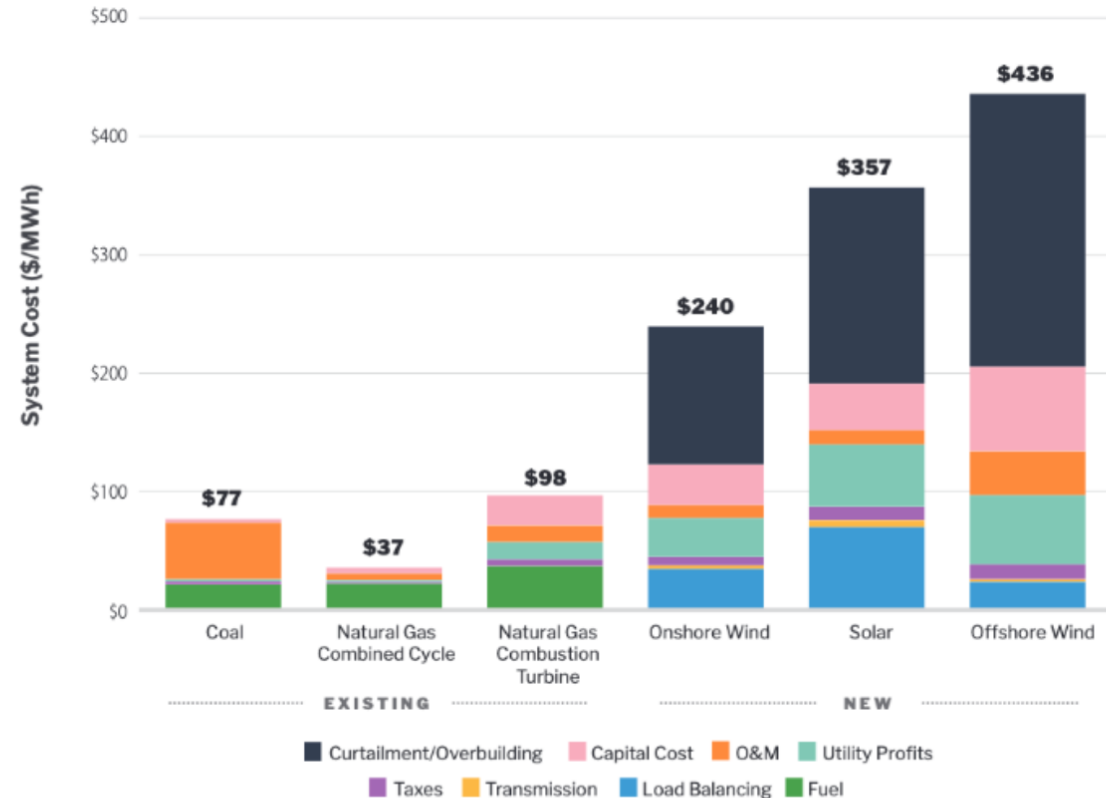


FIGURE 19. New offshore wind facilities are the most expensive form of new electricity generation built under the New England Decarbonization Plans. Once costs such as state taxes, transmission, utility returns, battery storage, and overbuilding and curtailment, are accounted for new offshore wind costs \$436 per MWh, onshore wind costs \$240 per MWh, and new solar costs \$357 per MWh.

Costs Per State and Per Capita

The Staggering Costs of New England's Green Energy Policies

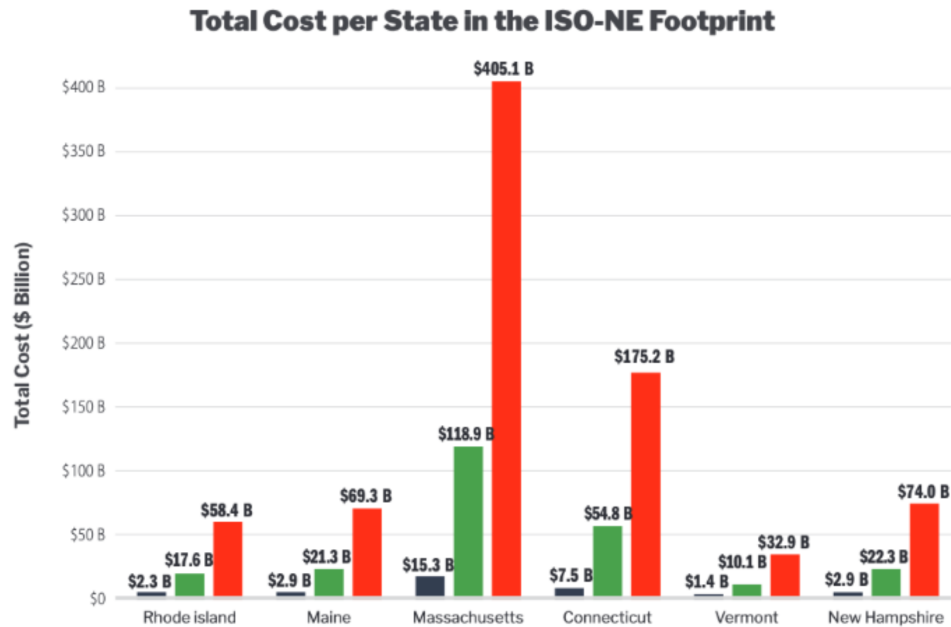


FIGURE 10. Total costs per state under 225 GW buildout scenario.

Total Cost per Capita in ISO-NE

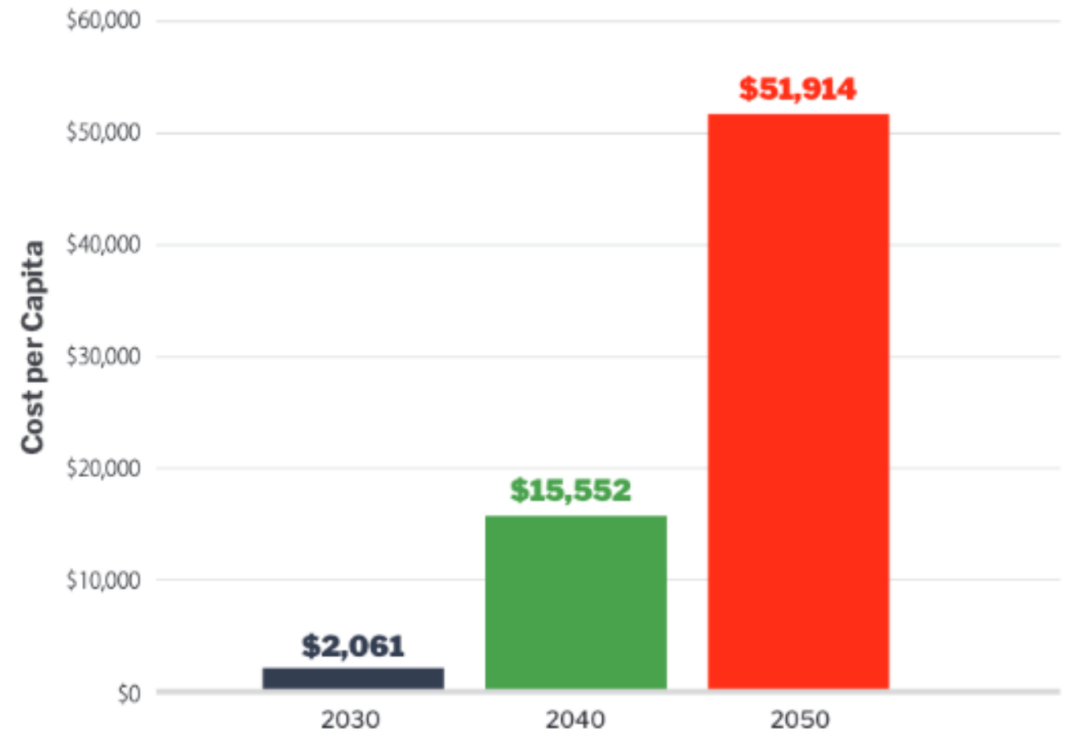


FIGURE 9. Total Cost per Capita in ISO-NE

What do residents get for their investments?

The Staggering Costs of New England's Green Energy Policies

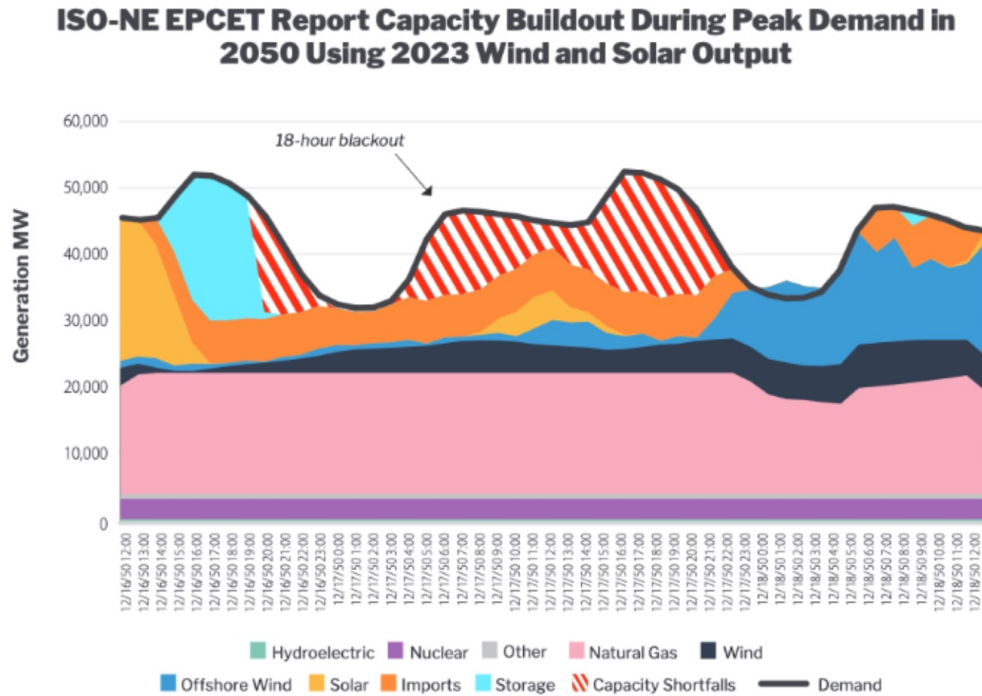


FIGURE 15. The capacity buildout in the EPCET report is insufficient to maintain reliability during peak demand.

The Staggering Costs of New England's Green Energy Policies

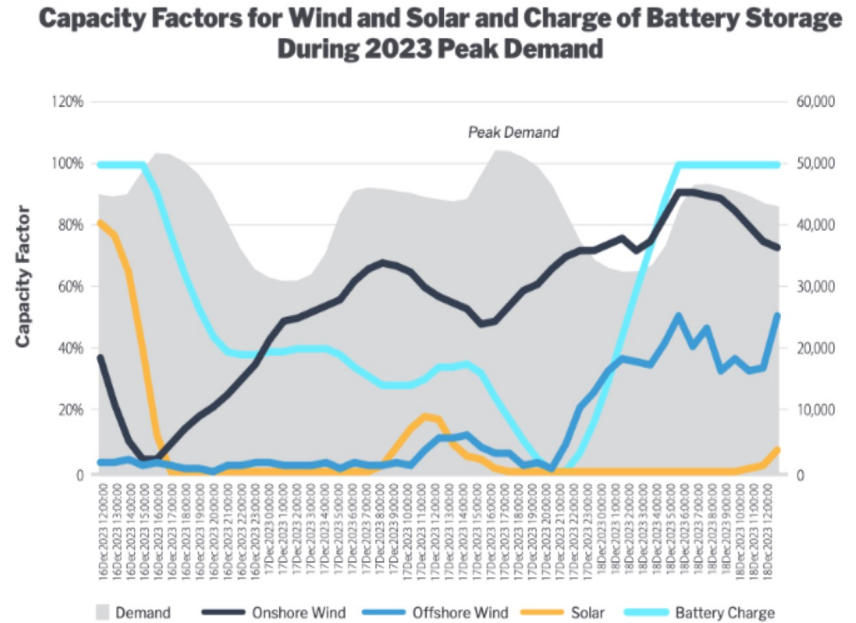
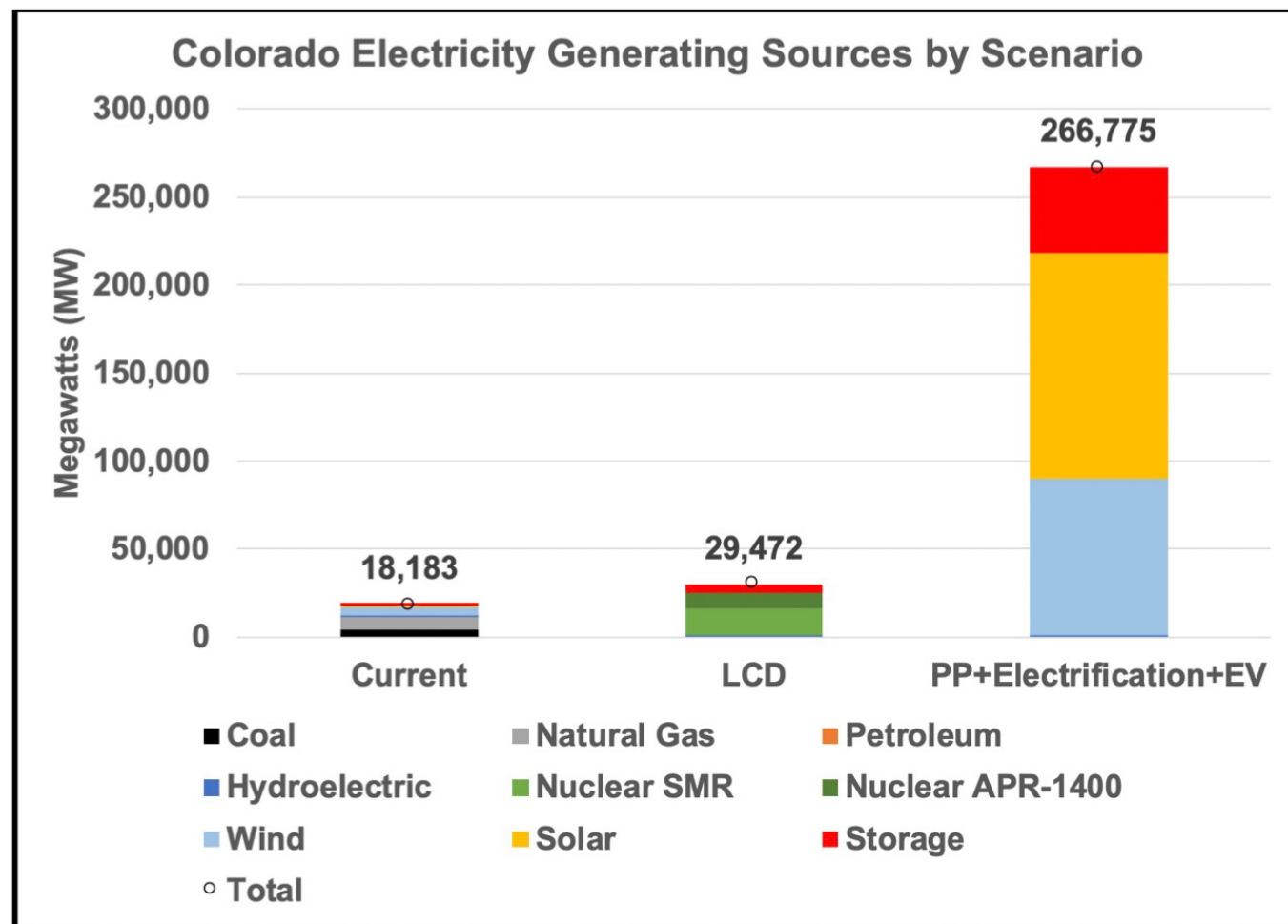


FIGURE 14. During a 36-hour period stretching from noon on December 16 until midnight on December 17, 2023, the offshore wind on the ISO-NE system performs at an average capacity factor of 4.9 percent.

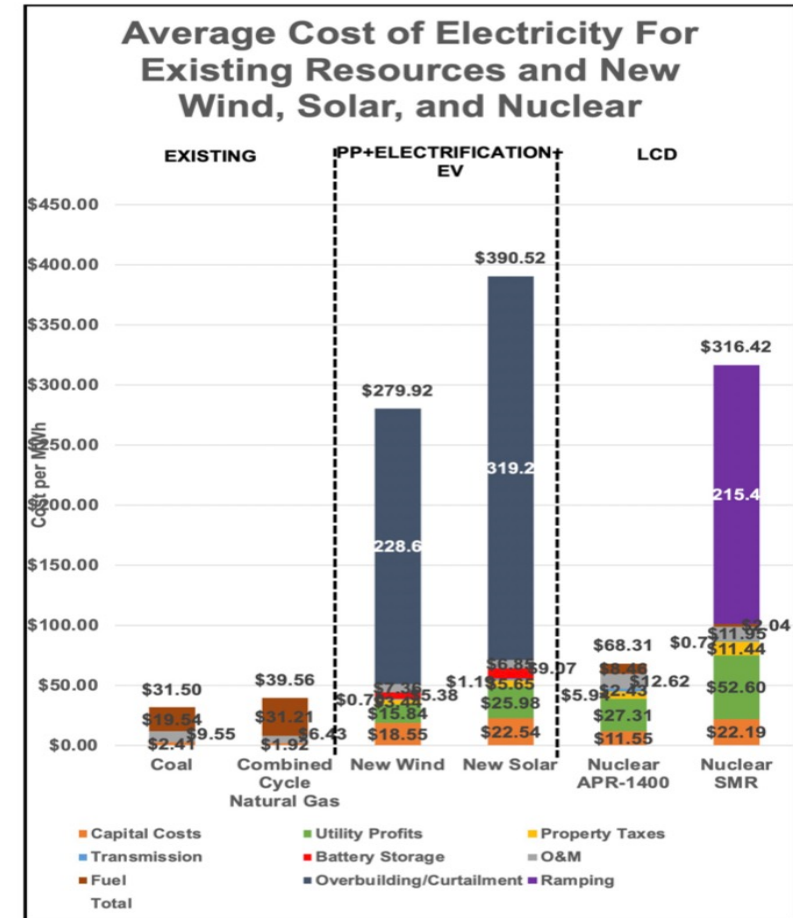
Colorado fantasies:
complete
electrification and
complete alternative
resources-powered
grid

Figure 6. A comparison of the capacity currently serving Colorado as of 2021 vs. what would be required under each decarbonization scenario.



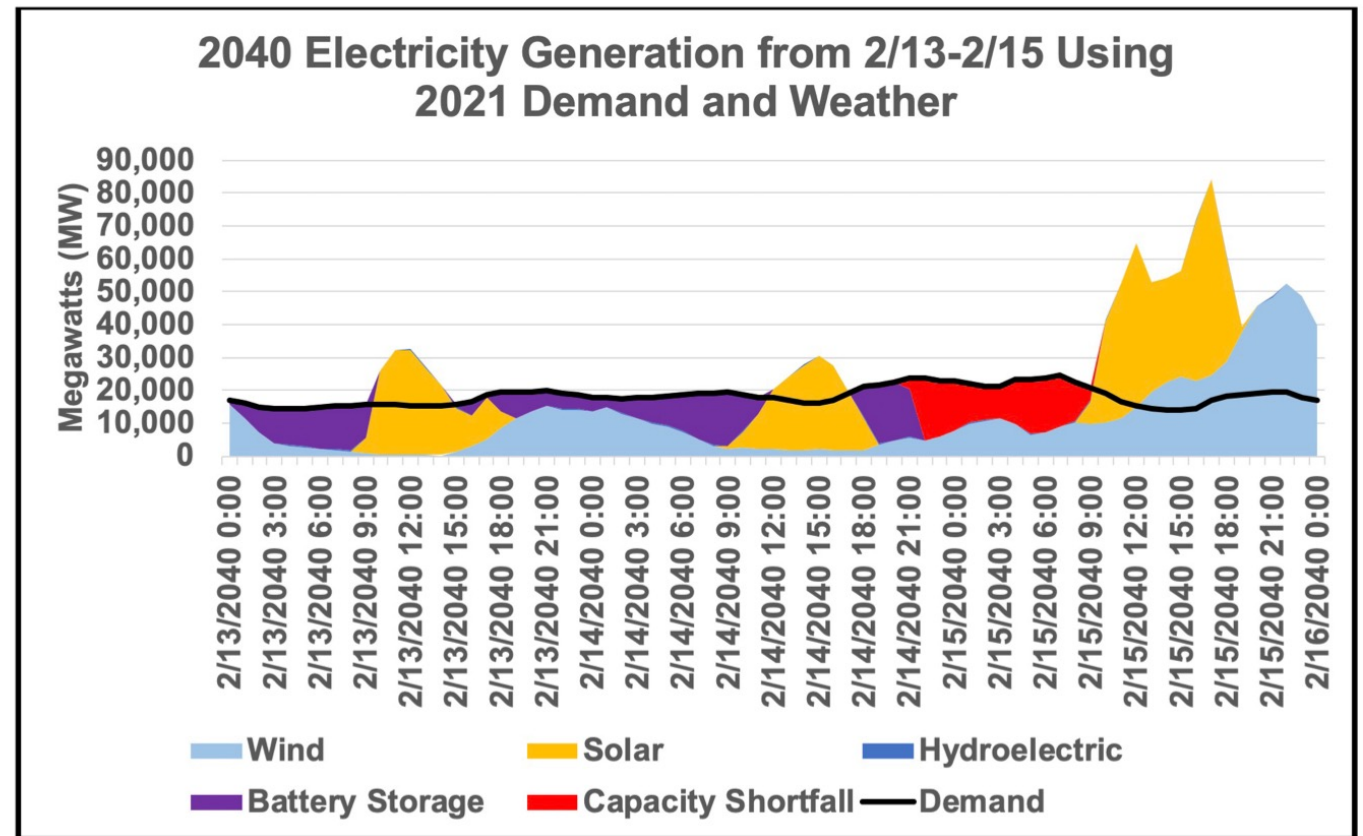
Colorado discovers
there's no free lunch
or resource

Figure 9. Once costs such as property taxes, transmission, utility returns, battery storage, and overbuilding and curtailment are accounted for, new wind costs close to \$280/MWh, and new solar costs nearly \$391/MWh. Under the LCD Scenario, APR-1400s would become the lowest-cost source of new carbon-free power. SMRs would be expensive due to their use as a peaking resource.

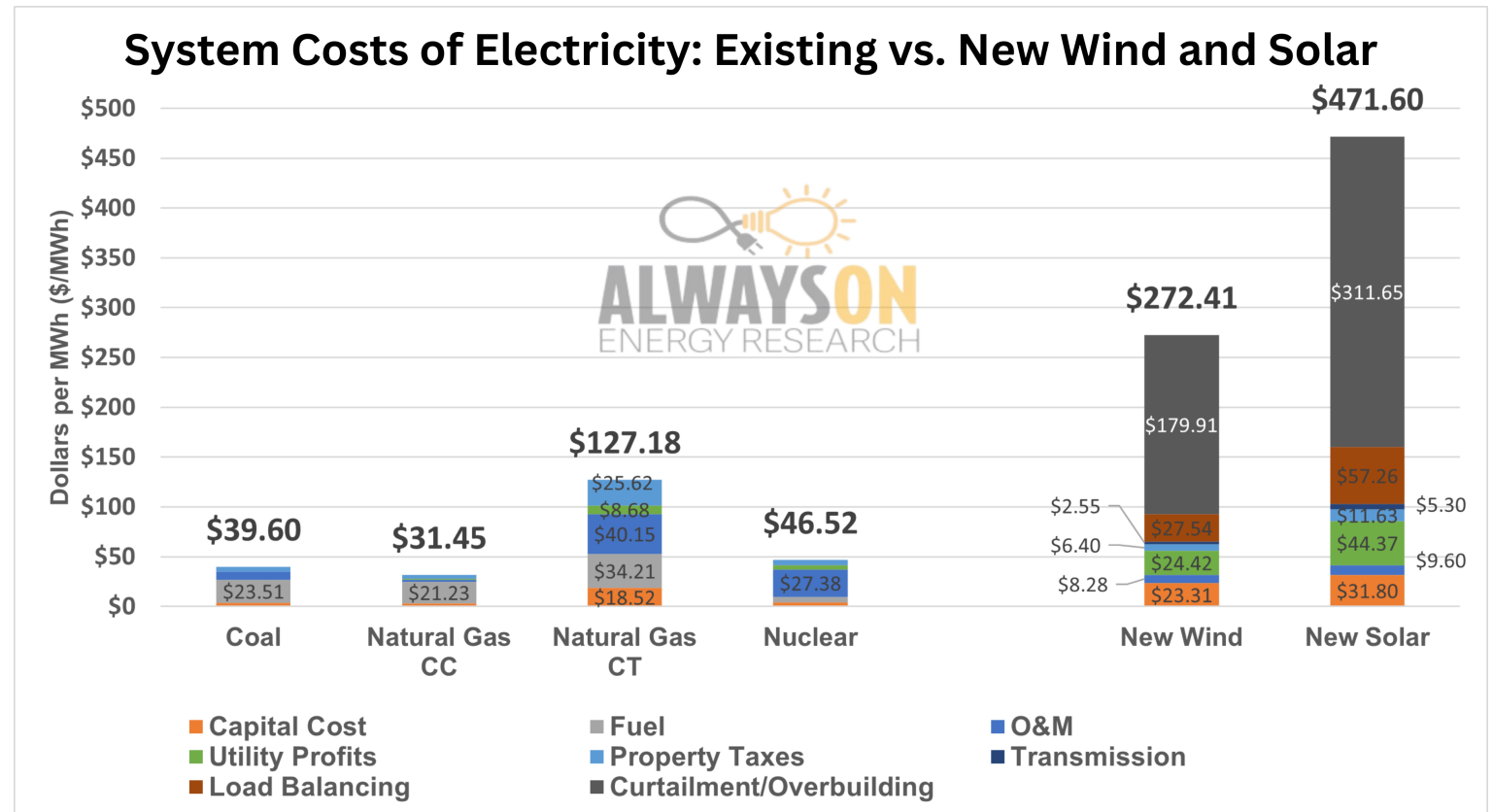


Colorado gets blackouts

Figure 11. Under 2021 conditions, nearly 260 GW of renewables and battery capacity would not be enough to avoid a blackout (shown in red) due to an extended period of low wind and solar output.



Minnesota Decarbonization Plan



No Good News on Reliability and Affordability



Published

December 17, 2024

Author

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NERC: Plant Closures, Surging Demand Pose Risk to Grid Over the Next Decade



A new report from NERC expects growing electric reliability challenges for the U.S., highlighting the need for smart energy policies, NRECA CEO Jim Matheson said. (Photo Courtesy: Union Power Cooperative)

Over half of North America is at risk of energy shortfalls in the next 10 years amid surging electricity demand and thermal plant retirements, according to [a new report](#) from the North American Electric Reliability Corp.

“Normalizing” outages and high prices

Heat wave knocks out power to thousands Southern California homes

By Tim Cahoon
Saturday, September 7, 2024



Thousands of Southern Californians lost power as the heat wave put a strain on the region's electrical grid.

State regulators look into power outages reported by customers

State regulators look into power outages reported by customers.



Local Energy outages spark complaints, may prompt regulators to consider looking into power losses; utility says causes vary



Our electricity prices are high and so is the risk of power outages



- Energy costs are rising faster than inflation
- Reliability number one concern
- CO: Give away batteries
- LA Times: Do blackouts help the planet

What can we do?

- Reliable Portfolio Standard > Renewable Portfolio Standard
- Consumer Regulated Electricity
- Look to states that get it right; some do.
- More information: <https://www.aoenergy.org>
- aoc@aoenergy.org