ANALYSIS

July 2026: Clean Power Delivers During Heatwaves

For questions about this analysis and the underlying data, please contact the ACP research team, research@cleanpower.org.

Executive Summary

America celebrated its 250th birthday amid one of the year's most significant heatwaves. As extreme temperatures drove electricity demand to seasonal highs, wholesale power prices surged, and regional power systems relied heavily on expensive gas and coal peaking plants to maintain reliability. The grid was pushed to its limits, and nearly 400,000 households across the Midwest, Mid-Atlantic, and Northeast experienced power outages during some of the hottest hours of the year.

Yet the regions with the greatest deployment of clean power consistently delivered the strongest performance.

Across the areas most affected by the heatwave, wind and solar generation increased during the highest-demand hours compared to the days before and after the event, providing electricity when it was needed most. Markets with higher levels of clean energy experienced substantially lower wholesale electricity prices, while regions with relatively little clean generation—including PJM, NYISO, and ISO New England—experienced the highest prices despite having tens of gigawatts of clean energy waiting to connect to the grid.

However New England offers a standout example of progress. Since last summer's heatwave, the region has added offshore wind and battery storage, reducing oil-fired generation by roughly 50% during this year's event. Batteries that were effectively unavailable during the 2025 heatwave delivered 2.3 GWh of electricity during the system's most critical hours, helping reduce real-time prices by more than half compared to day-ahead market prices.

To quantify the value of additional clean energy, ACP modeled a scenario in which 74 GW of advanced utility-scale solar, wind, offshore wind, and battery storage projects currently awaiting interconnection in MISO, PJM, NYISO, and ISO New England had already been operating.

The results were clear:

- **More than $170 million in wholesale electricity cost savings during the July heatwave.**
- **Lower reliance on expensive gas, coal, and oil peaking generation.**
- **Improved system reliability, including avoiding modeled reliability shortfalls during the highest-demand hours.**
- **Lower wholesale electricity prices across every modeled region.**

Extreme weather events are becoming more frequent and electricity demand continues to rise. This analysis demonstrates that expanding clean power is not simply an emissions strategy—it is a reliability and affordability strategy. Bringing shovel-ready clean energy projects online faster would reduce consumer costs, strengthen grid reliability, and lessen dependence on the most expensive generating resources when Americans need electricity the most.

KEY FINDINGS

- **74 GW** of shovel-ready projects could have reduced costs and improved reliability
- **$170 million** in potential consumer savings
- Regions with more clean power experienced **dramatically lower** wholesale prices
- New England cut oil generation **roughly in half** compared to 2025
- Markets with limited clean energy saw prices spike to **$170 - $240/MWh**

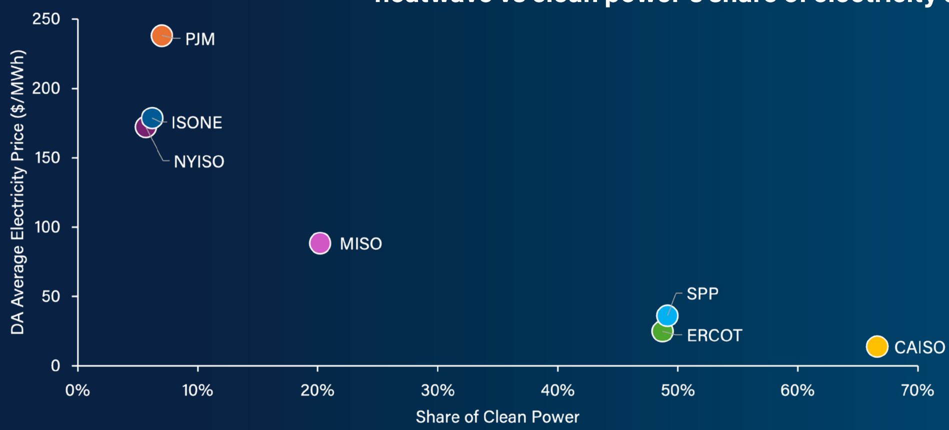
Clean Power's Performance

A heat dome settled over the Eastern US in early July 2026, causing very hot and humid weather that resulted in 13 all-time heat records broken and 18 records tied across North Carolina, Virginia, West Virginia, Maryland, Pennsylvania, New Jersey, New York, Vermont, and Maine.[1] This extreme heat pushed the power grid to its limits, causing high demand and high prices across the Eastern Interconnect as well as localized outages during some of the year's hottest hours.

Notably, the parts of the country most affected by this heatwave—namely the Midwest (MISO), Mid-Atlantic (PJM), New York (NYISO), and New England (ISONE)—have relatively little clean power on their grids despite a significant queue of clean power waiting to interconnect.

In what is becoming a visual norm, markets with high deployments of clean power consistently see lower wholesale power prices than those without. This wholesale cost of electricity is ultimately passed on to customers via their local utility's retail rates.

Average day-ahead wholesale electricity price during July 2026 heatwave vs clean power's share of electricity demand

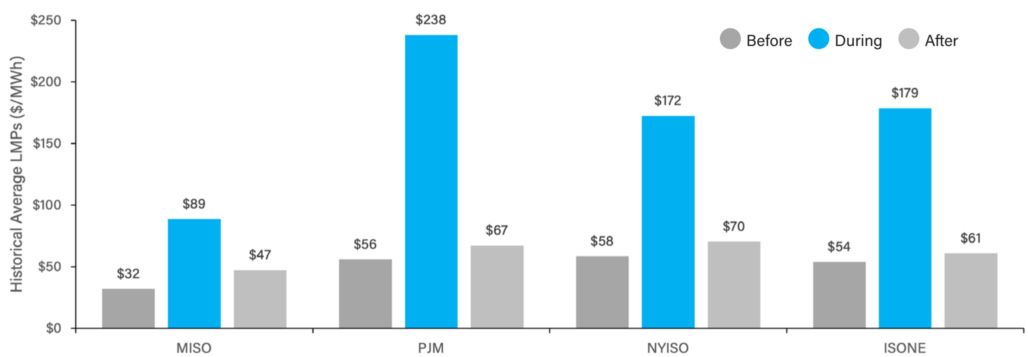


Market	Average Day-Ahead Electricity Price ($/MWh)	Wind & Solar Share
NYISO	$173	6%
ISO-NE	$179	6%
PJM	$238	7%
MISO	$89	20%
SPP	$36	49%
ERCOT	$25	49%
CAISO	$14	67%

Power prices were high during the heatwave, as inefficient gas- and coal-fired peaking resources had to run for extended periods of time to maintain reliability. When these units need to run, the price of power for all generators goes up, and the grid becomes much more expensive to operate. Real world average prices rose 124% in MISO, 287% in PJM, 168% in New York, and 211% in New England compared to average prices in the days before and after the heatwave.

MISO saw the smallest rise in prices during the heatwave, and it has a higher penetration of clean power on its system than the other regions modeled. This is a continuation of a trend ACP has pointed out before where grids with more clean power have lower costs both during extreme weather[2] and during typical weather.[3] Clean power showed up when it was needed most.

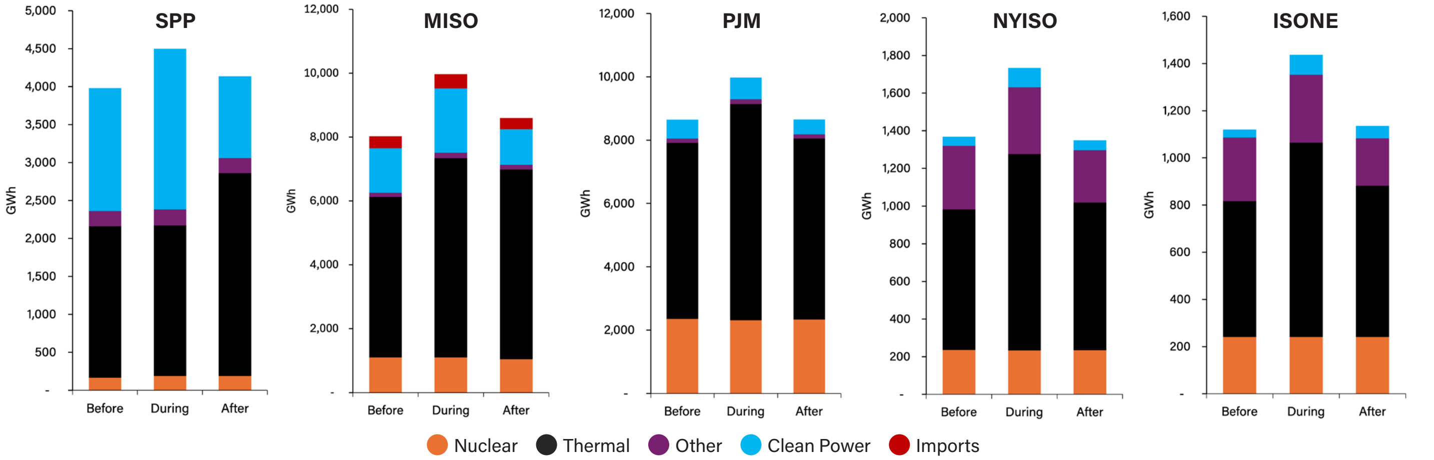
Wholesale day-ahead power prices before, during, and after July 2026 heatwave



In those regions most directly impacted by the heatwave, MISO, SPP, PJM, NYISO, and ISONE, clean power generated more during the heatwave than the equivalent days prior and after the heatwave.[4] Almost 50% of the electricity consumed in SPP was met with clean power. Over a fifth of electricity demand in MISO was met by clean power.

1 Daily Weather Records | Data Tools | Climate Data Online (CDO) | National Climatic Data Center (NCDC). All time highest max temperature records set between 6/29/2026 and 7/5/2026
2 Powering Through Extremes: How Clean Energy Lowers Costs and Improves Reliability
3 Clean Energy Helps Keep Electricity Prices in Check | ACP Resource
4 The heatwave hit SPP and MISO between June 29-July 2 whereas PJM, NYISO, and ISO-NE experienced it July 1-3.

Generation mix in each ISO before, during, and after the heatwave[5]



As shown above, the amount of thermal fossil fuel resources dispatched to meet the increased cooling load climbed significantly across MISO and the Northeast during the heatwave.

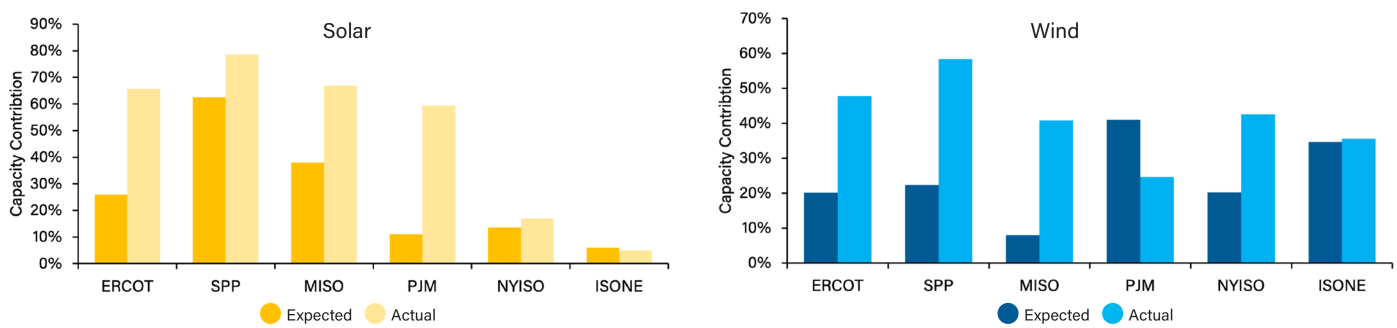
Wind and Solar Keep the Lights On

Across nearly every Independent System Operator (ISO), wind and solar generated significantly more electricity during the grid's peak demand hour than system operators had expected. The figure below compares expected and actual generation during each market's highest-load hour, illustrating the real-world capacity contribution of utility-scale wind and solar when electricity demand was at its highest.

Capacity contribution measures how much of a resource's installed capacity is available to support the grid during periods of peak system stress. During this heatwave, clean power consistently exceeded expectations, providing more electricity than grid operators had forecast at the moments reliability mattered most.

The results were particularly striking in PJM and MISO. In PJM, solar generation during the peak hour was nearly five times higher than expected, while wind generation in MISO also delivered roughly five times more electricity than forecast. Similar patterns emerged across nearly every region, demonstrating that clean power not only performed reliably during extreme heat but delivered substantially more energy than anticipated when the grid was under its greatest strain.

Capacity contribution of utility-scale solar and wind during July 2026 heatwave



What if More Clean Power Had Been Online?

ACP found that there would have been significant cost savings and reliability improvements to the grid if even a small portion of clean power stuck in the interconnection queue had been online, highlighting the importance of clean power to the economical operations of the grid and its continued track record of contributions during extreme weather events like the Winter Storm Fern in January 2026 and the July 2025 heatwave.

5 Thermal includes natural gas, coal, and oil units. Other predominantly includes hydro, biofuels, and BTM solar. Clean power includes utility-scale solar, land-based wind, and offshore wind.

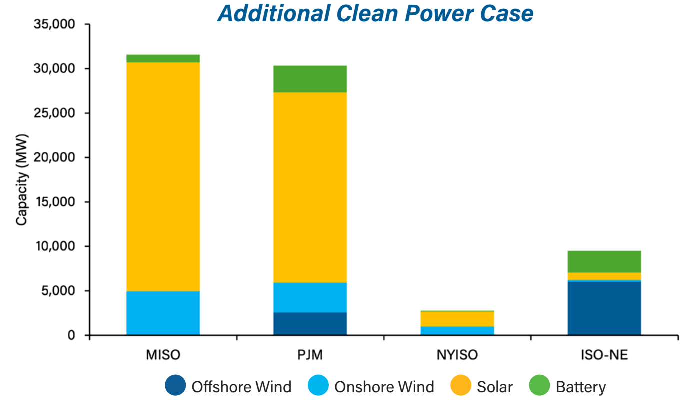
Methodology

ACP modeled the Eastern Interconnect under actual, historical hourly load and daily gas prices for the period of June 18–July 6, 2026, under two scenarios: a *Base Case*, which includes only real, active resources on the grid today, and an *Additional Clean Power Case*, which adds a subset of the LBNL queue data for resources awaiting interconnection.

Specifically, ACP added resources to the model from the LBNL queue data for MISO, PJM, NYISO, and ISONE that are listed as active and were far along in the queue process.[6] ACP chose this small subset of queued generators that have been in a relatively advanced state in the queue for at least a year and a half as a conservative assumption: this is a restrictive set of serious generators that, under different circumstances, could realistically be generating power for the grid, not a speculative set of placeholder generation.

ACP simulated the operation of the Eastern Interconnect in both the *Base Case* and the *Additional Clean Power Case* via EnCompass Production Cost modeling, comparing the cost and reliability differences of both simulations. The model mimics grid operations by using an economic dispatch algorithm to determine the least-cost solution to meet energy demand while adhering to real world resource and grid constraints. ACP looked at historical load to determine the days of the heatwave, which were June 29–July 2 in MISO and July 1-3 in PJM, New York and New England. ACP ensured an equal number of days before and after the heatwave were included in the model to determine its effects on grid operations.

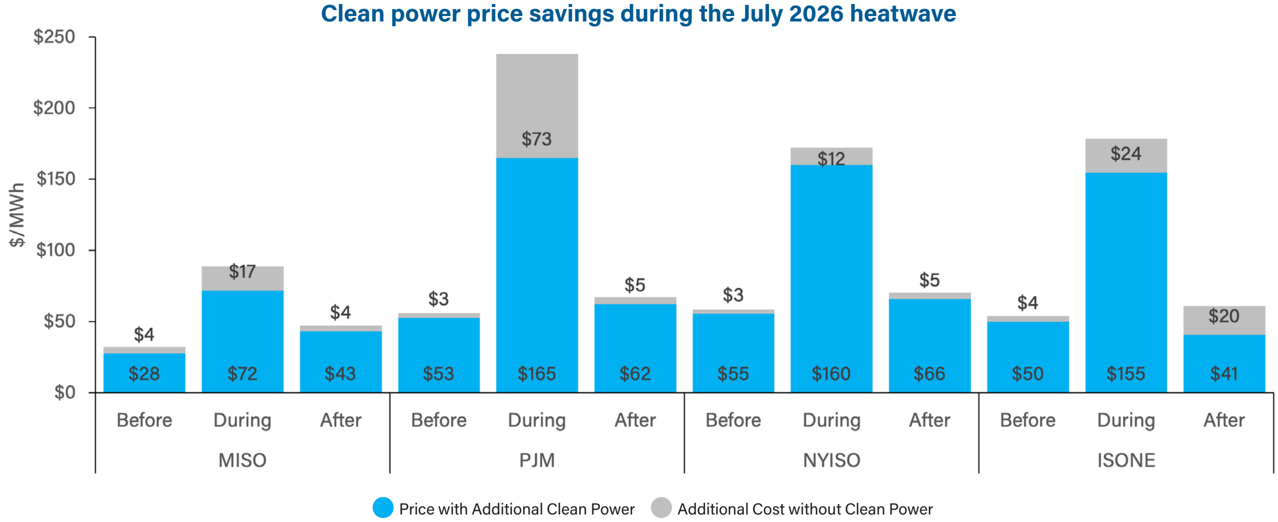
Incremental additions in the *Additional Clean Power Case*



Additional Clean Power Would Have Saved the Grid Over $170 Million During the July 2026 Heatwave

Clean power saves the grid money day in and day out, lowering the cost of power for the entire grid, but these savings can grow even larger during extreme weather events like this heatwave. Had the additional clean power been online for this heatwave, U.S. grids would have saved more than $170 million in extra costs by displacing the need for inefficient, polluting peaker resources to run. Average costs during the hottest days would have been between $12 and $73 per MWh (7-30%) cheaper with more clean power.

Clean power price savings during the July 2026 heatwave



6 Active or pending Interconnection Agreement, or completed Feasibility Study

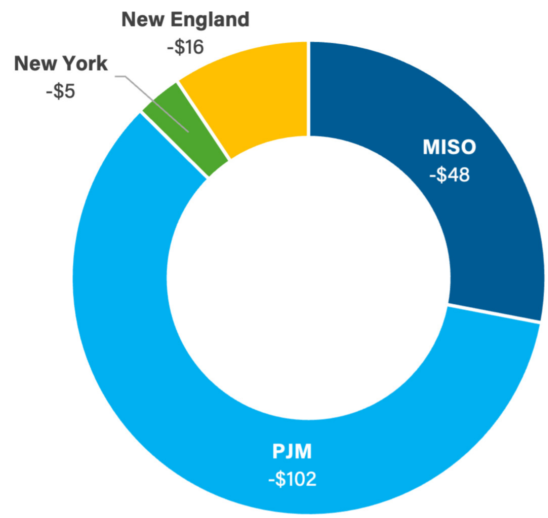
In the *Additional Clean Power Case*, the grid benefitted from the ample sunlight during the daylight hours, plus extra battery storage to assist with the evening peak. This additional solar and battery generation largely offset expensive gas peaker generation and lowered the marginal cost of power in many of the most critical hours for the grid.

Even a small amount of batteries on the grid can make an outsized impact in reducing thermal generation. **For example, by adding only 3 GW of batteries in PJM, the grid would have been able to avoid 10 GWh of expensive and highly emitting coal and gas generation during the heatwave's evening peak (7 pm – 9 pm) despite low wind production and the sun having already set.**

Summer heatwaves are typically not very windy, and this one was no exception, but the additional sunlight more than compensated for the lower wind output (Winter storms are typically the opposite, incidentally—not very sunny but quite windy).

Most of the cost savings associated with our *Additional Clean Power Case* came in PJM, with MISO being the second largest. These cost savings align with the amount of clean power added from the queue, suggesting that more clean power additions would benefit New York and New England more as well.

Savings with additional clean power during July 2026 heatwave ($ million)



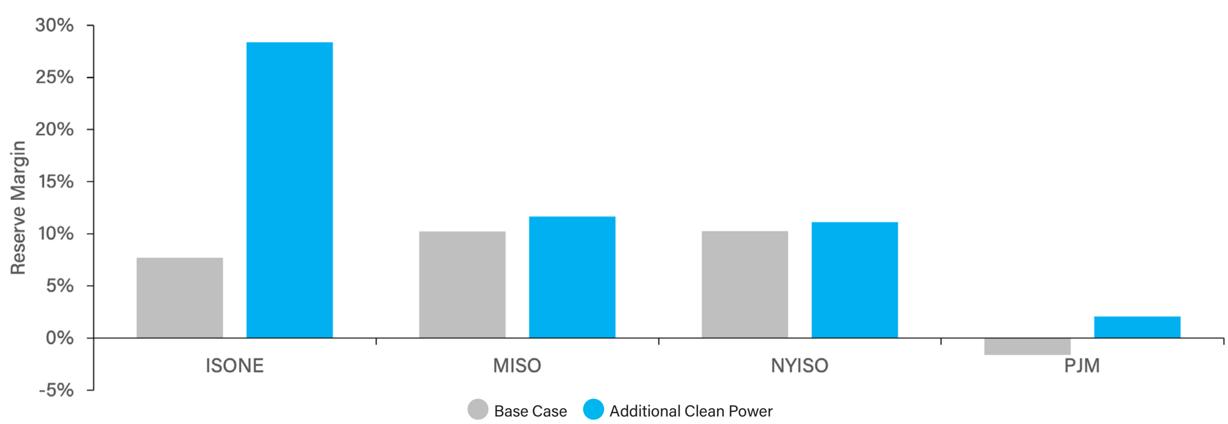
Clean Power's Role on Reliability

Additional clean power could have also strengthened grid reliability if it had been online, judging by the amount of available flexibility in ACP's model before and after the addition of clean generation. In ACP's model this additional clean power was the difference between unserved load and incurring outages and maintaining a reliable grid.

The grid's reserve margin is a measure of the available generating capacity relative to the demand for power at any given point in time. The minimum reserve margin represents the moment of highest demand relative to available generating capacity—or the tightest point in the heatwave. ACP's model saw a negative reserve margin in PJM in our *Base Case*, which in the real world translates to a demand for power that cannot be met, or outages on the system. By adding additional clean power these outages were able to be avoided.

In all cases the minimum reserve margin was improved by the addition of clean power. **This was especially true in New England, where relatively stable offshore wind and reliable battery capacity made up the bulk of clean power additions, resulting in a high degree of resilience and flexibility for the grid.** As we have seen in previous extreme weather events, clean power can be relied upon to produce power for the grid when it is needed most.

Modeled minimum reserve margin during July 2026 heatwave

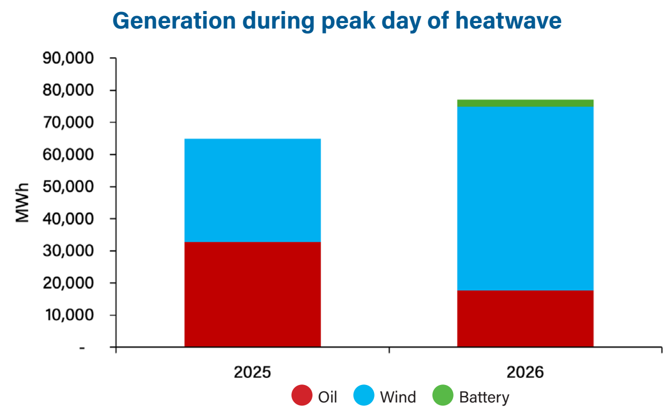


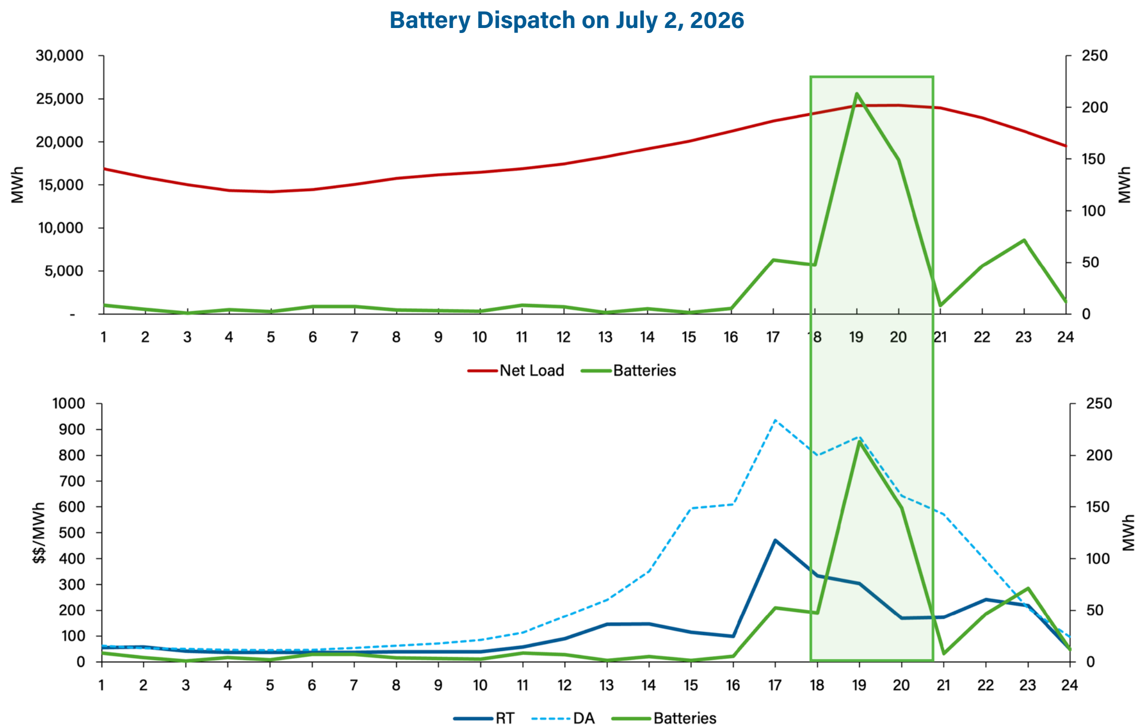
Impact of Offshore Wind and Batteries in New England

In over a year, 200+ MW of battery storage and two offshore wind facilities, Revolution and Vinyard Wind, have come online in New England.

In late June 2025, New England was hit with record-breaking temperatures that were not matched until this most recent heatwave. And while both times saw peak electricity demand reach above 25 GWh, two different dynamics were at play.

For one, New England relied less on oil this heatwave than last year. Oil is not only one of the most expensive resources to run but contains the most emissions. The amount of oil consumed over the three-day heatwave in July 2026, was almost half of the same three-day period in 2025's heatwave.[7] Thanks to the new online offshore wind facilities, wind generation increased by 80%, accounting for almost 12% of total demand on July 2, 2026, the day with the highest electricity usage. Batteries generated almost 2.3 GWh that day, up from 0 the year before. The batteries discharged when needed most, keeping real-time energy prices low. Day-ahead price was over $800/MWh, but storage deployed at peak net load, so real-time price dropped by over half.



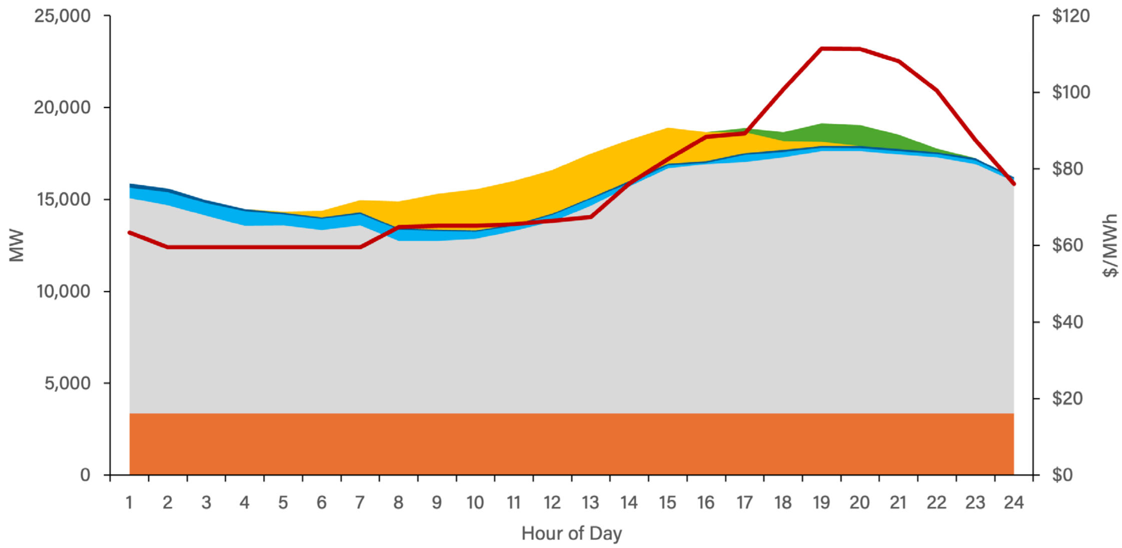


In the *Additional Clean Power Case,* ACP modeled almost 10 GW of additional clean power in New England, made up largely of offshore wind and utility-scale storage. These additions are representative of projects far along in the interconnection queue that could have come online prior to the heatwave and would have made a measurable impact to the grid.

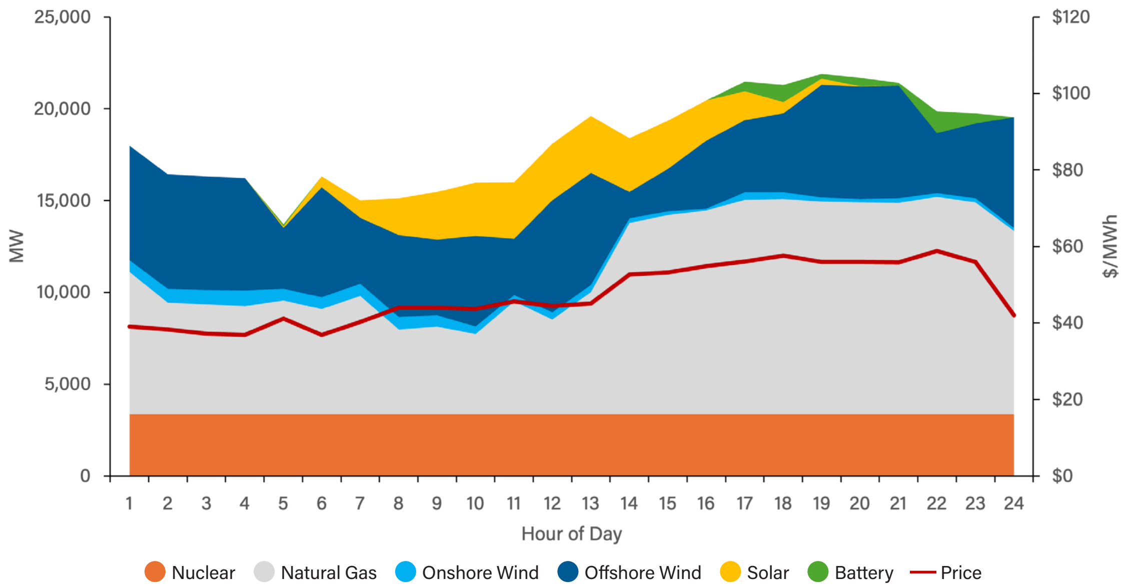
Wholesale electricity prices during heatwave would have been 13% lower, or $24/MWh, with additional clean power. Strong production of zero-cost offshore wind in the *Additional Clean Power Case* enabled New England to avoid over 219 GWh of expensive natural gas peaking power during the heatwave. This additional wind generation not only lowers power prices in New England but allows it to become self-sufficient and sell power elsewhere as net exporter instead of relying on neighboring regions. In ACP's models, New England would go from importing over 55 GWh of electricity to exporting over 7 GWh during the heatwave.

7 July 1-3, 2026 and June 23-25, 2025

Modeled ISONE Generation by Type on July 2, 2026. *Base Case*



Modeled ISONE Generation by Type on July 2, 2026. *Additional Clean Power Case*



ACP found that the minimum reserve margin during this heatwave would have increased by 20%, moving from a tighter system dynamic at 8% to comfortable operations at 28%. This is a direct result of offshore wind's higher reliability contributions and battery storage's ability to provide power when it is needed most.

The American Clean Power Association (ACP) is the leading voice of today's multi-tech clean energy industry, representing energy storage, wind, utility-scale solar, and transmission companies. ACP is committed to meeting America's energy and national security goals and building our economy with fast-growing, low-cost, and reliable domestic power.

Learn more at **www.cleanpower.org**.

X / @USCleanPower

LinkedIn / American Clean Power Association

AMERICAN CLEAN POWER