

ENERGY
TRADING WEEK
AMERICAS
26-27 OCTOBER, 2023



ALL DAY & ALL OF THE NIGHT

WORKING THE KINKS
OUT OF 24/7
RENEWABLES

SARP OZKAN | VP, COMMERCIAL PRODUCT
ENERGY TRADING WEEK AMERICAS | OCTOBER
2023



THE ENERGY INDUSTRY HAS CHANGED



WHAT WE PROVIDE

The Energy-Specialized Technology Partner



Solutions

Segment

| | Operators | Financial Services | Trading & Risk | Minerals & Land | Midstream | Oilfield Services | Power & Renewables |
|---|-----------|--------------------|----------------|-----------------|-----------|-------------------|--------------------|
| Asset Evaluation, Acquisition, Divestitures | Active | Inactive | Inactive | Active | Active | Inactive | Active |
| Asset Development & Optimization | Active | Inactive | Inactive | Inactive | Active | Inactive | Active |
| Profit Optimization | Active | Inactive | Active | Active | Active | Active | Active |
| Business Automation | Active | Inactive | Inactive | Inactive | Active | Active | Inactive |
| Cash & Budget Management | Active | Inactive | Inactive | Inactive | Active | Active | Inactive |
| Opportunity Sourcing | Active | Inactive | Inactive | Inactive | Active | Inactive | Inactive |
| ESG Reporting & Management | Active | Inactive | Inactive | Active | Active | Active | Active |
| Portfolio Management | Active | Inactive | Inactive | Active | Active | Active | Active |
| Project Tracking | Active | Inactive | Inactive | Inactive | Active | Inactive | Inactive |
| Management Forecasting | Inactive | Inactive | Active | Inactive | Inactive | Inactive | Active |
| Congestion | Inactive | Inactive | Active | Inactive | Inactive | Inactive | Active |

Analysis Market Data & Analysis

INTELLIGENT CONNECTIONS: FROM START TO FINISH

TRANSFORM HINDSIGHT INTO FORESIGHT

*Eliminate the gaps.
Actionable insights with speed & clarity through Intelligent Connections.*



Invest Intelligently
Understand how you fit within the energy evolution.



Site & Analyze
Identify the best locations to site your assets.



Design & Build
Engineer the best way to build your assets.



Manage & Optimize
Maximize your asset value.



Trade & Hedge Risk
Optimally position yourself in the market.

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Economics and Valuation Methodology

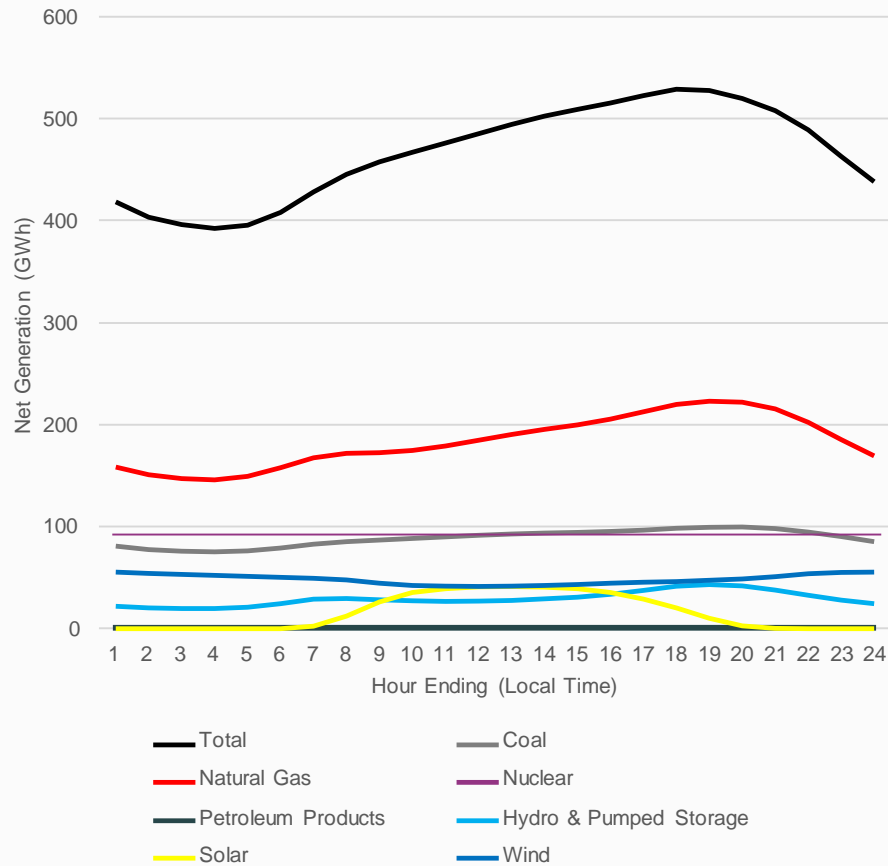
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24/7 RENEWABLES | THE PROBLEM

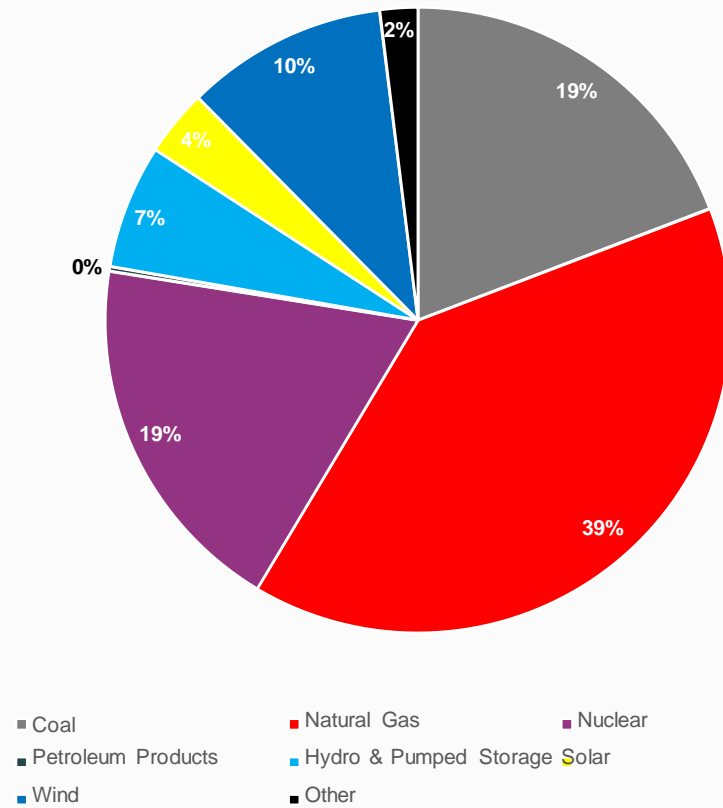
Avg Hourly Net Gen by Technology (Jan 2022-Oct 2023)



Source: Enverus, Balancing Authorities, EIA

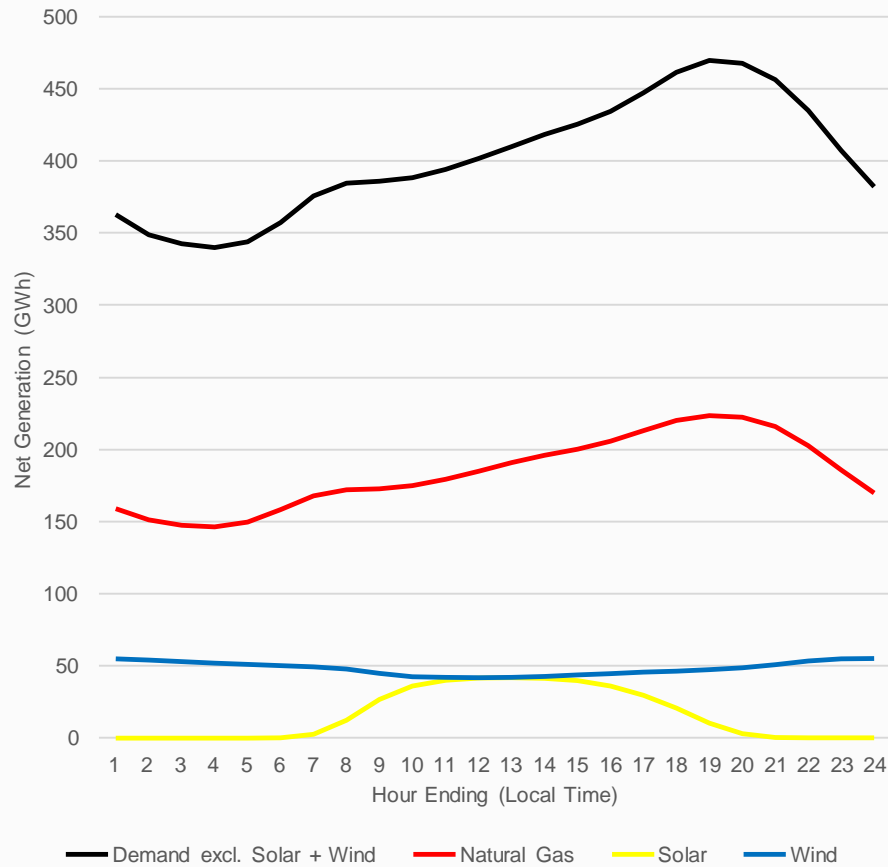


Avg Hourly Net Gen by Technology (Jan 2022-Oct 2023)

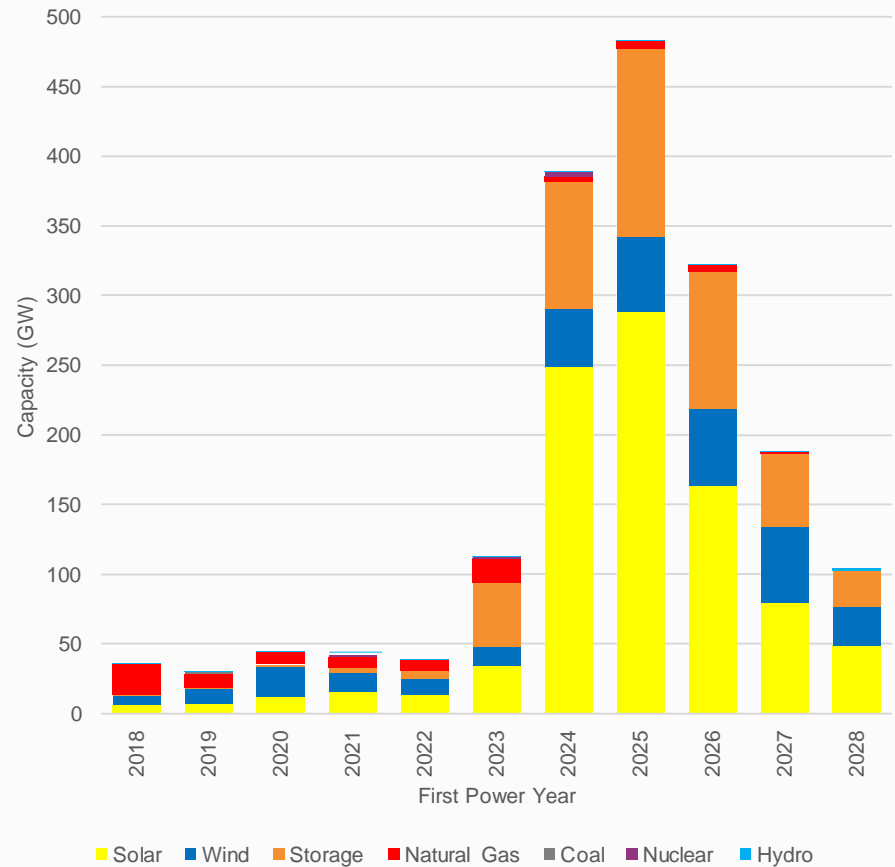


24/7 RENEWABLES | WHAT ARE WE DOING?

Avg Hourly Net Gen by Technology (Jan 2022-Oct 2023)



Capacity Operating and in Queues by Technology

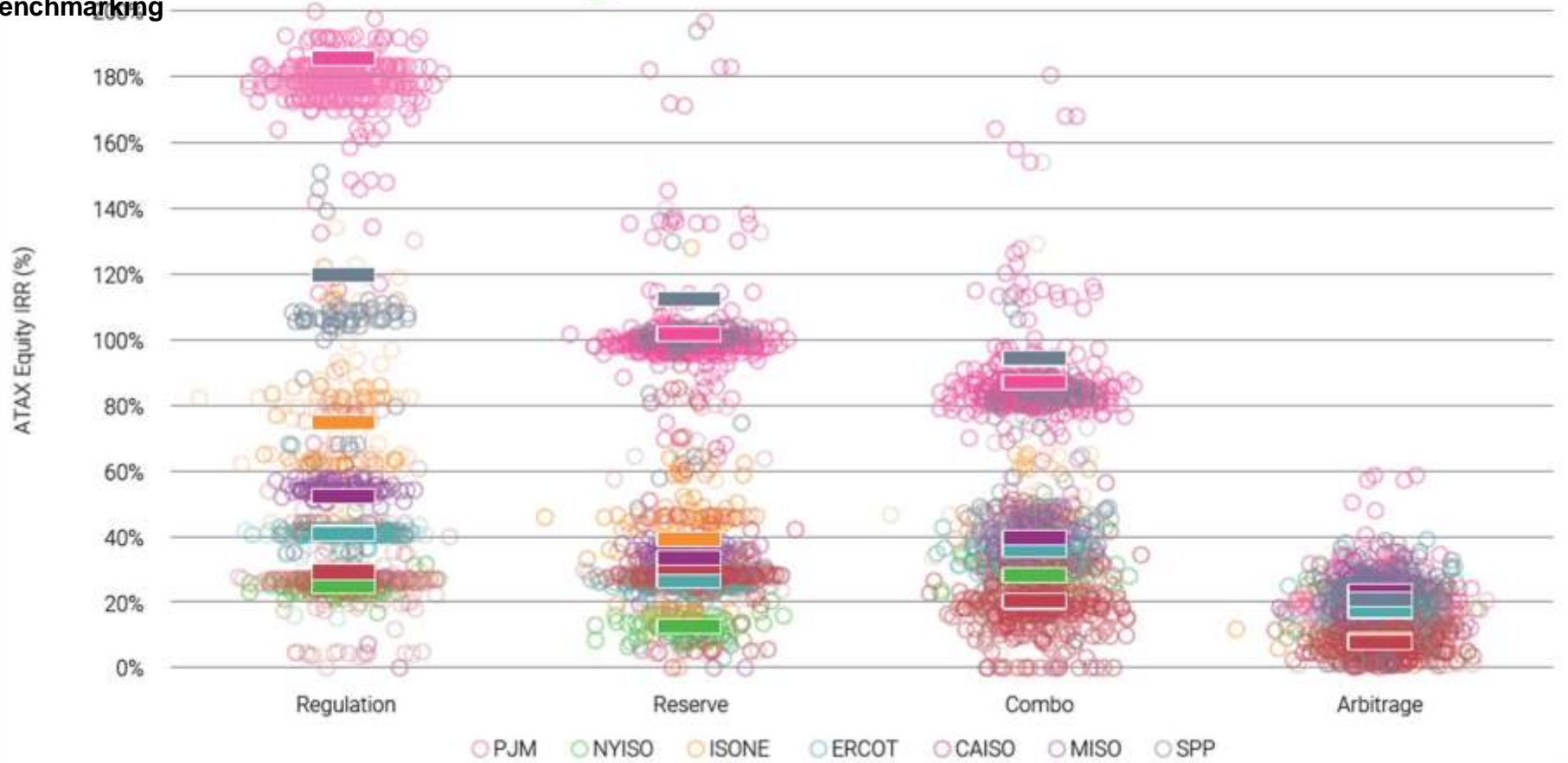


Source: Enverus P&R – Project Tracking, Balancing Authorities,



STORAGE | RETURNS LOOK GOOD FOR NOW...

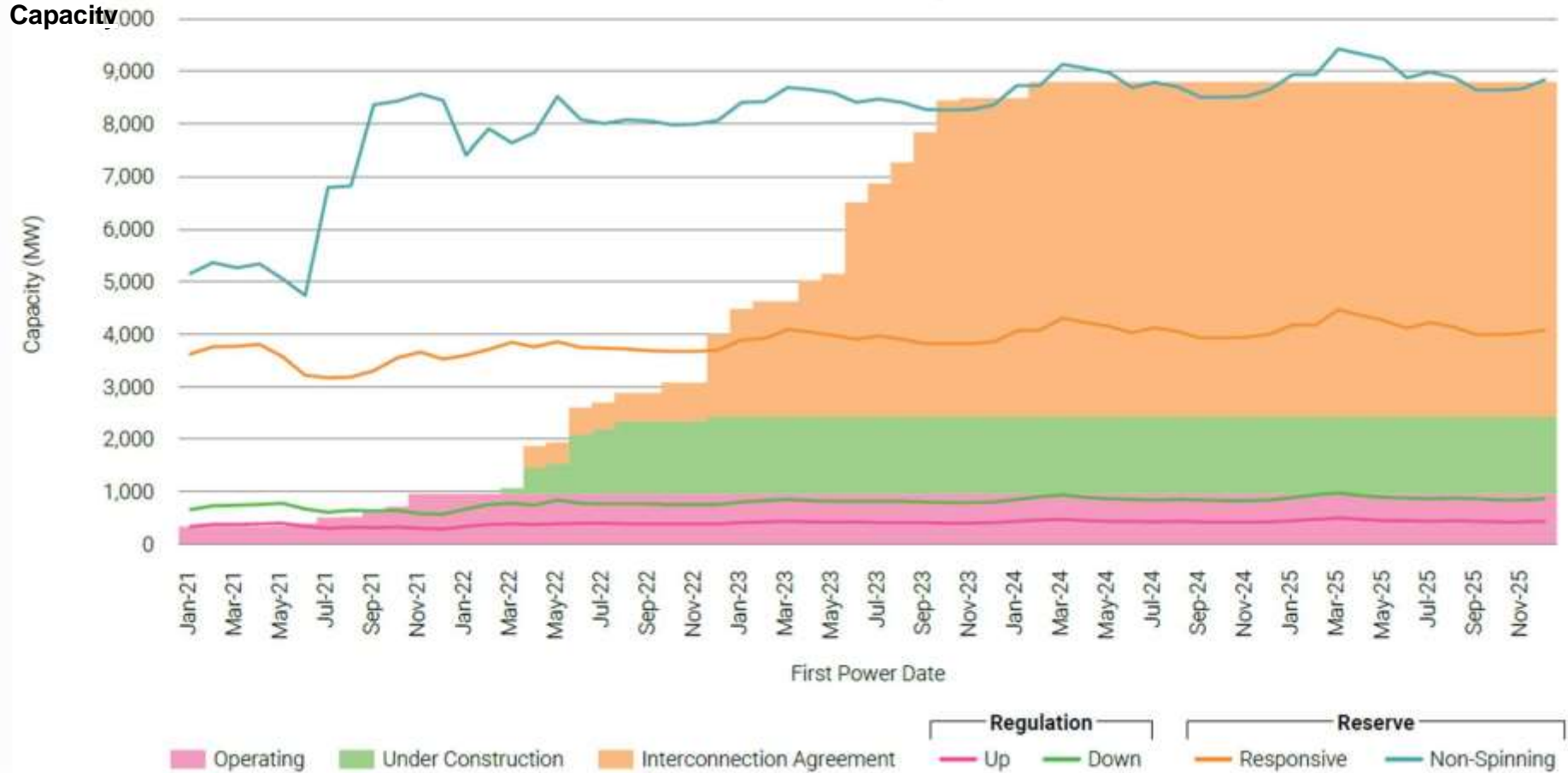
FIGURE | Storage Strategy Returns Benchmarking



Source: Enverus P&R – Economics, Enverus

STORAGE | ...BUT LIMITED FROM ANCILLARY SERVICES...

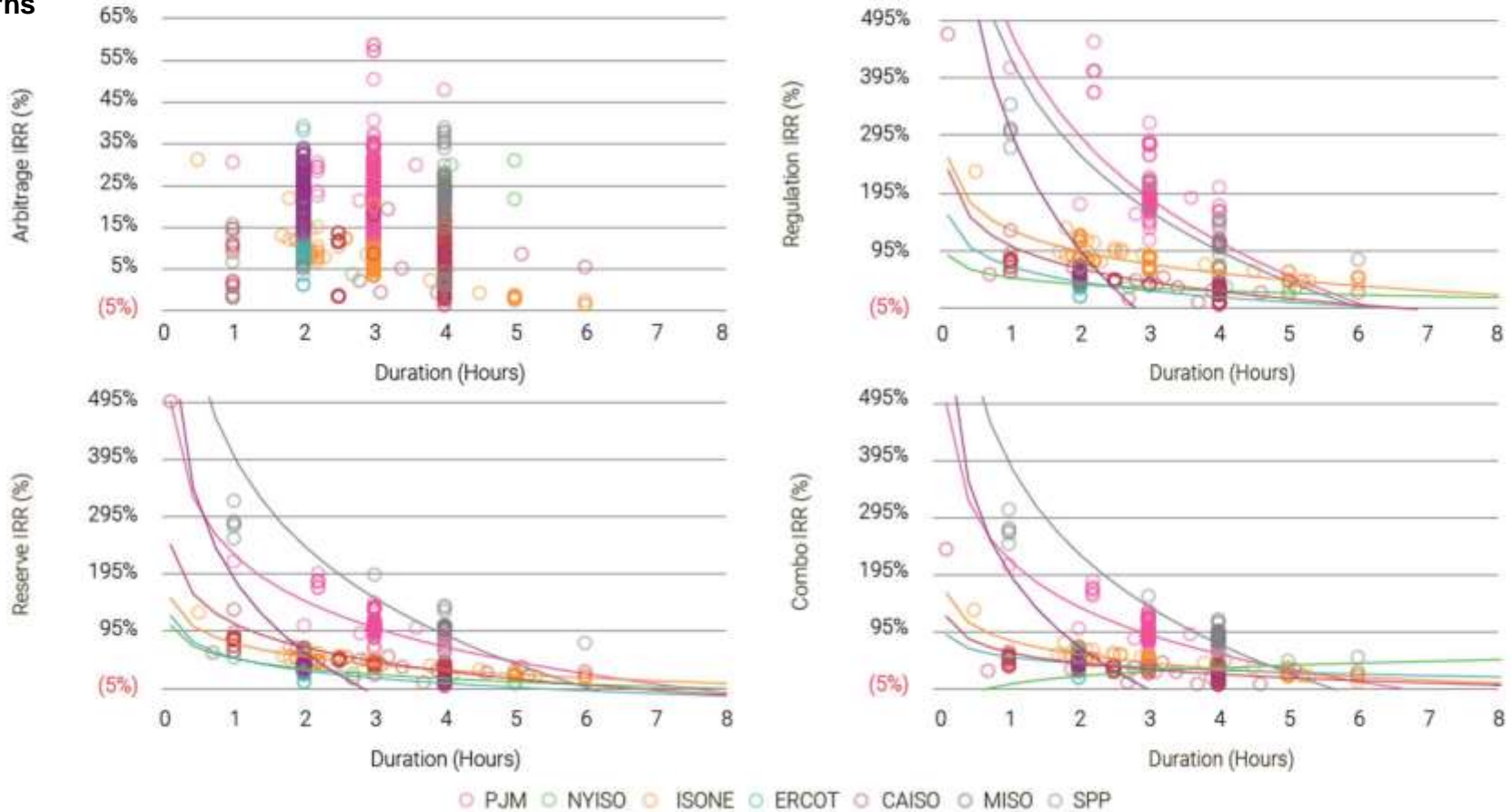
FIGURE | Forecast of Ancillary Service Requirements and Storage Project Capacity



Source: Enverus P&R - Project Tracking, Enverus

STORAGE | ...ARBITRAGE EATS ITS OWN TAIL...

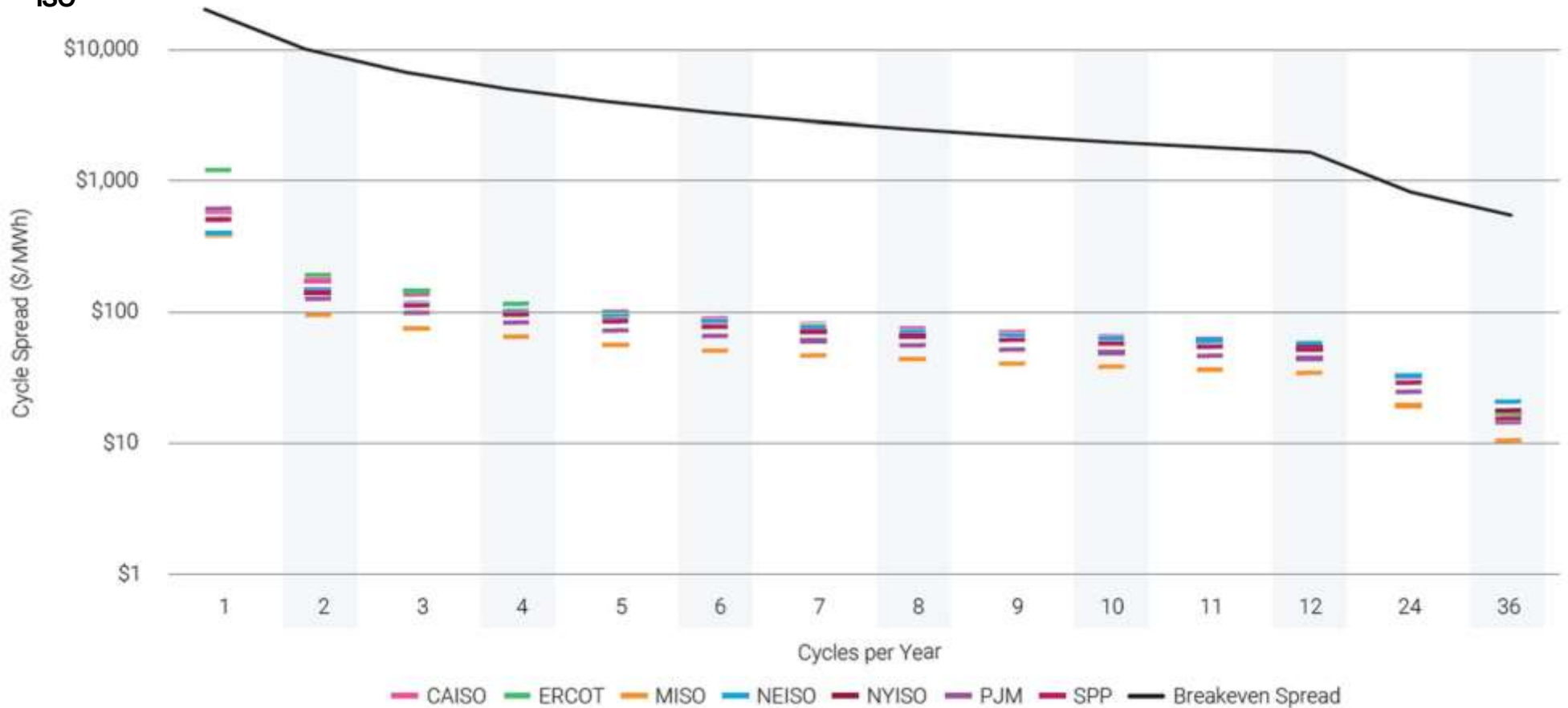
FIGURE | Duration Impact on Returns



Source: Enverus P&R – LMP, Enverus Intelligence

STORAGE | ...AND LONG-DURATION IS FAR FROM ECONOMIC.

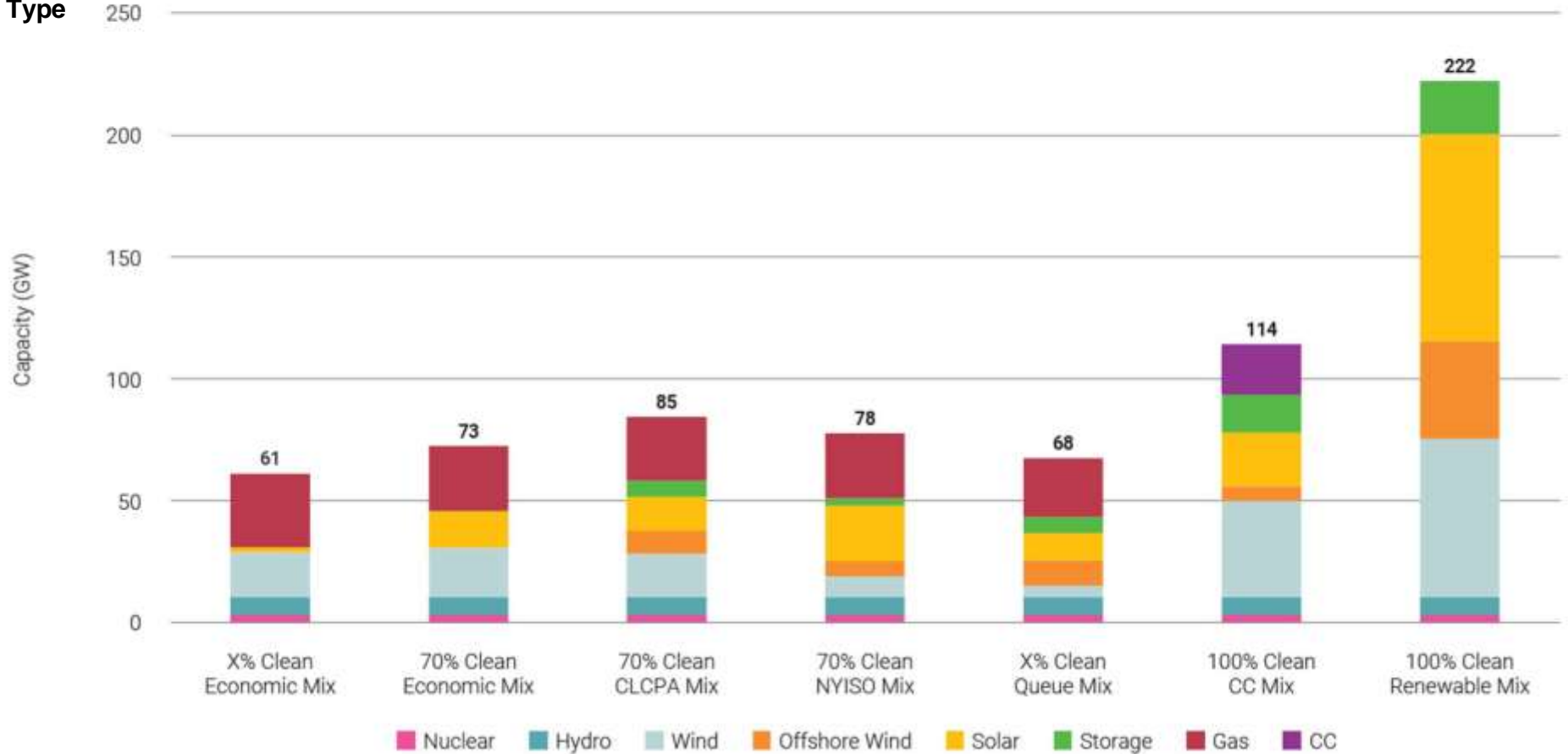
FIGURE | Achievable and Breakeven Spreads by ISO



Source: Enverus P&R - LMP, Enverus

NYISO | 70X30 MANDATE – WITH WHAT TECHNOLOGIES?

FIGURE | Optimal Installed Capacity by Type

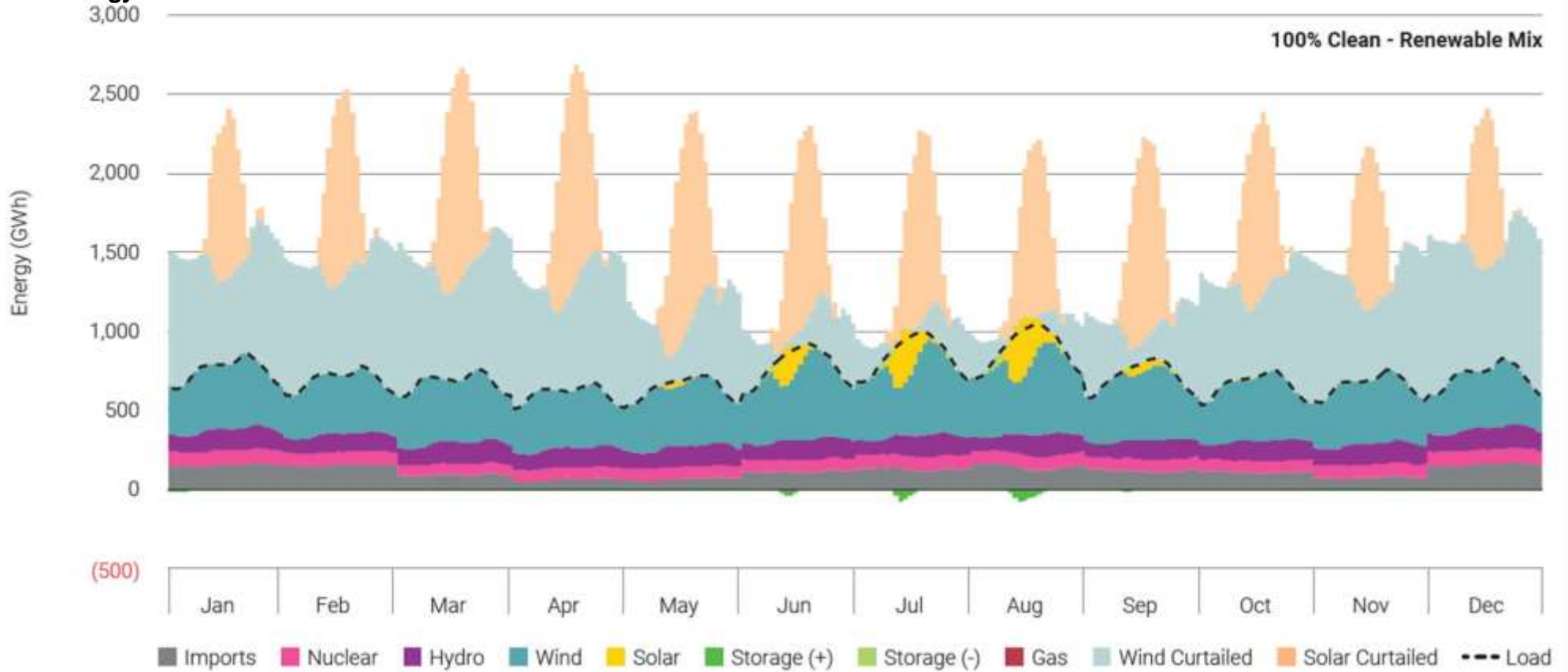


Source: Enverus

NYISO | 70X30 MANDATE – WHAT A WASTE

FIGURE | Average Generation Profile for 100% Carbon Free Renewable

Energy



Source: Enverus

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NYISO | 70X30 MANDATE – AT WHAT COST?

FIGURE | Cost of Flexibility in NY Power System



Source: Enverus



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THANK YOU!



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