ESA WholeView Service

Our **WholeView Service** provides fundamental-based outlooks and analysis for power & renewables market investors, generation owners & energy traders.

Long-Term & Near-Term Forecasts & Insights

WholeView Service provides forecasts and insights for Capacity, Renewables, Carbon, Power, Natural Gas & Transmission markets.

WholeView Service

Our WholeView Service provides both long-term and near-term outlooks for power market investors, generation owners and energy traders to make more informed decisions.

Every quarter, subscribers gain access to long-term Capacity, Carbon, Power, Natural Gas & RECs 10-year forecasts and rigorous analysis.

On a monthly basis, we provide a 9-month zonal price and natural gas forecast, plus an analysis of Henry Hub and regional basis dynamics. Our Congestion Monthly report is issued prior to the 1st regional FTR Auction.

Each week, our Bal-Week & Next-Week reports provide near-term energy price forecasts. Natural Gas FundWatch[™] provides a weekly near-term bullish or bearish forecast of market price direction.

MISO and CAISO Capacity coverages are each available as an add-on to the WholeView Service.

Pricing

Available upon request.

ESAI Power's WholeView Service:

Long-Term Reports

- Capacity Watch[™]
- Energy Watch[™]
- Emissions Watch[™]
- Renewables Watch[™]
- Transmission Watch[™]

Medium-Term Reports

- Congestion Watch[™]
- Energy Watch[™] Monthly

Short-Term Reports

- Natural Gas Fund Watch[™]
- Bal-Week & Next-Week

Supplemental Benefits

- Generation Asset Monitor
- Analyst Access

Our Research Coverage Area





Quarterly Reports - Long Term Forecasts

WholeView Service provides access to our Quarterly Power Reports in Capacity, Energy (Power & NatGas), Carbon Emissions, Renewables (RECs) & Transmission.

Our WholeView Service includes access to our Quarterly Power Reports, Energy Asset database and ad-hoc analyst access for decision support. Subscriber benefits include:

- Make critical investment decisions.
- Conduct effective energy asset revenue & .
 margin analysis.
- Stay up to date with unbiased near-term and long-term price forecasting.
- Validate Asset Valuation Models and Projections.
- Understand and manage market and regulatory risks.
- Test analytical models compared to industrystandard Capacity, Carbon, RECs, Energy & NatGas price forecast benchmarks.



Capacity Watch[™] - Quarterly analysis of capacity markets and capacity policy issues in ISO-NE, NYISO & PJM. Report includes ESAI's outlook for regional 10year capacity prices and in-depth analysis of current market issues that affect price outcomes. The impacts on reserve margin surpluses and forward capacity market values are updated and presented in each issue. CAISO & MISO coverage is available upon request.

Energy Watch Quarterly[™] – Analysis of market & policy issues affecting energy pricing over 10-years for power & natural gas. Forecasts of poolwide and zonal energy prices in ISO-NE, NYISO & PJM, as well as fuel inputs. The dynamics of market & policy changes are analyzed and impacts on energy prices are placed in the context of hi-level benchmark economics of theoretical plants in specific locations. ESAI provides annual 7x24 data resolution. Long-



term natural gas outlook includes fundamental analysis, basis spreads, LNG projects under consideration & key gas market issues.



Emissions Watch[™] – Quarterly report with our outlooks and views on the emissions markets ISO-NE, NYISO & PJM. ESAI provides regular updates and analysis on developments in the SO₂, NO_x and CO₂ emissions markets as well as price forecasts for state and regional markets. In addition, regular updates are provided on the RGGI program as well as other state-specific emissions programs.



Quarterly Reports - Long Term Forecasts

WholeView Service provides access to our Quarterly Power Reports in Capacity, Energy (Power & NatGas), Carbon Emissions, Renewables (RECs) & Transmission.



Renewables Watch[™] - Provides quarterly updates on significant policies (state and federal) facing the PJM, NYISO & ISO-NE renewable energy markets. In addition, inputs to ESAI's Class I REC supply and demand models are updated quarterly to provide timely updates to Class I REC forecasts. ESAI also covers federal issues that impact renewable policy and development in the Northeast.

Transmission Watch[™] - An in-depth look at transmission investment & development. Regional reliability issues, economic congestion relief and policy drivers in the context of RTO planning processes. Regulatory and policy initiatives as well as updates on significant projects. Our detailed quarterly reports deliver insights into Transmission concerns, financing of projects, key policy changes, merchant vs. utility buildouts. Transmission specific data includes major transmission projects under consideration in North America.





Our Generation Asset Monitor

(previously the Energy Asset Database) provides an evaluation of the outlook for construction of generation projects and plant retirements in ISO-NE, NYISO & PJM plus MISO upon request. Each project is assigned a "probability of completion factor in % terms" that is then applied to develop a forward assessment of likely capacity additions and retirements in each pool.



Monthly Reports - Medium Term Forecasts

WholeView Service provides monthly on-peak price forecasts based on expected demand, weather, transmission congestion outages, and forward gas prices.



Congestion Watch™ analyzes transmission congestion across the Northeast power systems & analyzes the underlying transmission constraints in the RTOs' Day-Ahead Markets. Reports are issued prior to first regional FTR auction closing date.

Congestion Watch™ Methodology

Our market experts assess congestion drivers and historical transmission constraints to quantify impacts on the congestion component of locational marginal prices.

Using market simulation models, ESAI Power analyzes changing demand expectations, generation and transmission outages, and transmission projects to predict congestion patterns for the following month.

Ahead of each upcoming monthly Firm Transmission Rights (FTR) auction in the Northeast, our monthly congestion report provides month-ahead assessments of the congestion component of zonal LMPs for each Northeast RTO.

Congestion Watch™ provides expert insights into key drivers for congestion pricing such as transmission and generation outages, system load and changes to fuel prices.



ENERGY WATCH MONTHLY

Energy Watch[™] Monthly provides a ninemonth zonal pricing forecast and discussion of policy changes and other key market influencers in the Northeast regions, plus a natural gas forecast that provides analysis of Henry Hub and regional basis dynamics. The energy forecast put forth each month is based on ESAI and forward fuel forecasts compared with forward market energy prices.

Energy Watch[™] Methodology

ESAI Power helps investors, generation owners, and traders understand the short-term trends that impact power and natural gas prices. We provide nine-month zonal on-peak price forecasts based on expectations for electricity demand and variations with seasonal weather forecasts, transmission and generation outages, and delivered forward gas prices. Subscribers receive a look-back analysis of the previous month's pricing dynamics to understand the specific impacts of outages and changes to expected demand conditions. Detailed analysis of the RGGI carbon markets, including assessments of auction results and the current status of RGGI allowance supply & demand are included.

Energy Watch™ provides natural gas supply and demand fundamentals are provided including tracking of pipeline development in the Northeast region.



Weekly Reports - Short Term Forecasts

WholeView Service provides short-term forecast reports that forecast energy price outcomes every week.

Bal-Week & Next Week and Natural Gas Fund Watch[™] are weekly reports that provide key insights into the wholesale power markets in PJM, NYISO and ISO-NE.

Bal-Week & Next-Week reports are published every Monday and Thursday. They provide weekly forecasts in the key Northeast power markets: PJM Western Hub, New York Zones A and J, & the ISO-NE Internal Hub. The reports provide analyst commentary on expectations for fundamental factors that present risk to short-term power prices, including



demand, supply, and congestion. For each fundamental factor, our analyst team assigns a bullish/bearish/neutral indicator and explains how forecast events, such as new transmission outages or a natural gas pipeline constraint, might affect power prices.

Natural Gas Fund Watch[™] is a

one-week outlook and analysis of key near-term factors in the natural gas market. This includes a fundamental overview, a technical trend analysis, and a comprehensive look at the commodity fund (Wall Street traders) positions on the NYMEX exchange. Each of these factors is weighted to provide the client with a near-term bullish/bearish forecast of market price direction.





Research Methodology

Energy Asset investment and power trading decisions should always be based upon fundamentally sound inputs and detailed project outlooks. While the demand side of the equation for energy asset valuations and energy pricing is relatively straightforward, getting the supply side data correct relies upon a detailed and accurate understanding of construction of generation projects, the likelihood of project completion, and energy asset retirements and those at-risk of retirement. Supply forecasts also require a broad understanding of how transmission, congestion, emissions, and renewable energy mandates impact capacity and energy price outcomes.

Independent, Unbiased Analysis

For 20 years, ESAI Power has provided investors & generation owners with objective analysis based on sound fundamental modeling. With a deep understanding of market rules and regulatory issues that impact market outcomes in PJM, NYISO and ISO-NE, ESAI's reports include price forecasts for capacity, energy, emissions, renewables, transmission & RECs. Our forecasts are published to our client base of generators, investors, regulators, and utilities - and must always remain unbiased. We are committed to covering these markets consistently in our price forecasts. ESAI is well known for publishing "the un-varnished truth" in our forward curve forecasts.



Contact Us

For more information about how we can make a difference for your business, please call Brian Doyle at **+1 (617) 678-7962** or email **bdoyle@esai.com**



About ESAI Power

ESAI Power is a market research and consulting firm that delivers focused analysis of the wholesale power markets of PJM, NYISO, ISO-NE. MISO & CAISO. Since 2001, ESAI has provided market-focused research product content and custom consulting services for Northeast power market participants, including investors (banks, privateequity, & hedge funds) & developers, generation owners & operators, utilities, regulatory bodies, traders, and end-users & buyers. ESAI Power LLC, 401 Edgewater Place, Suite 640, Wakefield, MA 01880.

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