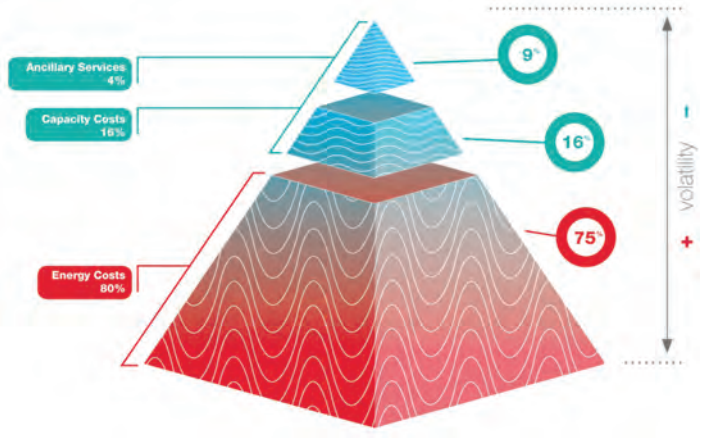
Strategic Energy Procurement: Understanding Electricity Pricing in NYISO

Competitive energy markets have come a long way in bringing more options to commercial and industrial customers. In NYISO, retail electricity providers can now customize pricing offers with dozens of cost components that can be tailored to specific consumer risk requirements. This has allowed buyers to make more strategic procurement decisions based on key operational priorities and energy usage patterns, but it has also added a new layer of complexity to the way energy is priced.

Because there are so many variables at play, GDF SUEZ Energy Resources created the energy pyramid to give buyers a better understanding of electricity pricing components and how they behave from a risk management perspective.



At the base of the pyramid is the energy costs category, which represents the total price of the energy a business consumes. These pricing variables can be very volatile, making it difficult to predict future costs.

The remaining components are comprised in the delivery category, which include the capacity and ancillary costs of flowing energy from the output side of the generator to a meter. These components are much less volatile, change less often, and are driven mostly by regulatory bodies and the independent system operator who manages the reliability of the electric grid.

Understanding the way costs are categorized in the energy pyramid is an essential first step to gaining clarity in electricity pricing. Even more important, however, is knowing how pricing components are structured and the potential methods suppliers can use to present these variables in a product offer.

Energy Costs

Six cost components make up the energy portion of the pyramid and can account for roughly 80 percent of a commercial electric bill in NYISO. These include hub energy, zonal basis, shape, straddle, imbalance, and losses.

The hubs in *hub energy* are not physical locations but rather an arithmetic average of electricity prices, determined in bulk wholesale power markets at a particularly liquid pricing point.

This component carries a market-based risk that can be mitigated by suppliers who hedge fixed-price exposure on behalf of their customers or by customers who float this component based on the day-ahead or real-time index. Pricing is determined by usage, with location, contract terms, and time of use as key factors in determining overall costs.

Zonal basis – also known as congestion – is the price differential between the hub and load zone that establishes a measure of locational value for various load pricing points. This cost component also carries a market-based risk, which is primarily hedged through swaps or Financial Transmission Rights (FTRs). FTRs are instruments that base charges on hourly day-ahead price differences across the transmission path. Overall pricing is determined by usage, with location, contract terms, and time of use as key factors in determining overall costs.

For both hub energy and zonal basis, it's important to understand that fixed pricing does not include basis to the zone. Energy delivered to the zone is normally included. However, it can be priced at the hub. In that case, basis to the zone is passed through or billed as a line item. Block energy can be priced as either hub energy or zonal energy.

Shape refers to the cost of serving a customer's unique load shape relative to a flat, round-the-clock block over the same time period. Pricing for this component is determined by mapping a customer's unique energy usage pattern against hourly prices. Generally speaking, a lower load factor typically results in a higher shape cost.

This component carries a hybrid of market-based and nonmarket-based risk that can be hedged or mitigated through risk premiums. Customers can change shape charges by shifting their load usage to off-peak hours.

Straddle is the risk premium associated with the volumetric swing provision of a contract. This component covers the risk of the customer's actual load and price shape varying from the historical load and price shape upon which the pricing offer is based.

Like shape, straddle costs are determined by energy usage patterns. It also carries a hybrid of market-based and nonmarket-based risk that can be hedged or mitigated through risk premiums or contract language that transfers the risk to the customer through wider/narrower tolerance bands.

Imbalance covers the risk of price and load changes between day-ahead schedules/prices and real-time usage/prices. It essentially covers the risk of a customer's actual load diverging from load forecasts. This cost component, which is also determined by energy usage patterns, carries a hybrid of market-based and nonmarket-based risk that can be mitigated through risk premiums.

Buyers should know that imbalance is included in fixed-price and day-ahead index products and is not applicable in products based on the real-time index. Be aware that fixed price and day-ahead index pricing offers that allow for real-time settlements for both energy and operating costs are based on the supplier's internal load forecast.

Losses include the cost of energy that is dissipated in transmission and distribution lines. It covers the expense of additional energy that load serving entities are required to supply to the grid to overcome resistance in the transmission and distribution system.

Pricing is determined by energy usage patterns, with zone, contract terms, utility, and voltage class as key factors in determining overall costs. Losses carry a hybrid of market based and non-market-based risk that can be hedged. In a fixed-price product, losses can be included in the cost or passed through as a line item. With an index product, losses can be included in the adder but are more commonly passed through as a line item.

When reviewing a pricing offer, it's important to determine whether or not this cost component includes both transmission and/or distribution losses. If the proposal only outlines transmission losses, then distribution losses will be an additional charge at the time of billing.

For a true comparison, it's essential to determine where and how line losses are accounted for in pricing proposals. Determine if the loss percentage is stated correctly, particularly when the cost component is passed through as a line item, and understand if losses are included in the price or are volume-adjusted as a line item at the time of billing. Although the latter may seem more attractive in a proposal, the actual calculated cost on the bill may be a lot higher than the charge associated with a contract that includes losses in the total price.

Capacity Costs

Capacity costs, which can vary depending on a customer's individual load factor, can account for roughly 16 percent of a large energy user's bill.

In NYISO, each load serving entity is charged for their daily unforced capacity obligation priced at the applicable zonal capacity price for the delivery year. The intent of the capacity market is to ensure resource adequacy by sending appropriate price signals to encourage resources to provide sufficient and deliverable capacity in locations where it is needed.

Capacity carries a degree of risk that is subject to the construct of each regional market. In NYISO, capacity carries a market-based risk that can be hedged or mitigated through risk premiums, a cost adjustment to cover the potential for future changes.

Pricing for the component is based on consumption ($/MW), with contract term, location, and load factor as key aspects in determining ultimate costs. Generally speaking, lower load factors result in higher capacity costs.

When reviewing pricing offers, be sure to know the capacity tag, also known as peak load contribution (PLC), being used to calculate the cost. PLC, which is determined based on an individual consumer's portion of demand on the total peak load of the electric grid, is established annually for the coming year in June and runs through May. Also, identify the capacity rate upon which the proposal is based. These rates are known several planning years in advance and are available on the independent system operator's website.

Because this component has a large degree of variability and can be accounted for in various manners by each supplier, it is very important to determine whether your supplier is using the correct PLC for your proposed contract term. Suppliers can use expected PLC or current capacity prices (with true ups), among other tricks. If you are interested in performing an apples-to-apples comparison of supplier offers, look at the details about capacity very closely and check the contract language for capacity true ups or pass through costs.

Ancillary Costs

Ancillary costs support grid reliability and make up about 4 percent of a commercial electric bill for large energy users in NYISO.

These pricing variables can be presented differently by each retail electricity provider. The following list outlines the variables included by GDF SUEZ Energy Resources in its pricing proposals for customers in NYISO. Other suppliers may categorize certain charges differently or omit them entirely from a proposal.

For example, in components where credits are a factor, GDF SUEZ Energy Resources returns costs to customers when applicable in the fixed price/index adder or as a pass-through item. However, some suppliers retain these credits and omit them from pricing proposals altogether.

To conduct an accurate comparison, be sure to account for all of the costs involved in ancillary services and understand how suppliers treat them in pricing offers. Here is an in-depth look of the costs included in this category by GDF SUEZ Energy Resources.

NYISO-Wide Uplift Charge covers the cost of dispatching economic units to provide NYISO statewide reliability. This variable carries a non-market-based risk.

Local Reliability Uplift Charge covers the cost of dispatching uneconomic units to provide locational reliability. This variable carries a non-market-based risk and pricing varies largely based on sub zone.

Reserve Charges are designed to deliver adequate operating reserve by providing spot-market support, ensuring pool-scheduled generation, and making certain demand resources are guaranteed to fully recover their daily offer amounts. This variable carries a non-market-based risk.

Regulation & Frequency Response Service pays generators for balancing support of the transmission grid and maintaining acceptable frequency limits at interconnection sites. This variable carries a market-based risk.

Black Start Service ensures reliable restoration of the grid following a shutdown of the NYISO transmission system. This variable carries a non-market-based risk.

Scheduling, System Control & Dispatch Service is a fee paid to the grid operator for running the transmission system, including dispatch, control, and scheduling. Credits are paid to transmission owners. This variable carries a non-market-based risk.

Voltage Support Service pays generators for delivering voltage support to the transmission grid. This variable carries a non-market-based risk.

Phase Angle Regulator Charges recover the costs for NYISO's monthly payment, which is needed for the economic and reliable operation of the transmission system. This variable carries a non-market-based risk.

New York Power Authority (NYPA) Transmission Access Charge is an embedded cost to recover the NYPA transmission revenue requirement not recovered through the transmission service charge. This variable carries a non-market-based risk.

Residual Adjustment is a modification to the costs associated with the operation of the transmission system and administration of the tariff by the grid operator. This variable carries a non-market-based risk that can be mitigated through risk premiums. In some cases, customers can receive a credit.

Unaccounted for Energy is a settlement mechanism for line losses. This variable carries a hybrid of market-based and non-market-based risk that can be hedged or mitigated through risk premiums. In some cases, customers can receive a credit.

Making the Right Procurement Decision

In the end, there is a lot to think about when shopping for commercial electricity. With a range of variables to consider – from cost components and energy market fundamentals to business cycles and risk tolerance – transparency in pricing offers is essential to building effective energy management strategies.

To support consumers in making clear, confident electricity purchasing decisions, GDF SUEZ Energy Resources created My Energy Navigator, a proprietary decision process designed to simplify energy buying.

Customized energy management plans are created through a three-step process that starts with an initial assessment of unique operating factors, such as key business drivers, budgetary structures, and risk tolerance.

A risk certainty profile is then generated specific to your business along with a pricing proposal that fits your company's profile. This proposal, which includes detailed information on each cost component of the plan, is fine-tuned with the help of a GDF SUEZ Energy Resources representative. Every aspect of the product is considered by exploring different cost outcomes in real time and adjusting various elements of the proposal.

Commercial and industrial customers ultimately benefit by getting the transparency and insight they need to shop wisely and choose a product that best suits their company and their budget. Before entering into your next energy contract, be sure to consider a supplier like GDF SUEZ Energy Resources that takes the time to understand important business factors, brings clarity to pricing proposals, and helps you build a strategy that makes the most sense for your business.