

For further information, contact:
Angela O'Connor, President
141 Tremont Street
Boston, MA 02111
617/835-3150 aconnor@nepga.org
www.nepga.org

Fact Sheet No. 2: How the Electricity Market Works

What is the difference between wholesale and retail electricity suppliers?

Retail electricity suppliers, who sell to end-use customers, buy their power on the wholesale market. Retail suppliers can buy electricity days, weeks, months, or years in advance from a wholesale supplier, or they can wait to buy it on the spot market on the day it is needed. Some retail suppliers are also wholesale suppliers, but most are not both. The transmission and distribution utilities still sell retail electricity to most of the customers in New England, because competitive retail suppliers have found it difficult to enter the market.

Wholesale electricity suppliers sell electricity in advance that they buy from other wholesale supplier or that they plan to generate. They can also wait to sell electricity (that they generate or buy from other suppliers) on the spot market the day it is needed. Most wholesale suppliers do not sell directly to retail customers. Some wholesale suppliers do not own generators, but simply buy and sell on the market.

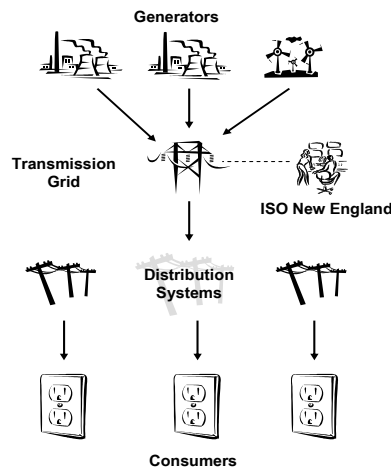
Transmission and distribution companies own the wires that carry electricity around the region, to all but the largest end-use customers, and provide delivery services. Transmission and distribution companies act as retail suppliers for customers who have not chosen a competitive retail supplier, and still deliver electricity to all but the largest customers, whether a customer has chosen a competitive supplier or not.

Finally, ISO New England, a non-profit corporation, runs the spot market and transmission system. The accompanying figure compares the flow of financial transactions among market participants with the physical flow of power on the grid.

Power Market Transactions



Physical Power Flow





How do utilities and retail suppliers acquire their electricity supplies in the wholesale market?

Retail electricity suppliers in New England purchase roughly 80% of their energy requirements in advance through financial contracts with other market participants such as generators and marketers.¹ These contracts can last days, weeks, months, or years, and are much like the contracts used by a homeowner to purchase heating oil at a fixed price for a year — by locking in a price in advance, the buyer can avoid exposure to volatile spot market prices, and therefore lessens financial risk.

Wholesale contracts are often for fixed quantities, and the retail supplier will not be able to forecast perfectly the quantities of power its customers will consume in each hour. To the extent a retail supplier has not covered its requirements with contracts, it will acquire the remainder on the spot market operated by ISO New England, and pay the hourly spot price for these purchases. Likewise, if a supplier has contracted for more than its customers end up using, it will sell the excess on the spot market.

How are spot prices for electricity determined?

Generators submit offers to the spot market, and ISO New England schedules those generators — in order of price, from least expensive to most expensive — to meet demand. The spot price fluctuates throughout the day depending on system conditions and the level of demand.

The spot price can also vary by location due to system congestion and transmission losses. At a given location, all electricity delivered at a given time has the same price, and that price is set by the most expensive generator running that can serve that location.

When demand is low, power costs less because the most expensive generators are not needed. When demand is high, such as during a hot summer day, those generators are needed and they set the price.

Why is the restructured electricity market an improvement over the old vertically-integrated market structure in which each utility company generated the power and delivered it?

The old vertically-integrated structure had a number of weaknesses. The most significant weakness was that investments in new generators were centrally-planned. So, when bad investments were made, ratepayers footed the bill. Now, in the restructured market, those investments are made by market participants in response to market conditions. Now because project developers are at risk instead of ratepayers, investments are made more efficiently, and ratepayers save money too.

¹ Calculated using 2004 data from *Annual Markets Report 2004*, ISO New England, Tables 11 and 12. http://www.iso-ne.com/markets/mkt_anlys_rpts/annl_mkt_rpts/2004/2004_annual_markets_report_pdf