



PJM Interconnection uses a system called locational marginal pricing (LMP) to establish the price of energy purchases and sales in the PJM wholesale electricity market. LMP takes into account the effect of actual operating conditions on the transmission system in determining the price of electricity at different locations in the PJM territory.

Locational marginal pricing reflects the value of the energy at the specific location and time it is delivered.

- When the lowest-priced electricity can reach all locations, prices are the same across the entire PJM grid.
- When there is heavy use of the transmission system, the lowest-priced energy cannot flow freely to some locations. In that case, more expensive electricity is ordered to meet that demand. As a result, the locational marginal prices are higher on the receiving end of the congestion and lower on the sending end.

Congestion – the heavy use of the transmission system in an area – generally raises the LMP in the receiving area of the congestion and lowers the LMP in the sending area. Operating conditions that limit the delivery capacity of specific transmission lines also can contribute to congestion and result in LMP changes.

Locational marginal prices are calculated by PJM's computer systems and posted on www.pjm.com every five minutes. This enables market participants to factor the information into their decision-making. (The current system demand, forecast demand and zonal LMPs are shown on the PJM home page; additional LMP information is available by choosing "Operational Data" or "eData Guest" from the PJM Data Shortcuts on the home page.)

The calculations used to determine LMPs take into account electricity demand, generation costs and the use of and limits on the transmission system. The price tells PJM market participants the cost to serve the next megawatt of load at a specific location. The calculations factor in all the available generating sources to come up with the mix that creates the lowest production cost, while observing all limits on the transmission system.

The use of actual operating conditions and energy flows in determining LMPs encourages the efficient use of the electric grid and enhances reliability. LMPs give price signals that encourage new generation sources to locate in areas where they will receive higher prices. It signals large new users to locate where they can buy lower-cost power. It also encourages the construction of new transmission facilities in areas where congestion is common, in order to reduce the financial impact of congestion on electricity prices.

Locational marginal prices reinforce the reliability of the electric grid. They provide price signals that make market participants partners with PJM in maintaining reliability. With the information about grid conditions provided by LMPs, market participants can see when and where the system is stressed. Prices also tell market participants when congestion or supply shortages are taking place and allow them to react quickly to the situation.