A few shocking facts about electricity markets

Pete Wilcoxen
November 8, 2013

High frequency price and load data is available for deregulated electricity markets including NYISO, PJM and CAISO. Transmission constraints can cause large variations in prices between control zones. Prices can also be negative when demand is low or when large amounts of solar and wind power are available.

Demand is highly variable

Location, season, day of the week, weather

Supply must match in real time at each location
LBMP: location based marginal price

Real time market clearing price in $/MWh

NYC price: double SYR

Huge price variation over the year

$10/MWh equals 10 cents/kWh

$12 per kWh!

-$3 per kWh!
Central and NYC prices for July

Without transmission constraints: would be scattered along 45 degree line

Tue, Wed: minor constraints
Fri: major transmission constraint

Central mean = $57
NYC mean = $79

Central and NYC prices in October

No transmission constraints but periods with excess supply.

Very large problem for Germany; will be a large problem for the US with more wind and solar

Flash Talk, Nov 8, 2013