

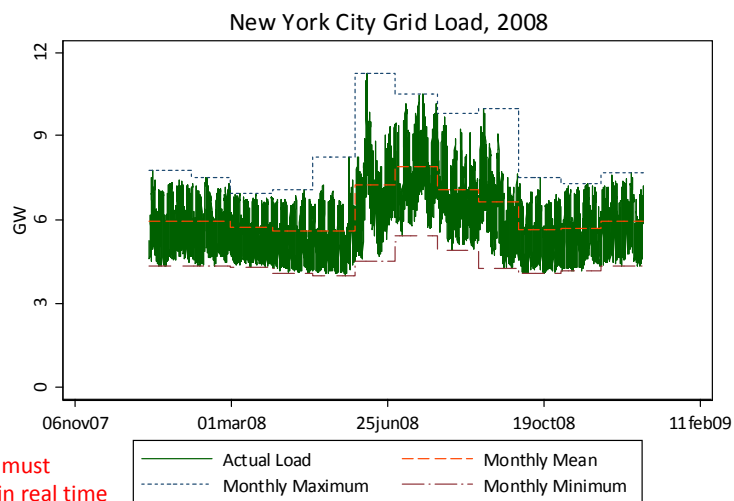
# A few shocking facts about electricity markets

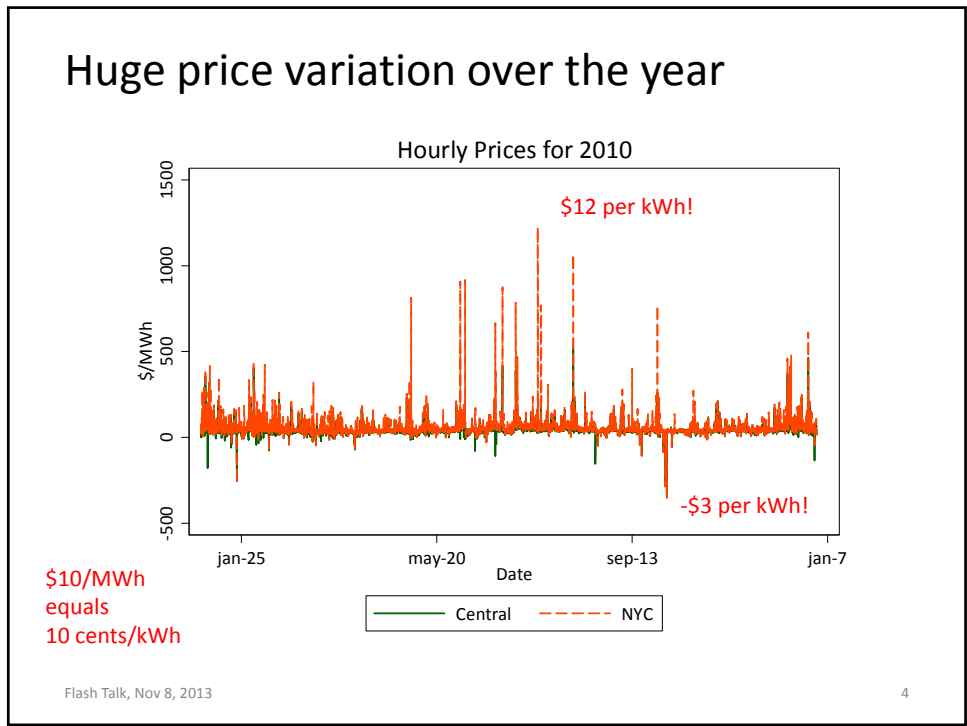
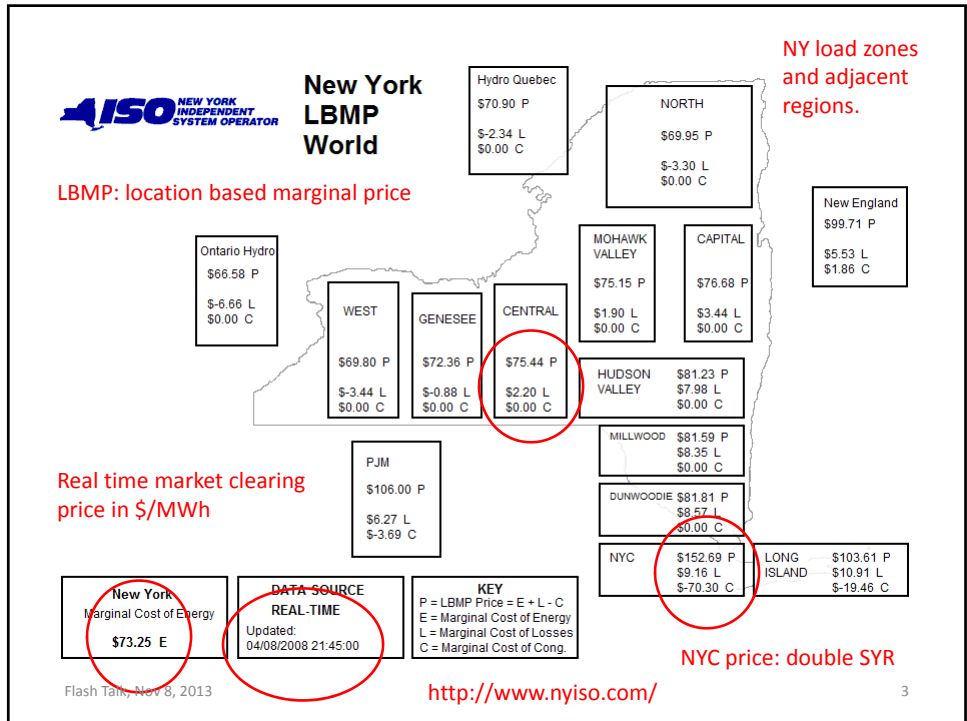
Pete Wilcoxon  
November 8, 2013

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.

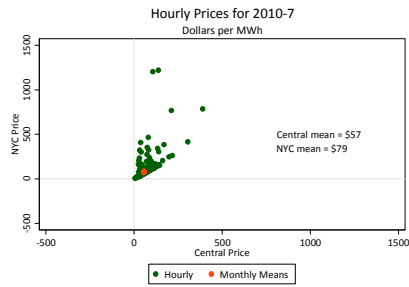
## Demand is highly variable

Location, season,  
day of the week,  
weather



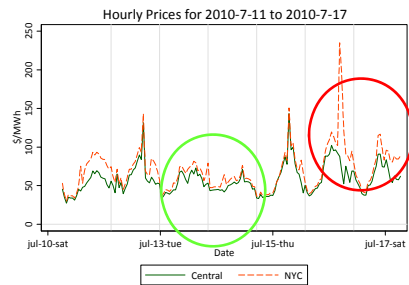


## Central and NYC prices for July



Without transmission constraints:  
would be scattered along 45 degree line

One week (not peak)

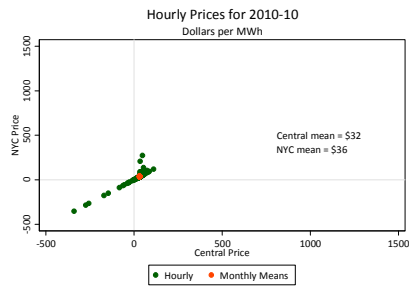


Tue, Wed: minor constraints  
Fri: major transmission constraint

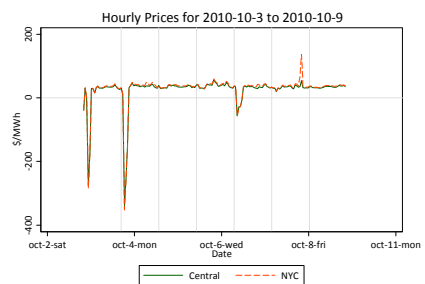
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## Central and NYC prices in October



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

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