

# A New Look at Wholesale Markets

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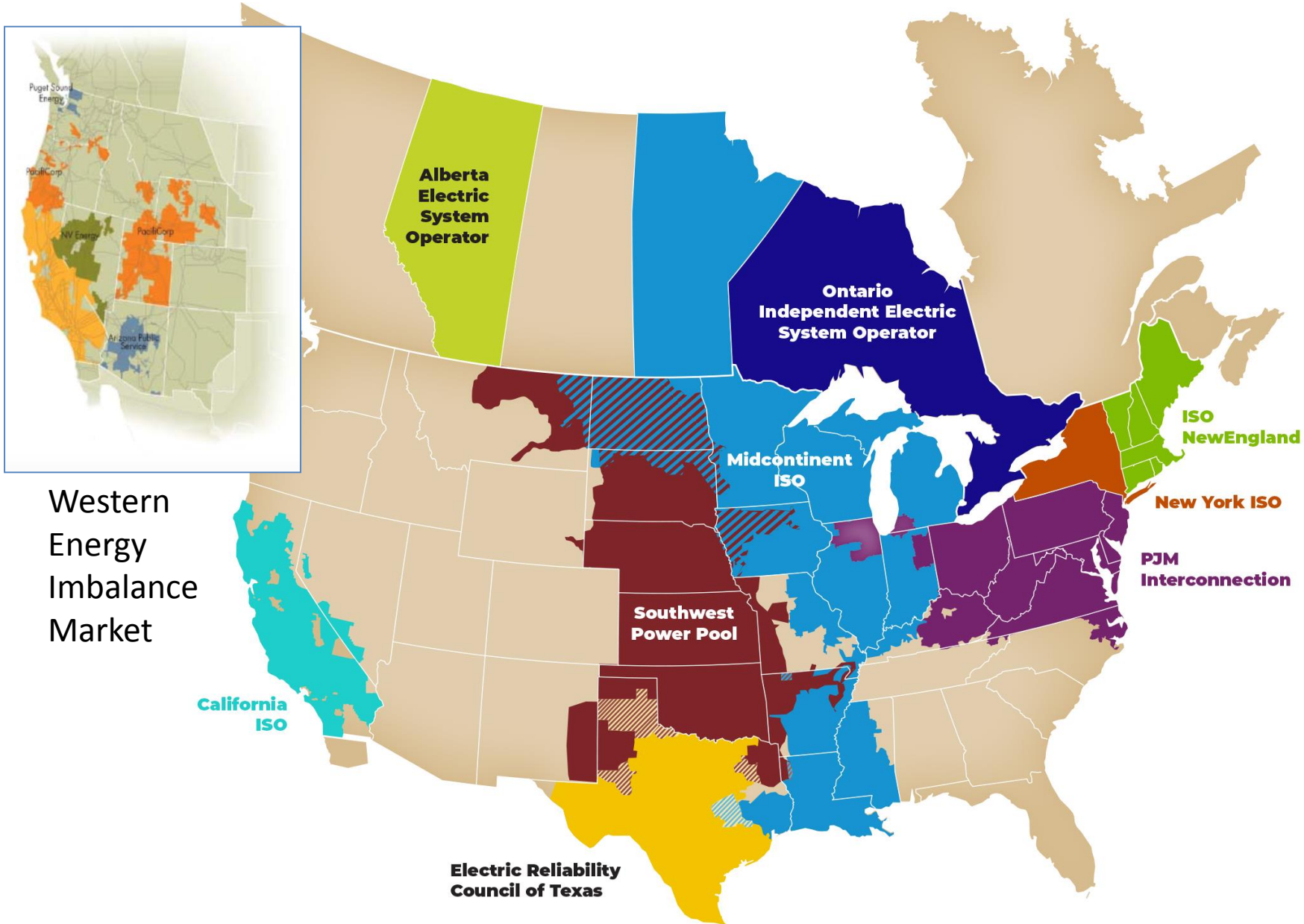
Aspen Institute Energy Forum

14 July 2018

# The Economist

25 Feb 2017

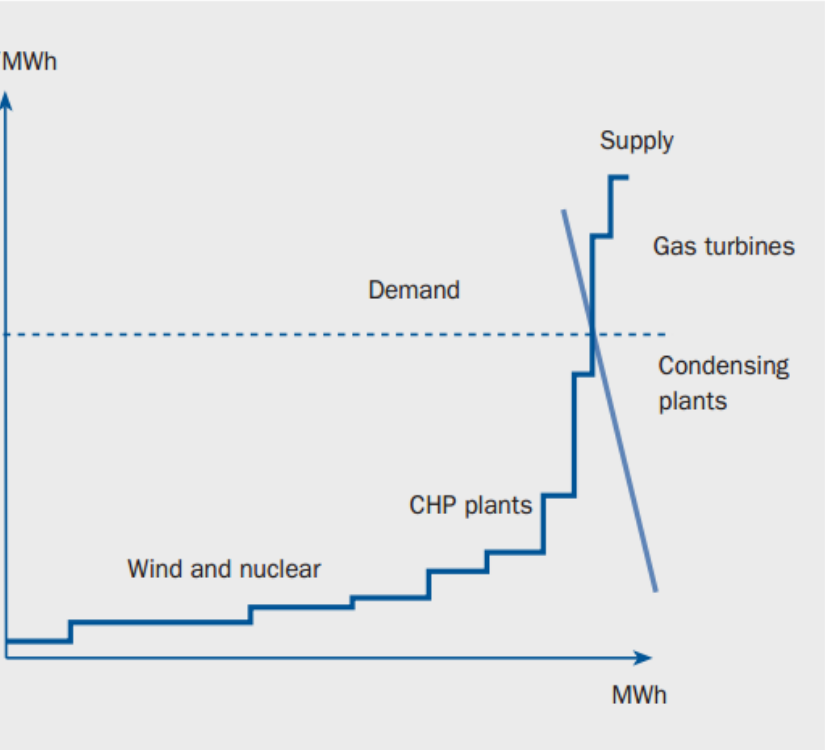
“Electricity generation (is moving) to the edge of, if not off, the grid – (and such notions) are anathema to electricity markets and business models developed for the fossil age.”



# Competitive Wholesale Markets

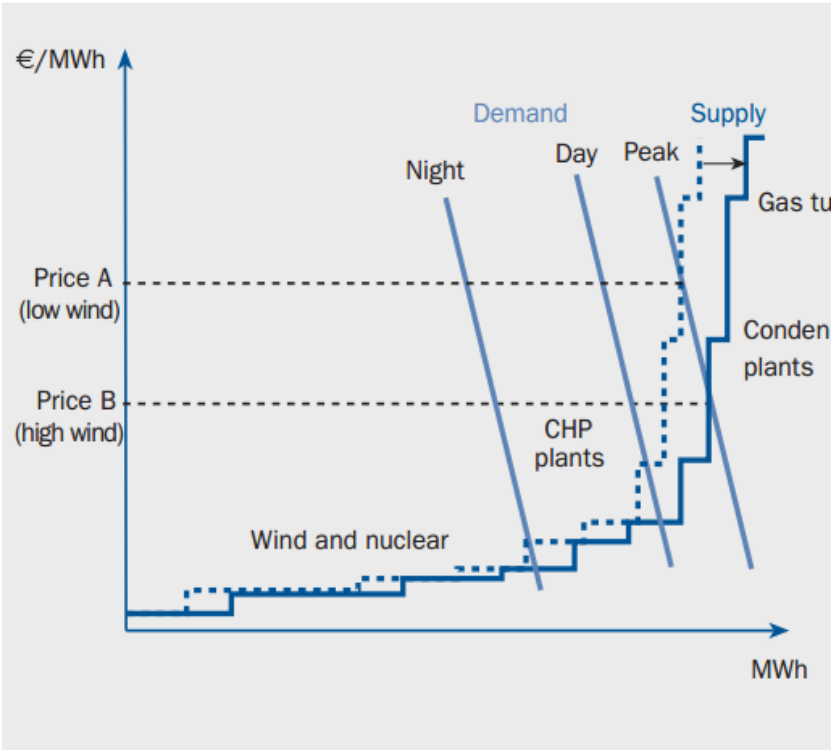
# How Energy Markets Used to Look

RE 0.10: Supply and Demand Curve for the Pool Power Exchange



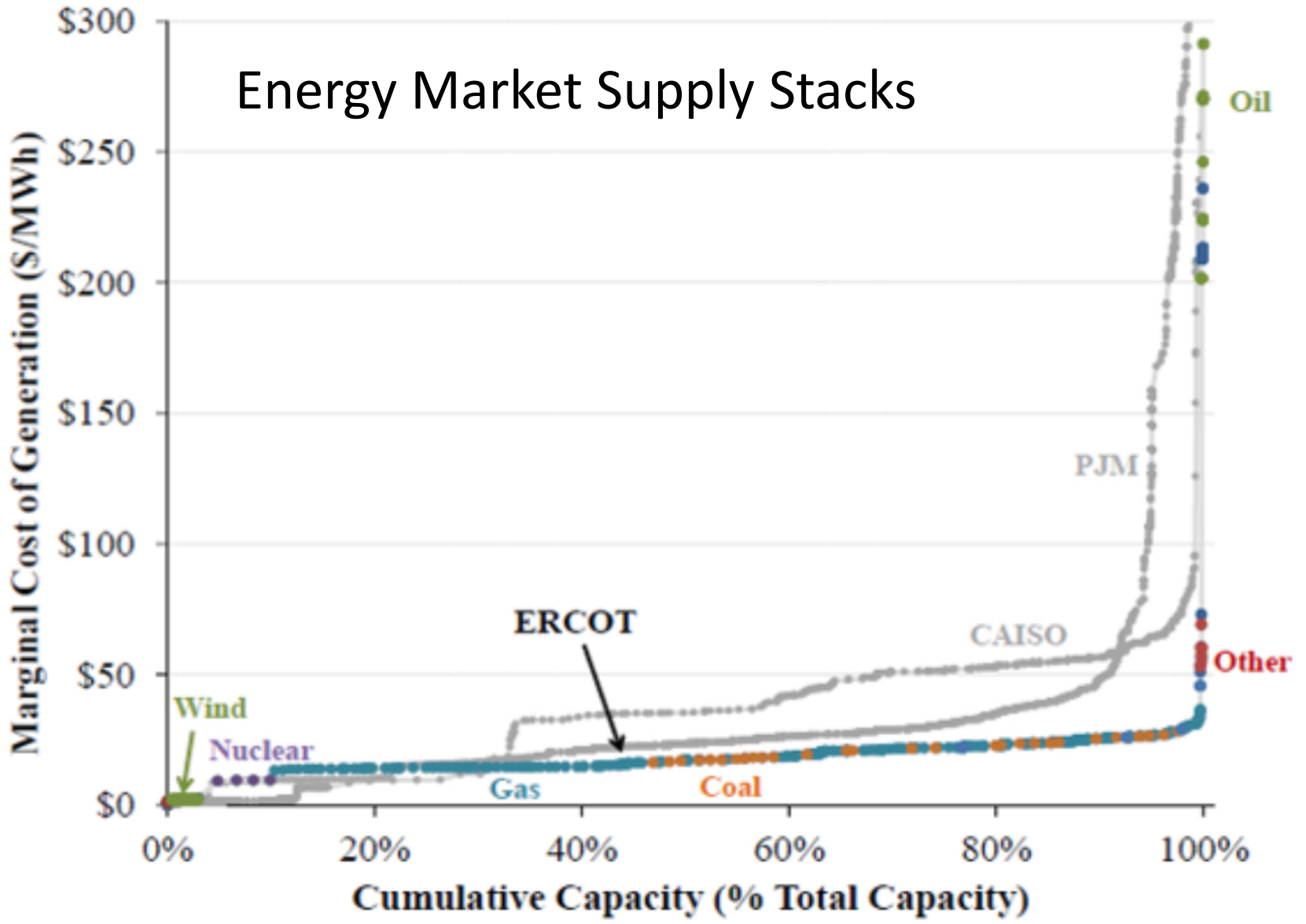
Source: Risø DTU

FIGURE 0.11: How wind power influences the spot price at different times of day



Source: Risø

# Energy Market Supply Stacks



Source: ERCOT investment incentives & resource adequacy, The Brattle Group, 1 June 2011

# So, If Energy Markets Aren't Compensatory, How To Pay For It?

- Energy-only market, high scarcity prices, with LSE bilateral procurement responsibility
- Central bilateral procurement: 2000 Cal DWR
- Central market-based procurement: PJM et al
- Carbon adder or Carbon Tax/Cap & Trade

# US Future Gen Projections

Electricity generation from selected fuels (1990-2050)  
billion kilowatthours

