

# IL 6451 Demand and Revenue Management

## Electricity and Peak Load Pricing

Anton J. Kleywegt

Due: October 10, 2003

### Readings:

1. Justin A. Colledge, Jason Hicks, James B. Robb, and Dilip Wagle, “Power by the Minute”, *The McKinsey Quarterly*, 2002, number 1, [http://www.mckinseyquarterly.com/article\\_page.asp?tk=268249:1142:8&ar=1142&L2=8&L3=48](http://www.mckinseyquarterly.com/article_page.asp?tk=268249:1142:8&ar=1142&L2=8&L3=48).
2. Andreas Florissen, Boris Maurer, Bernhard Schmidt, and Thomas Vahlenkamp, “The Race to the Bottom”, *The McKinsey Quarterly*, 2001, number 3, pp. 98–107, [http://www.mckinseyquarterly.com/article\\_page.asp?tk=268249:1078:21&ar=1078&L2=21&L3=37](http://www.mckinseyquarterly.com/article_page.asp?tk=268249:1078:21&ar=1078&L2=21&L3=37).
3. Robert Phillips, “Pricing and Revenue Optimization”, Chapter 4: Peak Load Pricing, pp. 115–136.

### Questions:

#### A. The Race to the Bottom:

1. What mistake do many incumbents make when faced with deregulation and the threat of increased competition?
2. According to the article, what are the four key factors that should influence pricing strategies?
3. What types of input is needed to use the model for optimal pricing in the article?
4. What issues does the model for optimal pricing in the article not take into account?

#### B. Power by the Minute:

1. Why does the article refer to the deregulation of the electricity market in California as “partial” deregulation?
2. According to the article, why did the partial deregulation of the electricity market in California cause problems for the utilities?
3. The technology is available to implement dynamic pricing in the retail electricity market, as in the wholesale electricity market. What additional obstacles have to be overcome?
4. According to the article, how would dynamic pricing benefit the utilities?
5. According to the article, how would dynamic pricing benefit the public?
6. Quantity discounts: Many companies give discounts if large quantities are ordered. These same companies usually have capacity constraints. The equivalent practice in the electricity industry would be to give discounts if customers use a lot of electricity, which from the article would be exactly the wrong thing to do.

- (1) Why do companies give quantity discounts?
- (2) When would quantity discounts be justified? (The answer to this question is not necessarily the same as the answer to the previous question.)
- (3) Which characteristic of demand, besides quantity, is very important to the supplier?
- (4) Give an example of a business that gives quantity discounts that you think are bad for the company's profitability.

C. Robert Phillips, "Pricing and Revenue Optimization", Chapter 4: Peak Load Pricing, Question 4, pp. 133–134.