

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Gregory Scott	Chair
Edward A. Garvey	Commissioner
Marshall Johnson	Commissioner
LeRoy Koppendrayner	Commissioner
Phyllis A. Reha	Commissioner

In the Matter of an Investigation into Using
Rate Design to Achieve the Demand-Side
Management Goals of Xcel Energy

ISSUE DATE: February 14, 2002

DOCKET NO. E-002/CI-01-1024

ORDER ESTABLISHING PROCEDURAL
SCHEDULE

PROCEDURAL HISTORY

On July 10, 2000, Northern States Power Company d/b/a Xcel Energy (Xcel) filed its resource plan for the years 2000-2014,¹ as required by statute. The plan included Xcel's forecasts for the amount of electricity that customers would demand in the future, and Xcel's ideas for meeting that demand. In the course of reviewing the plan, the Commission proposed that Xcel explore whether consumption patterns would change if the price of electricity tracked more closely the cost of providing the electricity.

On July 20, 2001, the Commission initiated this docket with its ORDER OPENING INVESTIGATION, exploring how Xcel's rate design could be adjusted to "promote energy efficiency, conservation, load-shifting, and other consumer energy use response."

On October 1, 2001, Xcel offered a "multi-tiered time-of-use" discussion proposal. The Commission received comments from the American Water Works Association, the Clean Water Action Alliance, Enbridge Energy Limited Partnership (formerly Lakehead Pipeline Company, Inc.), International Paper, the Minnesota Department of Commerce (the Department), a coalition of large energy customers called Minnesota Energy Consumers (MEC), the Minnesota Office of the Attorney General's Residential and Small Business Utilities' Division (OAG-RUD), Minnesota Power, the North American Water Office, and Xcel. The Commission also attended informational meetings on October 22 (presented by Xcel) and November 16 (presented by consultants SchlumbergerSema).

¹In the Matter of Northern States Power Company's Application for Approval of its 2000-2014 Resource Plan, Docket No. E-002/RP-00-787.

On December 28, 2001, Xcel filed its Residential Time-of-Use Rate Discussion Proposal.

This matter came before the Commission on January 31, 2002.

FINDINGS AND CONCLUSIONS

I. Background

The Commission has previously expressed an interest in setting prices to better reflect the cost of providing electricity, especially as the cost changes over time.

Historically an electric utility charges residential customers on the basis of the amount of electric energy consumed, regardless of when the electricity is consumed. But the cost of supplying electricity changes over time due to changes in demand, contract obligations, system reliability concerns, and fluctuations in the spot market for wholesale electricity. For example, a cost-conscious electric utility will tend to use its most efficient electric generators or cheapest supply contracts as much as possible. But as demand increases, the utility must rely on ever more costly sources of supply, resulting in a higher average cost per unit of output.

Inefficiency may result when the price of electricity doesn't reflect its cost. At some point, the cost the utility bears to produce an additional unit of electricity may exceed the value of that electricity to a customer. Some customers may be willing to reduce their electric consumption at times of high electricity cost, especially if they 1) know the cost and 2) bear that cost. This customer response can benefit society at large by conserving energy, reducing pollution, and reducing the costs that a utility passes on to all ratepayers.

One way to permit customers to bear the costs of their own consumption – and reap the benefits of their own conservation – is to charge different amounts for electricity consumed at different times. For this reason, the Commission has encouraged Xcel to explore expanding the availability of these options, including the consideration of various time-of-use rates.

II. Xcel's Proposal

A. Issues

Xcel hired Charles River Associates to conduct a preliminary analysis of the economic benefits of charging residential customers on the basis of both their amount of usage and their time of usage. The report identified many issues that implementing such a rate design would entail.

Even if Xcel agrees that it is sub-optimal to charge one uniform price for electricity, Xcel still must determine what rate design should replace it. Assuming costs change throughout the day, how often should rates change? For example, should rates change twice a day – once for daylight hours (when demand is higher), and once for nighttime hours (when demand is lower)? Or should they change three or more times a day? And specifically when should one rate end and the next begin?

Should rates also change throughout the year, being higher in the summer (when demand is higher) and lower in the spring and fall (when demand is lower)? If so, how many changes should occur throughout the year? On which dates should the changes occur?

Should Xcel have the discretion to announce a “critical peak price” a few times a year during periods of unusually high costs? How long should a peak price period last?

Or should Xcel simply expand its Saver’s Switch program? (Subscribers to the Saver’s Switch program receive electricity at lower rates in exchange for permitting Xcel to temporarily interrupt their central air conditioning during times of peak system demand.)

Should Xcel adopt the new rate design generally, or contingently as a pilot program? Should customers have a choice in this matter? If so, should customers be presumed to be using the old rates unless they request to use the new ones, or should they be presumed to be using the new rates unless they ask to use the old ones?

B. Xcel’s Recommendations

The report proposes five scenarios, with most incorporating three tiers of prices throughout the day, and changing prices seasonally as well. But before implementing any of the scenarios, Xcel recommends conducting additional analyses, including the following:

- Probabilistic sensitivity analysis. This involves changing assumptions one or two at a time and observing how these changes influence the program’s benefits.
- Evaluation of alternative revenue true-up mechanisms. Adopting any of the less familiar rate designs under discussion might increase the chance that Xcel would over- or under-recover revenues from ratepayers. Xcel suggests consideration of a mechanism to reconcile expected and actual revenues.
- Market research to assess customer response. Xcel does not yet know, for example, which rate design customers would prefer, or how customers would respond to being put on a mandatory program. Market research would answer some of these questions.
- A pilot program or controlled experiment. Before implementing a new rate design generally, Xcel recommends conducting controlled experiments on various programs to determine which rate designs produce the best results.

III. Commission Action

The Commission approves of the work Xcel has done, and will direct Xcel to continue in its efforts. In the interest of ensuring continued progress in this matter, the Commission will adopt the procedural schedule set forth below.

- Immediately: Xcel begins working with the Department to develop a formal time-of-use tariff or set of tariffs.
- Late March, 2002: Xcel updates Commission about its progress in preparing tariffs, designing web sites and informing customers.
- Late May, 2002: Xcel updates Commission about its progress in preparing tariffs, designing web sites and informing customers.
- July 1, 2002: Xcel begins providing customers with access via the World Wide Web to hourly data on their patterns of electric consumption.
- Early September, 2002: Xcel updates Commission about its progress in preparing tariffs, designing web sites and informing customers.
- November 1, 2002: Xcel files formal tariff or tariffs for April 1 implementation.
- April 1, 2003: New tariffs take effect.

In addition, to the extent that it is consistent with this schedule, Xcel should take whatever other steps it deems appropriate, including any of the following options:

- Convening workshops to discuss the Charles River Associates study.
- Developing a systematic research strategy to determine the optimal long-run pricing strategy within the context of this proceeding, which may include –
 - a probabilistic sensitivity analysis,
 - evaluation of alternative revenue true-up mechanisms,
 - market research to assess customer response, and/or
 - a pilot program or controlled experiment.
- Pursuing marketing efforts.
- Filing a rate case or rate design case.

The Commission looks forward to the further development of efficiencies for Xcel's residential electric consumers.

ORDER

1. Xcel, working with the Department, shall file a formal time-of-use tariff or set of tariffs by November 1, 2002, for implementation by April 1, 2003.

2. By July 1, 2002, Xcel shall begin providing customers with access via the World Wide Web to hourly data on their patterns of electric consumption.
3. Xcel shall keep the Commission informed about its progress in preparing tariffs, designing web sites and informing customers. The Commission delegates to the Executive Secretary the authority to schedule meetings for this purpose in late March, late May and early September.
4. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

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