

**BEFORE THE
PUBLIC SERVICE COMMISSION OF UTAH**

**IN THE MATTER OF THE APPLICATION)
OF PACIFICORP FOR APPROVAL OF ITS)
PROPOSED ELECTRIC SERVICE SCHEDULES) DOCKET NO.04-035-42
AND ELECTRIC SERVICE REGULATIONS)**

**DIRECT TESTIMONY
AND EXHIBITS
OF
BRIAN R. BARBER
COST OF SERVICE/RATE DESIGN**

**ON BEHALF OF
THE KROGER CO.**

**J. KENNEDY AND ASSOCIATES, INC.
ATLANTA, GEORGIA**

JANUARY 2005

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16
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DIRECT TESTIMONY OF

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BRIAN R. BARBER

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I. QUALIFICATIONS AND SUMMARY

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24

Q. Please state your name and business address.

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27

A. Brian R. Barber, J. Kennedy and Associates, Inc. ("Kennedy and Associates"), 570
Colonial Park Drive, Suite 305, Roswell, Georgia 30075.

28
29

Q. What is your occupation and by whom are you employed?

A. I am a Manager with Kennedy and Associates, a firm of utility rate, planning, and
economic consultants in Atlanta, Georgia.

**Q. Please describe briefly the nature of the consulting services provided by Kennedy
and Associates.**

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A. Kennedy and Associates provides consulting services in the electric and gas utility industries. Our clients include state agencies and industrial electricity consumers. The firm provides expertise in system planning, load forecasting, financial analysis, cost-of-service, and rate design. Current clients include the Georgia and Louisiana Public Service Commissions, and consumer groups throughout the United States.

Q. Please state your educational background and professional experience.

A. I graduated from the Georgia Institute of Technology in 1981, receiving the degree of Bachelor of Industrial Engineering with highest honors. I graduated from the Goizueta Business School of Emory University in 1995 with a Master's in Business Administration. I have also attended the Advanced Regulatory Studies Program offered by the National Association of Regulatory Utility Commissioners ("NARUC"). Following my graduation from Georgia Tech, I joined the Staff of the Georgia Public Service Commission ("GPSC" or "Commission") as a consultant assisting in the analysis of utility rate issues. In November 1981, I accepted the position of Public Utilities Engineer with the Commission. My responsibilities included the analysis of rate cases for electric, telephone, and gas utilities as well as the monitoring of fuel cost recovery clauses and purchased gas adjustment clauses.

During my four years at the Commission, I gained increasing responsibilities,

1 becoming a lead member of Staff teams responsible for all aspects of utility rate cases,
2 including the preparation of cross examination, the analysis, development, and
3 presentation of selected issues, and the presentation of Staff recommendations to the
4 Commission. I participated in the analysis of tariff and rate design changes as well as
5 major special projects including the areas of generation planning. I also presented
6 testimony before the Commission regarding the fuel cost recovery factor for a major
7 electric utility

8
9 In August 1985, I joined the firm of Kennedy and Associates as a Senior Consultant.
10 In June 1988, I was promoted to the position of Manager. My responsibilities include
11 providing consulting services in the areas of cost of service, revenue requirements,
12 regulatory policy, rate design, generation planning, economic analysis, and load
13 forecasting.

14
15 Specific projects I have been involved in include an historical review of generation
16 planning and coal procurement prudence issues as well as current generation planning
17 studies. I have analyzed gas and electric cost of service and jurisdictional allocation
18 studies as well as overall revenue requirements of regulated utilities. I have testified on
19 revenue requirements of regulated utilities before the Georgia Public Service
20 Commission, the Louisiana Public Service Commission, and the Ohio Public Utilities
21 Commission.

1 I left Kennedy and Associates at the end of 1993 to pursue my Master's Degree full
2 time at the Goizueta Business School. However, I rejoined the firm in 1996 in the
3 position of Manager. A copy of my testimony appearances is attached as Exhibit
4 ____ (BRB-1). I have been involved in varied projects involving utility production
5 costs, revenue requirements, cost of service and rate design, including providing
6 analysis of UP&L's proposals in the most recent rate case, and participating in the
7 Rate Design Taskforce on behalf of The Kroger Co.

8
9 **Q. On whose behalf are you testifying in this proceeding?**

10
11 A. I am testifying on behalf of The Kroger Co. ("Kroger"). Kroger is one of the largest
12 grocery retailers in the United States, and operates 45 grocery stores in the Utah
13 Power & Light service territory under the Smith's banner. Kroger also operates dairy
14 and dough manufacturing facilities in Utah. These facilities purchase more than 158
15 million kWh of electricity from UP&L annually, with the retail facilities primarily
16 purchasing under Rate Schedule 6, and the manufacturing facilities under Rate
17 Schedule 9.

18
19 **Q. What is the purpose of your testimony?**

20
21 A. I have been asked by Kroger to review and comment on the Company's General
22 Service rates, and the changes proposed by UP&L, and to propose alternatives where

1 appropriate.

2

3 **Q. Would you please summarize your testimony?**

4

5 A. Yes.

6 • **The Company's proposed Schedule No. 6 contains substantial demand related**
7 **costs in the energy charge that creates intra-class subsidies, improper price**
8 **signals and inequitable rates when compared to similar customers who take**
9 **service at transmission voltage.**

10

11 • **The Commission should adopt a cost-based energy charge for Schedule No. 6.**
12 **If, based upon the final rate award in this case, there is a need for gradualism,**
13 **there should be a three year phase-in that would remove one-third of the**
14 **demand related costs from the energy charge each year.**

15

16 **Q. Would you briefly describe the Company's existing General Service rates?**

17

18 A. The Company's tariff contains three primary General Service rate schedules, and there
19 are optional Time-of-Day schedules associated with each of the three. Schedule No. 23
20 is for small customers, limited to a maximum 35 kW billing demand, served at either
21 secondary or primary voltage. This rate assigns the demand costs for the first 15 kW of
22 billing demand into the energy charges, with a slight seasonal differentiation in the
23 excess demand charges. The energy charges reflect a single declining block structure
24 with the break at 1,500 kWh per month, and both energy blocks reflect seasonal
25 differentiation. There is also a demand charge credit for customers taking service at
26 primary voltage.

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Schedule No. 23B is a Demand Time-of-Day option for customers qualifying for Schedule No. 23. The structure and charges are identical, except that the measurement of billing demand is restricted to the On-peak hours.

Schedule No. 6 presently has no size requirements or limitations. General Service customers who take service at secondary or primary voltage, but do not qualify for Schedule No. 23 are served on this rate schedule. The demand charge is seasonally differentiated, with the Summer demand charge set about \$2.00 per kW higher than the winter charge. This differentiation was put into the rate as a result of the Company's most recent rate case. There is a single energy charge effective in all hours of the year. There is also a demand charge credit for customers taking service at primary voltage.

There are two optional Time-of-Day rates associated with Schedule No. 6. The Demand Time-of-Day option is Schedule No. 6B, which uses the same rates as Schedule No. 6 but restricts the measurement of billing demand to the on-peak hours. Schedule No. 6A is the Energy Time-of-Day option. It has significantly lower demand charges (representing facilities costs), with the remaining demand costs being collected through much higher energy charges for the on-peak periods. Off-peak energy charges are lower than the Schedule No. 6 energy charge.

Schedule No. 9 is restricted to those customers served at transmission voltage, 46,000

1 volts and greater. There are no minimum or maximum size restrictions for customers
2 who take service under this rate schedule. The structure of the rate is the same as
3 Schedule No. 6, but the energy charge is significantly lower. The demand charges are
4 also lower, reflecting the fact that distribution facilities are not required to serve these
5 customers. Schedule No. 9A is the Energy Time-of-Day rate, which is closed to new
6 service. It has a facilities demand charge and a much higher on-peak energy charge.
7 The off-peak energy charge is slightly higher than the Schedule No. 9 energy charge.

8
9 **Q. What changes to the General Service rate schedules has the Company proposed?**

10
11 A. The Company proposes no structural changes to Schedule No. 23. The demand and
12 energy charges are increased on a roughly equal percentage basis. The Company is
13 proposing significant changes for Schedule No. 6, by splitting the schedule into two
14 separate rates. Current Schedule No. 6 customers with billing demands less than 1,000
15 kW will remain on Schedule No. 6. UP&L proposes to increase the demand charges
16 on this schedule (revised No. 6) slightly more than the energy charges.

17
18 The major structural changes for the General Service rates occur with the
19 implementation of mandatory Time-of-Day rates for some customers. The largest
20 Schedule No. 6 customers, with billing demands greater than 1,000 kW, will be placed
21 on a newly implemented Schedule No. 8. This rate schedule and the existing Schedule
22 No. 9 will be designed to reflect Time-of-Day pricing, following the general structure

1 and principles that came out of the Rate Design Taskforce following the last UP&L rate
2 case. These rates will reflect two demand charges. A facilities charge will be based on
3 the maximum monthly demand, with a separate On-peak demand charge that will be
4 seasonally differentiated. On-peak energy charges will also be seasonally
5 differentiated, while the Off-peak energy charges are constant for the year. The energy
6 charges in the summer reflect a 1 cent per kWh On-peak/Off-peak differential, while
7 the winter On-peak charge is 0.3 cents per kWh higher than the Off-peak charge.

8
9 For Schedule No. 9, the Company's proposed rate on average shifts costs out of the
10 energy charge when compared to present rates. For Schedule No. 8, the average energy
11 charges are increased from the present Schedule No. 6, but by a smaller percentage than
12 the overall rate increase.

13
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15 **II. UP&L PROPOSED SCHEDULE NO. 6**

16
17 **Q. Does the Company's proposed Schedule No. 6 rate reflect an appropriate rate**
18 **design?**

19
20 A. No. There are three major problems with the proposed Schedule No. 6. First, the
21 proposed rate elements do not reflect the cost of service study, thus creating significant
22 intra-class subsidies. Second, by failing to reflect cost of service, the Company's

1 proposed rate is sending inappropriate price signals to customers regarding the use of
2 demand and energy. Finally, because of the inconsistency between the collection of
3 demand costs between Schedule Nos. 6 and 9, the Company's proposed rate is
4 providing inappropriate price signals regarding the choice of service voltage.

5
6 **Q. Please describe why the Company's proposed rates result in intra-class subsidies.**

7
8 A. In a homogenous rate class, there are no intra-class subsidies regardless of how the rate
9 is designed. If every customer in the rate class shares the same load characteristics, it
10 does not matter whether all of the revenue requirements are collected through a demand
11 charge or an energy charge. Each customer will pay the same amount, which is equal
12 to the allocated cost of serving each customer. As the customers in a rate class grow
13 more diverse, however, rate elements which do not track the allocated cost of service
14 result in some customers paying more than their contribution to the allocated class cost,
15 while others pay less. This results in rates which are inequitable.

16
17 **Q. How does the proposed Schedule No. 6 deviate from the Company's cost of**
18 **service study?**

19
20 A. The Company's proposed Schedule No. 6 is designed to recover a significant amount
21 of costs that are classified and allocated as demand-related through the energy charge.
22 The Company's witness, William R. Griffith, recognizes in his direct testimony that the

1 cost of service study supports a lower energy charge (page 14, lines 2 through 4).
2 However, rather than design the rate to reflect cost causation, the Company has
3 proposed only a slight differential in the increases between demand and energy charges.
4 Since the present Schedule No. 6 energy charge is already above the average energy-
5 related costs from the cost of service study, the Company's proposal actually increases
6 the intra-class subsidies in the rate.

7
8 **Q. Are the load characteristics of the Schedule No. 6 rate class customers relatively**
9 **homogenous, which would mitigate the intra-class subsidies?**

10
11 A. No. The combined Schedule No. 6 and Schedule No. 8 classes (corresponding to
12 present Schedule No. 6) represents over one-third of the kWh sales and revenues from
13 UP&L Sales to Ultimate Customers. Even after the split that creates Schedule No. 8 as
14 a separate rate class, Schedule No. 6 continues to be approximately 26% of the kWh
15 sales and 27% of the revenues of the retail jurisdiction. Customers on Schedule No. 6
16 can include small and large commercial facilities, as well as small and medium sized
17 manufacturing facilities. It is both a commercial and an industrial rate.

18
19 For a relatively simple demand/energy rate such as Schedule No. 6, the most relevant
20 load characteristic that differentiates customers is load factor. Exhibit ____ (BRB-2)
21 shows a breakdown of the historic test period bills for Schedule No. 6 aggregated by
22 the maximum annual billing demand of the customer. The columns in the middle of

1 this schedule represent those customers who fall within that particular load size and
2 classification, while the columns to the right represent the total of all customers up to
3 and including that load size and classification. The calculated measures shown
4 represent the percentage of total Schedule No. 6 bills, annual billing demand and
5 annual kWh sales in that grouping, the average monthly demand for that grouping
6 (kWh/bills*730), and the average monthly billing demand (kW/bills). The final
7 measure shows the average billing demand load factor.

8
9 From reviewing this analysis it is clear that even when aggregated in this manner there
10 are significant differences in the load characteristics of the customers on Schedule No.
11 6. The first two blocks, representing Commercial and Industrial customers whose
12 maximum annual billing demand is less than 50 kW, represent almost 30% of the
13 137,029 bills in the test year, yet only 8.3% of the billing demand and 6.3% of the
14 billing kWh. The average annual load factor for these customers is 39.6%. On the
15 other hand, customers whose maximum annual billing demand falls between 800 kW
16 and 850 kW have an average annual load factor of over 60%.

17
18 There is some tendency shown in these groupings that the larger customers have higher
19 load factors. For example, the cumulative grouping of all customers whose maximum
20 annual billing demand is less than 300 kW shows an average annual load factor of
21 43.3%, while those customers whose demand is greater than or equal to 300 kW have
22 an average annual load factor of 53.4%. However, there are exceptions to this trend,

1 and the data aggregated in 50 kW billing demand blocks can mask additional diversity
2 within the groups.

3
4 **Q. How does the Company's proposed Schedule No. 6 affect price signals received by**
5 **customers?**

6
7 A. By including demand related costs in the energy charge, Schedule No. 6 weakens the
8 incentive to reduce peak demand, while failing to encourage the efficient utilization of
9 capacity through energy use. The Company's witnesses, Donald N. Furman and Reed
10 C. Davis, discuss the fact that the Company is experiencing far greater growth in peak
11 demand than in energy usage. This is driving up Utah's share of the overall PacifiCorp
12 system costs, while failing to produce energy revenues to cover those costs. The
13 Company's proposal for mandatory Time-of-Day rates for Schedule No. 9 and the
14 largest Schedule No. 6 customers, coming out of the Rate Design Taskforce, is driven
15 by a desire to send appropriate price signals for both demand and energy usage. The
16 Company is only moving the largest Schedule No. 6 customers to the new mandatory
17 Time-of-Day Schedule No. 8, due to concerns over the availability of load data and
18 metering costs. For those customers remaining on Schedule No. 6, the rate should be
19 designed to provide better price signals even without the time-of-day features.

20
21 **Q. Please explain the relationship between Schedule No. 6 and Schedule No. 9.**
22

1 A. Under the present rate structure, there are no size limitations or requirements on either
2 rate schedule. The only determining factor as to on which of these schedules a
3 customer takes service is the voltage at which the customer receives service. In this
4 situation, it is very possible that two customers with almost identical load
5 characteristics could be served on different rates. Fairness and equity require that the
6 difference in charges to two such customers reflect only the difference in the cost of
7 distribution equipment used to serve the respective customers. Since the Company's
8 cost of service study classifies all distribution costs, except meters and services, as
9 demand related, there is no cost-based justification for a substantial difference in the
10 energy charges between the two rates. However, under the present rates, the Schedule
11 No. 6 energy charge is 2.7737 cents per kWh, while the Schedule No. 9 energy charge
12 is 2.1279 cents per kWh.

13
14 Based on the Company's load research data, there are approximately 60 customers
15 served on Schedule No. 9 whose billing demands are less than 1,000 kW. The load
16 research data from those customers who are part of the Company's load research
17 program suggests that these customers have a fairly wide range of load factors, and
18 some of these customers have monthly peak demands of less than 100 kW. It is very
19 likely that there is overlap in the load characteristics between these small Schedule No.
20 9 customers and some of the customers on Schedule No. 6.

21
22 In addition to the issues of equity, these non-cost based differences in rates between

1 schedules that are differentiated only by service voltage send improper price signals to
2 new customers who have a choice of service voltage. To the extent that such a new
3 customer chooses a delivery voltage (and thus tariff) based on improper pricing, a
4 subsidy will be created which must be born by other ratepayers.

5
6 **Q. How do the Company's proposed changes for Schedule No. 6 and Schedule No. 9**
7 **affect this concern?**

8
9 A. The Company's proposals introduce additional differences between the two rates.
10 First, there will be a size limitation on Schedule No. 6, with customers whose billing
11 demand is greater than 1,000 kW moving to Schedule No. 8. Second, both Schedule
12 No. 8 and Schedule No. 9 will be reflect a Time-of-Day rate structure. These changes
13 will make the scenario described above somewhat less comparable between two
14 customers. However, the Company's proposed rates slightly reduce the average energy
15 charges for Schedule No. 9, while increasing the energy charges for Schedule No. 6.
16 This will make the potential inequity even greater at proposed rates then currently
17 exists.

18
19 **III. COST-BASED SCHEDULE NO. 6**

20
21 **Q. Have you developed rates for Schedule No. 6 that be consistent with the results of**
22 **the Company's cost of service study?**

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A. Yes. The resulting rates are shown on Exhibit ____ (BRB-3). Consistent with the Company's rate design methodology, I have computed the rates using a combined revenue target and billing determinants for Schedule Nos. 6 and 6B, based on the Company's proposed increases as corrected in response to UIEC Data Request 5.2. I first developed the energy charge using the Company's unit cost analysis from Exhibit UPL____(DLT-9), at the Target Return on Rate Base.

There are two energy-related components of revenue requirements, Generation-Energy and Transmission-Energy. For the Schedule 6 rate class, the Generation-Energy revenue requirement is \$106,738,301, and the Transmission-Energy revenue requirement is \$4,856,326. When divided by the billing energy of 5,681,952,101 kWh, this produces a cost-based energy charge of 1.9640 cents per kWh. The resulting Summer demand charge is \$15.92 per kW, and the Winter demand charge is \$12.78 per kW. To match the target revenues based on the Company's proposed rate increase, the final energy charge is adjusted to 1.9635 cents per kWh.

This cost-based energy rate is more than 1 cent per kWh below UP&L's proposed energy charge of 2.9683 cents per kWh and represents the removal of more than \$53 million of demand related costs from the Company's proposed energy charge for Schedule No. 6. This cost-based rate will eliminate the intra-class subsidies caused by the excessive recovery of demand-related costs through the energy charge and provide

1 more appropriate price signals for the use of demand.

2

3 **Q. UP&L witness William R. Griffith states that the Company's proposed rate**
4 **design is in keeping with the principle of gradualism. Do you agree?**

5

6 A. No. The Company's proposal moves the energy charge further away from cost of
7 service, rather than gradually moving the rate towards cost of service. The need to
8 moderate the rate change for gradualism should be determined based on the overall
9 increase as determined by the Commission, which may be different from that proposed
10 by the Company.

11

12 If the Commission does determine that some gradualism is necessary in order to
13 moderate the increases on groups of customers within Schedule No. 6, it should
14 establish a three year phase-in of the rate change, with one-third of the demand costs
15 being removed from the energy charge each year until the rate is cost-based.

16

17 **IV. COMMENTS ON SCHEDULE NOS. 8 AND 9**

18

19 **Q. Do you have any comments on the Company's proposals for Schedule Nos. 8 and**
20 **9?**

21

22 A. Yes. Although the structure of Schedule No. 8 follows that of Schedule No. 9,

1 Schedule No. 8 has much more demand costs recovered through the energy charges
2 than does Schedule No. 9. Consistent with the changes I have proposed for Schedule
3 No. 6, the energy charges for Schedule Nos. 8 and 9 should be cost-based as well.

4
5 I also have some concern that the Company is focused solely on creating incentives for
6 shifting load, rather than creating appropriate pricing for planning and consumption
7 decisions by customers. There is nothing wrong with looking for load shifting
8 opportunities in order to reduce or slow the growth in system costs, and to the extent
9 that Time-of-Day pricing can accomplish that from individual customers, it is “low
10 hanging fruit”. However, the Time-of-Day rates should not be judged over a short-term
11 basis on whether or not customers shifted load. Some of the benefits may hinge on
12 investment decisions by customers over a longer period. If rates are appropriately
13 designed to reflect cost, then customers will see appropriate price signals and make
14 investments and operating decisions accordingly.

15
16 **Q. Does this complete your testimony?**

17
18 **A. Yes.**