

**ORIGINAL
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**BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION**

DOCKET NO 891345-EI

**REBUTTAL TESTIMONY
AND EXHIBITS
OF
R. D. BUSHART**

Gulf Power



**DOCUMENT NUMBER-DATE
04455 MAY 21 1990
FPSC-RECORDS/REPORTING**

1 GULF POWER COMPANY
2 Before the Florida Public Service Commission
3 Rebuttal Testimony of
4 Robert D. Bushart
5 In Support of Rate Relief
6 Docket No. 891345-EI
7 Date of Filing May 21, 1990

8 Q. Will you please state your name, business address and
9 occupation?

10 A. My name is Robert Duncan Bushart, and my business
11 address is 500 Bayfront Parkway, Pensacola, Florida
12 32501. I am an economist and I am the Supervisor of
13 Forecasting and Marketing Planning for Gulf Power
14 Company. I am also employed by the United States Army
15 Reserve and assigned to the 361st Civil Affairs Brigade
16 as Assistant Chief of Staff in charge of the 17 person
17 Economics and Commerce section. In this latter posi-
18 tion, I direct and supervise the analysis of Central
19 and South American countries at the macro, micro and
20 individual market segment level.

21 Q. Please describe your educational background.

22 A. I received a Bachelor of Science degree in Chemistry in
23 1965 and a Master of Science degree in Economics from
24 Murray State University in 1975. I attended the
25 University of Kentucky and passed my preliminary
examinations for admission to the candidacy for the

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1 Ph.D. degree in 1978. In addition to micro and macro
2 economic examinations my examination fields for candi-
3 dacy for the Ph.D. degree included Environmental
4 Economics; Energy Economics; Agricultural Economics;
5 and Economic Policy.

6
7 Q. Please describe your employment experience.

8 A. Upon leaving the University of Kentucky, I accepted a
9 position as Chief Economist at the West Florida Region-
10 al Planning Council and was the principal author of a
11 two volume Economic and Policy Analysis of the
12 Northwest Florida economy. I have taught micro, macro
13 and managerial economics courses at the graduate and
14 undergraduate levels at the University of West Florida
15 and marketing and finance courses at the undergraduate
16 level. In 1980, I accepted a position with Gulf Power
17 Company as an Economist in the Marketing Department,
18 where I have assisted in the development of the Compa-
19 ny's customer, KWH sales, and revenue forecasts. In
20 addition to forecasting, my principal duties were the
21 economic analysis on projects involving marketing,
22 research, and the load research as it applied to
23 conservation and sales programs. In 1985 I was promot-
24 ed to Senior Economist with basically the same respon-
25 sibilities but with additional emphasis on the analysis

1 of energy policies and their implications to the
2 utility industry in general and specifically Gulf Power
3 Company. In 1988 I was promoted to Supervisor of
4 Forecasting and Marketing Planning. I supervise and
5 direct the work of the economic, forecasting, marketing
6 planning and administrative staff members comprising
7 the Forecasting and Marketing Planning staff section.

8
9 Q. Mr. Bushart, what is the purpose of your testimony?

10 A. The purpose of my testimony is to provide rebuttal to
11 the statements made and positions taken by Mr. Helmuth
12 W. Schultz, III contained in his direct testimony in
13 this docket. I will be specifically addressing his
14 position regarding the reduction in overall cost of
15 service as a result of our marketing programs.

16
17 Q. Have you prepared an exhibit that contains information
18 to which you will refer in your testimony?

19 A. Yes.

20 Counsel: We ask that Mr. Bushart's
21 Exhibit, comprised of 1
22 Schedule be marked for
identification as
Exhibit _____. (RDB-1)

23 Q. Would you please explain your duties as Supervisor of
24 Marketing Planning?

25

1 A. I direct the analysis and conceptualization of market-
2 ing planning to ascertain what kinds of marketing
3 programs are appropriate for the residential, commer-
4 cial and industrial classes. Our analysis establishes
5 that these programs are beneficial to both the partici-
6 pating customer and the general body of ratepayers.
7 There are basically two types of marketing programs
8 designed for each of our primary customer classes.

9

10 Q. Would you please explain these two basic types of
11 marketing programs?

12 A. The two basic types of marketing programs are conserva-
13 tion marketing programs and sales marketing programs.
14 Conservation marketing programs are designed to cost-
15 effectively minimize the on-peak consumption of elec-
16 trical energy while satisfying our customers' needs.
17 Sales marketing programs are designed to satisfy our
18 customers' needs primarily during off-peak periods when
19 their cost causation is zero or very small. Both types
20 of marketing programs contribute to lowering of the
21 average total cost of electric energy, thereby contrib-
22 uting to the well being of the citizens of our service
23 area.

24 Conservation marketing programs lower the average
25 total cost by cost-effectively deferring current and

1 future investments in transmission and generation
2 facilities needed to ensure reliable and cost-effective
3 electric service during the summer peaking periods.

4 Sales marketing programs contribute to lower
5 average total cost by spreading the fixed cost neces-
6 sary to serve the summer loads over more kilowatthours.
7 Both types of marketing programs used separately or in
8 conjunction with each other are cost-effective for
9 Gulf's general body of ratepayers. The lowering of the
10 average total cost of electrical service relative to
11 what it would have been without the marketing program
12 increases both the consumer surplus of each individual
13 residential customer and the profitability of our
14 commercial and industrial customers. This is not only
15 directly beneficial to the citizens of our service area
16 as residential customers but also contributes to the
17 overall well being of our nation by making the goods
18 and services produced within our service area more
19 competitive in the international marketplace.

20

21 Q. Do you consider Gulf Power Company to be a low cost
22 provider of electrical service?

23 A. Yes. Gulf Power is one of the lowest cost electrical
24 service providers in the Southeastern United States.
25 The philosophies of management on both cost containment

1 and the efficient utilization of current and past
2 investments are major contributors to the low cost of
3 electrical energy in our service area.

4

5 Q. Have you prepared an analysis that supports your
6 position?

7 A. I will address the economic analysis used in evaluating
8 our marketing programs and this relationship to fixed
9 invested capital. I will use the residential market
10 for this analysis though a similar analysis can be used
11 in the marketing programs for the commercial and
12 industrial classes. I will illustrate that it is
13 beneficial for the general body of ratepayers for Gulf
14 Power to pursue off-peak sales in the residential
15 market.

16

17 Q. What data does Gulf Power have on competitive and
18 non-competitive consumption in the residential sector?

19 A. Gulf Power conducted the Energy Efficient Home Study in
20 1985 to specifically determine the demands and consump-
21 tion caused by heating, ventilation and air condition-
22 ing units (HVAC), water heating units, and the whole-
23 house consumption. In addition, Gulf Power measured
24 the gallons of hot water that the residential units
25 consumed. All data was recorded in 15 minute intervals

1 so that the primary cost causality could be determined
2 for these residences and these principal energy consum-
3 ing units. This data was collected on a random sample
4 of recently constructed Good Gents homes with conven-
5 tional water heating, Good Gents homes with advanced
6 water heating systems and conventionally constructed
7 homes. This load research project was undertaken to
8 both gather data on our existing residential conser-
9 vation marketing programs and to form the basis for
10 changes, if required, in future marketing programs.

11
12 Q. Would you summarize the findings of the Energy Effi-
13 cient Home Study as they relate to your analysis?

14 A. My Schedule 1, page 2 indicates that non-competitive
15 loads amounted to 11,263 KWH and the competitive loads
16 of water heating and heating amounted to 6,194 KWH. In
17 addition, the water heating load contributed 0.21 KW to
18 the summer coincident peak.

19
20 Q. Is Gulf Power Company a summer peaking utility?

21 A. Yes. Gulf and the Southern Company System plan genera-
22 tion for only summer peaks. Gulf Power has had two
23 winter peaks in the past thirty-five years. These
24 winter peaks occurred on the coldest and fourth coldest
25 days based on over 100 years of historical weather

1 data. The Southern electric system has not had a
2 winter peak since 1951. Southern's reserve margins,
3 after scheduled and planned generation maintenance to
4 cover the summer peak periods, are significantly higher
5 in the non-summer months. The transmission systems of
6 both Gulf and Southern are designed to meet the summer
7 peaking loads. Gulf's Ten-Year Site Plan includes two
8 peaking units designed to ensure reliable generation
9 capabilities for the summer period. These units will
10 be dual fueled to ensure that the least cost fuel is
11 available for utilization when needed.

12

13 Q. Does it cost Gulf more in fixed investments to serve
14 the competitive loads of water heating and heating?

15 A. Yes. It requires an additional investment of about 5.7
16 percent above the investment necessary to ensure
17 reliable service for the non-competitive loads during
18 the summer months.

19

20 Q. Does this increase the total base rate revenue require-
21 ments for Gulf?

22 A. Yes. However, that is not relevant. What is both
23 relevant and important is that this incremental invest-
24 ment is cost-effective from the general body of
25 ratepayers' perspective.

1 Q. Why is this beneficial to all other customers?

2 A. The additional 5.7 percent investment increases overall
3 sales of electrical energy by about 50.0 percent, while
4 satisfying the customers' needs in a cost-effective
5 manner. These increased sales not only cover this 5.7
6 percent incremental cost but also spread the fixed
7 investment necessary to serve the summer peaking load
8 over many more kilowatthours, thereby decreasing the
9 average total cost from what it otherwise would have
10 been.

11
12 Q. Have you estimated the cost to serve the competitive
13 load vs. the cost to serve the non-competitive loads?

14 A. Using the 1990 Cost-of-Service information filed in
15 this docket, the residential class was allocated
16 \$711,411,000 of gross capital investment or \$2,806 on a
17 per residential customer. Non-competitive load cost
18 requirements are \$2,654 and competitive load cost
19 requirements are \$152 per customer. This indicates
20 that it is over nine times as costly to serve the
21 non-competitive load as it is to serve the competitive
22 load on a per kilowatthour basis. This large differen-
23 tial in cost to serve is because the vast majority of
24 our residential investment is required during the
25 summer peaking period and would be non-productive

1 during the remainder of the year if not for competitive
2 sales.

3
4 Q. Have you estimated the base rate revenues generated by
5 both the competitive and non-competitive sales?

6 A. Yes, using the Energy Efficient Home Study and the
7 tariffs approved in the 1984 Gulf Power Company rate
8 case, the competitive sales generate \$200 and the
9 non-competitive sales generate \$461 in base rate
10 revenues per customer.

11
12 Q. Have you estimated the payback on the difference
13 between the competitive investment and the non-
14 competitive investment?

15 A. Yes. Using the base rate revenues and the separated
16 investment cost derived above, the simple payback
17 analysis results in the competitive investment being
18 recovered in 0.76 years while the non-competitive
19 investment takes 5.8 years. This is summarized in my
20 Schedule 1, page 2.

21
22 Q. Have you prepared an exhibit showing the assumed loss
23 of competitive load sales for 100,000 residential
24 customers?
25

1 A. Yes, I have prepared a partial analysis on the assumed
2 loss of competitive sales on 619,400,000 KWH represent-
3 ing the sales to 100,000 residential customers. The
4 100,000 residential customers represent the appropriate
5 number of competitive load customers Gulf has added
6 since 1972. Kilowatthour sales are decreased 18.6
7 percent, revenues are decreased 15.2 percent and
8 invested capital is decreased 5.4 percent. This
9 results in a decrease in base rate revenue requirements
10 of \$5,218,050.

11 However, the base rate cents per KWH is now re-
12 quired to increase to all residential customers for all
13 consumption by 18.0 percent (4.674 ¢/KWH compared to
14 3.960 ¢/KWH). Average total cost increases to all
15 residential customers by 11.8 percent (6.780 ¢/KWH
16 compared to 6.065 ¢/KWH) for all KWH consumed, thereby
17 decreasing consumer surplus to the citizens of our
18 service area. The results of this analysis are illus-
19 trated in my Schedule 1, page 3.

20
21 Q. Does this conclude your testimony?

22 A. Yes, it does.

23

24

25

AFFIDAVIT

STATE OF FLORIDA)
)
COUNTY OF ESCAMBIA)

Docket No. 891345-EI

Before me the undersigned authority, personally appeared
R. D. Bushart, who being first duly sworn,
deposes and says that he/she is the Supervisor of Forecasting
& Marketing Planning of Gulf Power Company and that the foregoing
is true and correct to the best of his/her knowledge, information
and belief.

R D Bushart

Sworn to and subscribed before me this 18th day of
May, 1990.

Karen M. Bates
Notary Public, State of Florida at Large

My Commission Expires: My Commission Expires
 July 25, 1990

Florida Public Service Commission
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Witness: R. D. Bushart
Exhibit _____ (RDB-1)
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Schedule

Economic Impact of Competitive Loads 1

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Schedule 1
Page 1

ECONOMIC IMPACT OF COMPETITIVE LOADS

ASSUMPTIONS

GROSS PLANT (RESIDENTIAL)	\$711,411,000
WATER HEATING C.P.K.W.	.21 KW
WHOLE HOUSE ANNUAL KWH	17,457
COMPETITIVE KWH (HEATING & WATER HEATING)	6,194

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Schedule 1
Page 2

ECONOMIC IMPACT OF COMPETITIVE LOADS

COST/REVENUES/PAYBACK

<u>Load</u>	<u>Annual KWH</u>	<u>Capital Requirements</u>	<u>Capital Per KWH</u>	<u>Base Rate Rev.</u>	<u>Simple Payback (Years)</u>
Competitive	6,194	\$ 152	\$0.025	\$200	0.76
Non-Competitive	<u>11,263</u>	<u>\$2,654</u>	\$0.236	<u>\$461</u>	<u>5.76</u>
TOTAL	17,457	\$2,806		\$661	4.25

CONCLUSIONS

- o 9.4 times more expensive to serve non-competitive loads.
- o 7.6 times more beneficial to serve competitive loads.

ECONOMIC IMPACT OF COMPETITIVE LOADS

RESIDENTIAL COST/KWH

	<u>MKWH</u>	<u>Revenues (000)</u>	<u>Gross Capital Investment (000)</u>
1990 Forecast	3,322,374	\$131,599	\$711,411
Less Competitive Sales	(619,400)	\$(20,000)	\$ 38,537
Net Forecast	2,702,974	\$111,559	\$672,874

A reduction in gross capital investment of \$38,537,000 changes the revenue requirement from \$131,559,000 to \$126,341,000 for a savings of \$5,218,000.

CONCLUSIONS

- o Energy Sales Decrease 18.6%
- o Revenues Decrease 15.2%
- o Invested Capital Decrease 5.4%
- o Base Rate Cost/KWH Increases 18.0%
- o Total Cost/KWH Increases 11.8%

CALCULATIONS OF AVERAGE ¢/KWH

- o $\frac{\$131,559,000}{3,322,374} = 3.960 \text{ ¢/KWH}$
- o $\frac{\$201,528,000}{3,322,374} = 6.066 \text{ ¢/KWH}$
- o $\frac{\$126,341,000}{2,702,974} = 4.674 \text{ ¢/KWH}$
- o $\frac{\$183,266,000}{2,702,974} = 6.780 \text{ ¢/KWH}$