



Louisville Gas and Electric Company
220 West Main Street
PO Box 32010
Louisville, Kentucky 40232

June 18, 2004

Elizabeth O'Donnell, Executive Director
Public Service Commission
211 Sower Boulevard
P. O. Box 615
Frankfort, Kentucky 40601

RECEIVED

JUN 18 2004

PUBLIC SERVICE
COMMISSION

***Re: TARIFF FILING OF LOUISVILLE GAS AND ELECTRIC
COMPANY TO REVISE RATES FOR SMALL POWER
PRODUCTION AND COGENERATION – CASE NO. 2004-00201***

Dear Ms. O'Donnell:

Please find enclosed and accept for filing the original and ten (10) copies of the Response of Louisville Gas and Electric Company to the Information Requested in Appendix A of the Commission's Order Dated June 3, 2004, in the above-referenced matter.

Should you have any questions concerning the enclosed, please contact me at your convenience.

Sincerely,

John Wolfram
Manager, Regulatory Affairs

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY

In the Matter of:

TARIFF FILING OF LOUISVILLE GAS AND)	
ELECTRIC COMPANY TO REVISE RATES)	CASE NO.
FOR SMALL POWER PRODUCTION AND)	2004-00201
COGENERATION)	

**RESPONSE TO
INFORMATION REQUESTED IN
APPENDIX A
TO AN ORDER OF THE
PUBLIC SERVICE COMMISSION
DATED JUNE 3, 2004**

FILED: JUNE 18, 2004

LOUISVILLE GAS AND ELECTRIC COMPANY

CASE NO. 2004-00201

Response to Information Requested in Appendix A to an Order of the
Public Service Commission Dated June 3, 2004

Question No. 1

Responding Witness: B. Keith Yocum

Q-1. Refer to Attachments 1 and 2 of LG&E's May 14, 2004 filing. Attachment 1 lists proposed avoided cost rates for different transaction quantities during different time periods. Attachment 2 shows planned generation additions and the projected per-unit capacity costs and fuel costs of the different additions.

- a. Provide a narrative description of how the per-unit capacity costs and energy costs shown in Attachment 2 were developed, along with the workpapers, calculations, spreadsheets, etc. that produce the cost levels shown therein.
- b. Provide a narrative description of how the avoided cost rates shown in Attachment 1 were derived. The description should fully explain how the per-unit costs in Attachment 2 are reflected in the avoided cost rates in Attachment 1. Include the workpapers, calculations, spreadsheets, etc. that show the derivation of these avoided cost rates.

A-1. a. Trimble Co. CT 7-10

- Capacity costs were developed using costs identified in Case No. 2002-00381 (CCN for TC 7-10) and expected unit net summer capacity.

$$\text{Capacity Cost} = \$227,392,000 / 155,000 \text{ kW} = \$367/\text{kW}$$

- Fuel cost was obtained from the Prosym hourly production model output.

$$\begin{aligned} \text{Fuel Cost} &= \text{Avg. Heat Rate (btu/kWh)} \times \text{Avg. Fuel Cost} \\ &\quad \text{(cent/mmbtu)} \\ &= (11,004 \text{ btu/kWh} \times 547.5 \text{ cent/mmbtu}) / 1,000,000 \\ &= 6.02 \text{ cent/kWh} \end{aligned}$$

Trimble County 2

- The capacity cost was based on 75% of the most recent capital costs provided by Cummins & Barnard, Inc. (January 2004) and the Company's expected net summer capacity from the unit. The Cummins

- & Barnard estimate has been slightly modified to reflect updated capital requirements from 2003 to 2006.

$$\text{Capacity Cost} = \$769,955,625 / 549,000 \text{ kW} = \$1,402/\text{kW}$$

- The fuel cost was determined using its anticipated heat rate and coal prices for 2010.

$$\begin{aligned} \text{Fuel Cost} &= \text{Heat Rate (btu/kWh)} \times \text{Fuel Cost (cent/mmbtu)} \\ &= (8,703 \text{ btu/kWh} \times 132.8 \text{ cent/mmbtu}) / 1,000,000 \\ &= 1.16 \text{ cent/kWh} \end{aligned}$$

Greenfield CT

- The capacity cost was taken from KU/LG&E's 2002 IRP (Case No. 2002-00367 Volume III Section VIII. Supply Side Analysis) for a Simple Cycle GE 7FA CT and escalated to 2013 at a rate of 2.3%.

$$\text{Capacity Cost} = \$425/\text{kW} \times 1.023(2013-2002) = \$546/\text{kW}$$

- The fuel cost was determined using the heat rate also identified in the 2002 IRP and estimated 2013 gas prices.

$$\begin{aligned} \text{Fuel Cost} &= \text{Heat Rate (btu/kWh)} \times \text{Fuel Cost (cent/mmbtu)} \\ &= (11,500 \text{ btu/kWh} \times 631.1 \text{ cent/mmbtu}) / 1,000,000 \\ &= 7.26 \text{ cent/kWh} \end{aligned}$$

- b. The avoided cost rates shown in Attachment 1 are taken from Prosym hourly production model results. Avoided costs are determined via Prosym by looking at the last specified increments of load (100 MW in this case) and the cost of serving that load. Model results consist of fuel, O&M, and emission costs to serve the specified load - or costs avoided in not serving the load. Avoided fuel costs relating to Trimble Co. CT 7-10 will be included in the rates shown in Attachment 1 for all hours where their generation is in the specified MW increments (i.e. the last 100, 200, or 300 MW of power necessary to meet load requirements). A capacity component is not included in the costs identified in Attachment 1.

2004 Avoided Energy Cost Filing (cents/kWh)

Year: 2004					
Decremental MW Transaction	Summer Peak Period	Winter Peak Period	Off Peak Period	Average Day	
100	3.124	1.922	1.802	1.987	
200	2.966	1.859	1.710	1.890	
300	2.556	1.674	1.562	1.704	

Year: 2005					
Decremental MW Transaction	Summer Peak Period	Winter Peak Period	Off Peak Period	Average Day	
100	3.121	1.795	1.887	2.038	
200	2.863	1.980	1.769	1.935	
300	2.586	1.684	1.624	1.756	

Year: 2006					
Decremental MW Transaction	Summer Peak Period	Winter Peak Period	Off Peak Period	Average Day	
100	3.472	1.910	1.863	2.076	
200	3.259	1.974	1.716	1.943	
300	2.848	1.813	1.638	1.813	

Year: 2007					
Decremental MW Transaction	Summer Peak Period	Winter Peak Period	Off Peak Period	Average Day	
100	3.837	2.225	2.048	2.296	
200	3.502	1.936	1.904	2.112	
300	3.102	1.745	1.768	1.936	

Year: 2008					
Decremental MW Transaction	Summer Peak Period	Winter Peak Period	Off Peak Period	Average Day	
100	3.918	2.277	2.140	2.385	
200	3.761	2.152	2.021	2.260	
300	3.347	1.990	1.859	2.066	

Year: 2009					
Decremental MW Transaction	Summer Peak Period	Winter Peak Period	Off Peak Period	Average Day	
100	4.342	2.947	2.499	2.790	
200	4.089	2.750	2.356	2.626	
300	3.690	2.304	2.107	2.336	

2004 Avoided Energy Cost Filing

Plans for and Cost of Additional Capacity

Year	Unit Added	Summer Rating (MW)	Unit Type	Capacity Cost (\$/kW)	Fuel Cost (cent/kWh)
2004	Trimble Co CT 7	155	Combustion Turbine	367	6.02
	Trimble Co CT 8	155	Combustion Turbine	367	6.02
	Trimble Co CT 9	155	Combustion Turbine	367	6.02
	Trimble Co CT 10	155	Combustion Turbine	367	6.02
2005					
2006					
2007					
2008					
2009					
2010	Baseload Unit	549	Baseload	1402	1.16
2011					
2012					
2013	Greenfield CT 1	148	Combustion Turbine	546	7.26

PeriodNarr [v3] SummerPk WinterPk OffPeak

2004

Avoided Cost By Period For Total System

Seq	Resource	Period tota	1	2	3
1	VIRTUAL PURCH 1				
	(GWh)	878.4	114.4	97.5	666.5
	(000 \$)	17457.08	3574.03	1874.07	12008.98
	(\$/MWh)	19.87	31.24	19.22	18.02
2	VIRTUAL PURCH 2				
	(GWh)	1756.8	228.8	195	1333
	(000 \$)	33198.39	6785.91	3624.33	22788.16
	(\$/MWh)	18.9	29.66	18.59	17.1
3	VIRTUAL PURCH 3				
	(GWh)	2635.2	343.2	292.5	1999.5
	(000 \$)	44900.66	8772.57	4895.19	31232.89
	(\$/MWh)	17.04	25.56	16.74	15.62

2005

Avoided Cost By Period For Total System

Seq	Resource	Period tota	1	2	3
1	VIRTUAL PURCH 1				
	(GWh)	876	114.4	94.5	667.1
	(000 \$)	17852.66	3570.7	1695.89	12586.06
	(\$/MWh)	20.38	31.21	17.95	18.87
2	VIRTUAL PURCH 2				
	(GWh)	1752	228.8	189	1334.2
	(000 \$)	33895.62	6551.42	3742.68	23601.52
	(\$/MWh)	19.35	28.63	19.8	17.69
3	VIRTUAL PURCH 3				
	(GWh)	2628	343.2	283.5	2001.3
	(000 \$)	46146.84	8875.25	4774.42	32497.16
	(\$/MWh)	17.56	25.86	16.84	16.24

2006

Avoided Cost By Period For Total System

Seq	Resource	Period tota	1	2	3
-----	----------	-------------	---	---	---

1 VIRTUAL PURCH 1					
(GWh)	876	113.1	94.5	668.4	
(000 \$)	18185.14	3926.56	1804.55	12454.03	
(\$/MWh)	20.76	34.72	19.1	18.63	
2 VIRTUAL PURCH 2					
(GWh)	1752	226.2	189	1336.8	
(000 \$)	34047.05	7370.79	3730.51	22945.74	
(\$/MWh)	19.43	32.59	19.74	17.16	
3 VIRTUAL PURCH 3					
(GWh)	2628	339.3	283.5	2005.2	
(000 \$)	47644.34	9664.83	5141.07	32838.44	
(\$/MWh)	18.13	28.48	18.13	16.38	

2007

Avoided Cost By Period For Total System

Seq	Resource	Period tota	1	2	3
1 VIRTUAL PURCH 1					
(GWh)	876	111.8	96	668.2	
(000 \$)	20110.36	4289.23	2135.9	13685.23	
(\$/MWh)	22.96	38.37	22.25	20.48	
2 VIRTUAL PURCH 2					
(GWh)	1752	223.6	192	1336.4	
(000 \$)	36997.31	7830.12	3717.02	25450.18	
(\$/MWh)	21.12	35.02	19.36	19.04	
3 VIRTUAL PURCH 3					
(GWh)	2628	335.4	288	2004.6	
(000 \$)	50870.07	10403.75	5025.19	35441.13	
(\$/MWh)	19.36	31.02	17.45	17.68	

2008

Avoided Cost By Period For Total System

Seq	Resource	Period tota	1	2	3
1 VIRTUAL PURCH 1					
(GWh)	878.4	113.1	100.5	664.8	
(000 \$)	20948.13	4431.77	2288.52	14227.84	
(\$/MWh)	23.85	39.18	22.77	21.4	
2 VIRTUAL PURCH 2					
(GWh)	1756.8	226.2	201	1329.6	
(000 \$)	39709.71	8508.43	4325.73	26875.54	
(\$/MWh)	22.6	37.61	21.52	20.21	

3 VIRTUAL PURCH 3					
(GWh)	2635.2	339.3	301.5	1994.4	
(000 \$)	54440.59	11354.81	6000.37	37085.41	
(\$/MWh)	20.66	33.47	19.9	18.59	

2009

Avoided Cost By Period For Total System

Seq	Resource	Period tota	1	2	3
---	-----	-----	-----	-----	-----
1	VIRTUAL PURCH 1				
	(GWh)	876	114.4	97.5	664.1
	(000 \$)	24439.32	4967.64	2873.05	16598.63
	(\$/MWh)	27.9	43.42	29.47	24.99
2	VIRTUAL PURCH 2				
	(GWh)	1752	228.8	195	1328.2
	(000 \$)	46003.56	9354.79	5362.68	31286.08
	(\$/MWh)	26.26	40.89	27.5	23.56
3	VIRTUAL PURCH 3				
	(GWh)	2628	343.2	292.5	1992.3
	(000 \$)	61384.92	12665.27	6740.46	41979.2
	(\$/MWh)	23.36	36.9	23.04	21.07