



Exhibit No.:
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 Standby Service Rates
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 Development - Division of Energy
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MISSOURI PUBLIC SERVICE COMMISSION

**KANSAS CITY POWER & LIGHT COMPANY
 (KCP&L)**

CASE NO. ER-2014-0370

DIRECT TESTIMONY

OF

JANE LOHRAFF

ON

BEHALF OF

MISSOURI DEPARTMENT OF ECONOMIC DEVELOPMENT

DIVISION OF ENERGY

Jefferson City, Missouri

April 16, 2015

(Rate Design)

DED - DE Exhibit No. 354
 Date 6.15.15 Reporter AT
 File No. ER-2014-0370

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

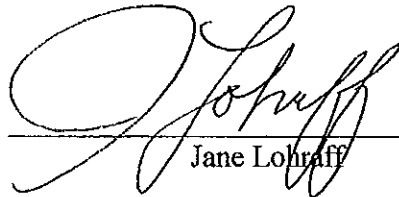
In the Matter of Kansas City Power & Light)
Company's Request for Authority to Implement a) ER-2014-0370
General Rate Increase for Electric Service)

AFFIDAVIT OF JANE LOHRAFF

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

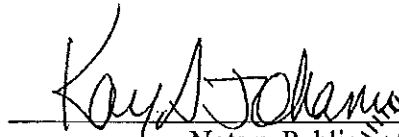
Jane Lohraff, of lawful age, being duly sworn on her oath, deposes and states:

1. My name is Jane Lohraff. I work in the City of Jefferson, Missouri, and I am employed by the Missouri Department of Economic Development as a Planner III, Division of Energy.
2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of the Missouri Department of Economic Development -- Division of Energy.
3. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded are true and correct to the best of my knowledge.

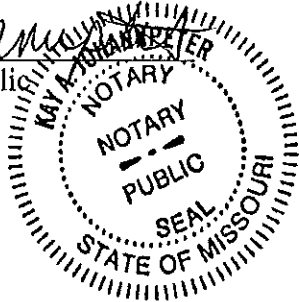


Jane Lohraff

Subscribed and sworn to before me this 16th day of April, 2015.



Notary Public



My commission expires:

KAY A. JOHANNPETER
Notary Public - Notary Seal
STATE OF MISSOURI
Cole County
My Commission Expires: Aug. 4, 2015
Commission # 11551967

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1 I. INTRODUCTION

2 **Q. Please state your name and business address.**

3 A. Jane Lohraff, 301 West High Street, Suite 720, Jefferson City, Missouri 65102.

4 **Q. By whom are you employed and in what capacity are you testifying?**

5 A. I am employed by the Missouri Department of Economic Development, Division of
6 Energy ("DE") as an Energy Policy Analyst.

7 **Q. Please describe your educational background and employment experience.**

8 A. I received my Bachelor of Arts degree in Geology from Stephens College, Columbia,
9 Missouri, and my Masters of Science in Geology from the University of Missouri-
10 Columbia. I began work with the Missouri Department of Economic Development,
11 Division of Energy, in September, 2014. Prior to working with the Division of Energy, I
12 was employed as a Policy Analyst, Policy Coordinator, and Supervisor of the Policy
13 Coordination Unit within the Missouri Department of Conservation. Prior to working
14 with the Missouri Department of Conservation, I was employed as a Hydrologist III with
15 Missouri Department of Natural Resources, focusing on water policy and management
16 issues.

17 **Q. What information did you review in preparing this testimony?**

18 A. In preparation for my EDR/UCT testimony I reviewed the following items:

- 19 • Missouri Energy Efficiency Investment Act ("MEEIA")¹;
20 • Commission Rules implementing MEEIA²;

¹ § 393.1075 RSMo.

² 4CSR 240-20.093 and 4CSR 240-20.094

- 1 • Kansas City Power & Light (KCP&L)'s Commercial and Industrial Demand Side
2 Management Programs³;
- 3 • KCP&L's Economic Development Rider (EDR) and Urban Core Development Rider
4 (UCD)⁴;
- 5 • Economic development rider tariffs in effect in Indiana and Wisconsin⁵.
- 6 In preparation for my Standby Rate testimony I reviewed the following items:
- 7 • KCP&L's Standby Service for Self-Generating Customers, Schedule SGC.⁶
- 8 • Material from Case No. ER-2014-0258 related to Ameren Missouri's standby service
9 rate.
- 10 • Material from Case No. ER-2014-0351 related to Empire District Electric Company's
11 standby service offerings.
- 12 • Materials related to best practices for standby service rate design including articles
13 entitled *Standby Rates for Combined Heat and Power Systems Economic Analysis*
14 *and Recommendations for Five States*⁷, and *Standby Rates for Customer-Sited*
15 *Resources*⁸.

³ KCP&L Tariff sheets 1.72 – 1.80, 1.93 - 1.94

⁴ KCP&L Tariff Sheets 32E – 32J and Tariff Sheets 41 – 41D

⁵ Schedule JEL-1

⁶ Schedule JEL-2

⁷ Selecky, James, Kathy Iverson and Ali Al-Jabir (2014) *Standby Rates for Combined Heat and Power Systems Economic Analysis and Recommendations for Five States*, Regulatory Assistance Project. <http://www.raponline.org/document/download/id/7117>

⁸ U.S. Environmental Protection Agency (2009) *Standby Rates For Customer-Sited Resources Issues, Considerations, and the Elements of Model Tariffs*.
http://www.epa.gov/chp/documents/standby_rates.pdf

1 **Q. What additional experience do you have related to energy efficiency programs,**
2 **MEEIA implementation and economic development riders?**

3 A. On behalf of the Division of Energy, I have participated in The Empire District Electric
4 Company's 2nd and 3rd Demand Side Management Advisory Group Quarterly review
5 meetings in 2014, Ameren Missouri MEEIA Program advisory group meetings, and
6 Ameren Missouri MEEIA Technical Conferences. I have also filed testimony on linking
7 MEEIA to economic development riders in Ameren Missouri's Case No. ER-2014-0258
8 and Empire's Case No. ER-2014-0351.

9 **II. PURPOSE AND SUMMARY OF TESTIMONY**

10 **Q. What is the purpose of your testimony?**

11 A. The purpose of my testimony is to present DE's recommendation to modify KCP&L's
12 EDR and UCD to include participation in applicable KCP&L MEEIA Programs as an
13 eligibility requirement for taking service under the special rate.

14 I also address DE's recommendation to form a working group to review the Standby
15 Service Tariff for the purposes of 1) ensuring that the design of standby rates and the
16 terms and conditions of service are consistent with best practices and 2) to develop
17 recommendations on cost-based rate levels.

18 **Q. Please provide a summary of your findings related to requiring MEEIA**
19 **participation as a condition of receiving EDR and UCD discounted rates.**

20 A. The information I reviewed in preparation for this testimony resulted in these findings:

- 21 • MEEIA statute states that:
22 It shall be the policy of the state to value demand-side
23 investments equal to traditional investments...In support of
24 this policy the commission shall ensure that utility financial

1 incentives are aligned with helping customers use energy
2 more efficiently...⁹

3 • Commission rules cite the MEEIA statute (393.1075) and reinforce implementation
4 of the state policy to “Ensure that utility financial incentives are aligned with helping
5 customers use energy more efficiently...”¹⁰ Economic development riders create
6 incentives that have not yet been aligned with energy efficiency. My
7 recommendation provides the Commission with the opportunity to establish that
8 alignment.

9 • KCP&L’s MEEIA portfolio includes energy efficiency programs
10 applicable to commercial and industrial customers—the same
11 customers targeted for the EDR and UCD.

12 • KCP&L’s EDR and UCD tariff sheets should be modified to include
13 participation in applicable Business Energy Efficiency Programs as
14 an eligibility requirement for taking service under the special rate.

15 • Connecting energy efficiency with utility incentives is not a new
16 idea. Public utility Commissions in Indiana and Wisconsin link
17 energy efficiency considerations to EDR participation.

18 **III. LINKING ECONOMIC DEVELOPMENT INCENTIVES TO ENERGY**
19 **EFFICIENCY PROGRAMS**

20 **Q. Would Commission approval of your recommendation cause KCP&L to develop**
21 **new programs or personnel expertise?**

22 **A. I do not anticipate the need for KCP&L to develop new programs or personnel expertise.**

⁹ 393.1075.3

¹⁰ 4CSR 240-20.093(2)(c)2

1 **Q. Please explain.**

2 A. KCP&L's programs and personnel are already in place and fully functioning to address
3 1) new commercial and industrial customers interested in receiving the EDR/UCD; and
4 2) customers that choose to take advantage of KCP&L's energy efficiency program
5 incentives.

6 **Q. What exactly would be the direct impact on KCP&L if the Commission approved
7 your recommendation?**

8 A. When a prospective EDR/UCD customer is in negotiation with KCP&L, an additional
9 discussion would occur in which KCP&L's MEEIA programs would be reviewed and
10 applicable measures identified. Only those measures that are both applicable and have an
11 incremental pay back of five years or less would become part of the EDR/UCD. If there
12 are no applicable measures identified, or the identified measures cannot meet the payback
13 criteria, no energy efficiency measures would be required to receive EDR/UCD benefits.

14 **Q. Would a potential MEEIA opt-out customer be allowed to opt-out and receive
15 discounted rates under the EDR/UCD schedules?**

16 A. No. All customers requesting special service rates under the EDR/UCD tariffs would be
17 required to participate in MEEIA and implement all applicable energy efficiency
18 measures with a payback period of five years or less.

19 **Q. Is it reasonable to require opt-out eligible customers to participate in MEEIA as a
20 condition of receiving special rates under the EDR/UCD?**

21 A. Yes. Independently, both MEEIA and EDR/UCD participation are voluntary. It is
22 reasonable that the Commission exercise its authority to specify efficiency-promoting

1 conditions for the voluntary EDR/UCD Tariff, including a requirement to participate in
2 MEEIA for the term of the EDR/UCD.

3 **Q. Is it logical to deduce that the commercial and industrial customers who have**
4 **elected to participate in KCP&L's energy efficiency programs have done so because**
5 **it was to their benefit?**

6 A. Yes.

7 **Q. Is it logical to deduce that a potential EDR/UCD customer might also see**
8 **participation in KCP&L's energy efficiency program to be to their benefit?**

9 A. Yes.

10 **Q. What KCP&L MEEIA energy efficiency programs currently exist that may be**
11 **applicable to potential EDR/UCD customers?**

12 A. The Business Standard Rebate Program, the Business Custom Rebate Program, and the
13 Programmable Thermostat Rebate.

14 **Q. Please describe KCP&L's Business Standard Rebate Program.**

15 A. KCP&L's Business Standard Rebate Program offers pre-set rebates on: energy efficient
16 lighting; HVAC; motors, pumps, fans and drives; EnergyStar appliances; food services
17 and refrigeration; building shell measures; and building computing measures. Customers
18 receive the lesser of the rebate amount or 50% of the installed costs.

19 **Q. Please describe KCP&L's Business Custom Rebate Program.**

20 A. KCP&L's Business Custom Rebate Program offers direct payments and credits for pre-
21 approved projects not covered in the Standard Program, including new equipment
22 purchases, facility modernization, and industrial process improvements. Customers

1 receive the lesser of 1) a buydown to a two year payback; or 2) 50% of the incremental
2 cost.

3 **Q. Please describe KCP&L's Programmable Thermostat Program.**

4 A. KCP&L's Programmable Thermostat Program enables a customer to have a
5 programmable thermostat installed by a certified technician at no cost in return for an
6 agreement to allow KCP&L to control peak demand from June through September by
7 raising the temperature a few degrees when demand is high. These cycling events last no
8 more than four hours and typically occur less than four times per year.

9 **Q. Please summarize KCP&L's EDR.**

10 A. The purpose of the EDR is:

11 to encourage industrial and commercial businesses development
12 in Missouri and retain existing load where possible. These
13 activities will attract capital expenditures to the State, diversify
14 the Company's customer base, create jobs and serve to improve
15 the utilization efficiency of existing Company facilities.¹¹

16 The key EDR incentive is a reduction of pre-tax revenues by 30% the first year, 25% the
17 second year, 20% the third year, 15% the fourth year, and 10% the fifth year.¹²

18 The EDR is only available:

- 19 • To customers qualified for service under Medium General Service ("MGS"), Large
20 General Service ("LGS"), Large Primary Service ("LPS"), Medium General All
21 Electric ("MGA"), Large General All Electric ("LGA") schedules;
- 22 • In conjunction with local, regional and state governmental economic development
23 activities where incentives have been offered and accepted by the customer to locate

¹¹ KCP&L Tariff Sheet 32E

¹² KCP&L Tariff Sheets 32G

1 new facilities, expand existing facilities, or retain existing facilities in the Company's
2 service area;

- 3 • To customers not engaged in the business of selling or providing goods and services
4 directly to the general public;
- 5 • To customers not shifting loads between GMO and KCP&L;
- 6 • To facilities with a peak demand projected to be at least two hundred kW within two
7 years of the date the customer first receives service under this rider (and maintained
8 in years three through five); and
- 9 • To new or existing facilities with an annual load factor of fifty-five percent or greater
10 within two years (and maintained in years three through five) OR a) 100 or more new
11 permanent full-time jobs created, b) capital investment of \$5 million or more, c)
12 additional off-peak usage.

13 **Q. Please summarize KCP&L's UCD.**

14 **A.** The purpose of the UCD is:

15 To encourage industrial and commercial businesses to
16 develop within that portion of the Company's service
17 territory which is bounded by the Missouri River on the
18 north, Interstate 435 on the south and east, and State Line
19 Road on the west.¹³

20 The key UCD incentive is a reduction of pre-tax revenues by 25% the first year, 20% the
21 second year, 15% the third year, 10% the fourth year, and 5% the fifth year and whose
22 annual peak demand and load factor are 240 kW and 50% respectively.¹⁴

23 The UCD availability/applicability criteria:

¹³ KCP&L Tariff Sheet 41

¹⁴ KCP&L Tariff Sheet 41B

- 1 • Customers qualified for service under MGS, LGS, LPS, MGA, LGA (like the EDR)
2 plus Medium General All Electric and Small General Service;
- 3 • Like the EDR, the UCD must be in conjunction with local, regional and state
4 governmental economic development activities where incentives have been offered
5 and accepted to locate or expand existing facilities in the Urban Core Development
6 Area;
- 7 • Unlike the EDR, UCD customers may sell or provide goods and services directly to
8 the general public; and
- 9 • Unlike the EDR, the UCD is available to customers who meet one of the following
10 three criteria: A) locate in a new facility and maintain two or more permanent full-
11 time job positions within the Urban Core Development Area; B) expand existing
12 facilities, or locate in rehabilitated existing facilities and maintain two or more
13 permanent full-time job positions and where the amount of expenditure for such
14 facilities is not less than ten percent of the assessed value; and C) expand existing
15 facilities, or locate in rehabilitated existing facilities and where the amount of
16 expenditure for such facilities is not less than twenty five percent of the assessed
17 value.

1 **Q. Can you provide examples from other states' tariffs which link energy efficiency**
2 **initiatives to economic development rider incentives?**

3 A. Yes. Indiana: Northern Indiana Public Service Company's EDR specifies, under
4 Qualifying Criteria, Power Use Characteristics: "High-efficiency, end-use equipment
5 and construction technologies."¹⁵

6 Wisconsin: Alliant Energy/Wisconsin Power and Light's EDR states that the customer
7 "shall implement all economically viable energy efficient options that have a payback
8 period of five years or less."¹⁶

9 **IV. PROPOSED EDR AND UCD TARIFF MODIFICATIONS**

10 **Q. How should KCP&L's Economic Development Rider, Tariff Sheet 32G and Urban**
11 **Core Development Rider, Tariff Sheet 41A be modified to incorporate energy**
12 **efficiency measures as an eligibility requirement for receiving benefits?**

13 A. I recommend adding the following language: "Electric service under this rider is
14 available in conjunction with participation in applicable MEEIA energy efficiency
15 programs offered by KCP&L with the goal of implementing all appropriate measures
16 with a payback period of five years or less."

17 **Q. To which customers should the tariff modifications apply?**

18 A. The energy efficiency requirement should apply to customers initiating a request to take
19 service under the EDR/UCD following the effective date of the modified tariffs.

¹⁵ Schedule JEL-1, IURC EDR 677, Sheet No. 126

¹⁶ Schedule JEL-1, Alliant Energy, Sheet No. 7.662

1 **V. STANDBY SERVICE FOR SELF-GENERATING CUSTOMERS**

2 **Q. Please provide a summary of your findings related to your recommendation to**
3 **create a workshop to review standby service rates.**

4 **A. Review of KCP&L's Standby Service for Self-Generating Customers, Schedule SGC**
5 **resulted in the following findings:**

- 6 • Properly designed standby rates can facilitate efficiency gains, energy independence and
7 demand-side management opportunities associated with combined heat and power
8 ("CHP") technologies;
- 9 • CHP technologies require significant up-front investment. Standby rates are a key factor
10 in determining the cost-effectiveness of projects. Customers considering such projects
11 can benefit from rate elements, rate levels and terms and conditions of service that are
12 consistent with best practices for standby tariff design;
- 13 • KCP&L's Schedule SGC went into effect in 1997. There was one revision in 2013,
14 which addressed the load that would qualify for Economic Development Rider benefits.
15 However, there is no recent evidence that the rates continue to be cost-based; and
- 16 • Stakeholders have agreed to review stand-by rates as a result of both the recent Ameren
17 Missouri and Empire District Electric Company rate cases. Conducting a concurrent
18 review of KCP&L's standby rates could promote efficiency in the use of stakeholder
19 resources and result in greater consistency in the design of standby service offerings.

1 **VI. PROPOSED STANDBY TARIFF REVIEW**

2 **Q. Please describe how properly designed standby rates can facilitate efficiency gains,**
3 **energy independence and demand-side management opportunities associated with**
4 **combined heat and power technologies.**

5 **A. Properly designed standby rates can allow customers to deploy distributed generation**
6 **including CHP technology that can produce 60 percent to 80 percent higher efficiency**
7 **levels than traditional units. In Missouri, many of the largest CHP installations are**
8 **utilized by hospitals, universities and government entities to meet a portion of energy**
9 **needs as well as to ensure the availability of sufficient energy generation needed to meet**
10 **critical functions during emergencies. A number of large industrial customers in the**
11 **State also utilize CHP. On site generation inherently offers some level of energy**
12 **independence and enables business decisions to be made that can lower energy costs by**
13 **reducing or shifting load served by the utility.**

14 **Q. What level of up-front investment is associated with CHP technologies?**

15 **A. Schedule JEL-3 contains Table 1-3 from the U.S. EPA's *Catalog of CHP Technologies,***
16 **which shows the range of sizes and installed costs for selected CHP technologies. Based**
17 **on information in Table 1-3 I estimate that up-front investments can range from about**
18 **\$1,200 /kWe installed cost for a 40 MW gas turbine to \$4,300/kWe installed cost for a .03**
19 **MW microturbine unit.¹⁷**

¹⁷ Schedule JEL-3. U.S. Environmental Protection Agency (2015) *Catalog of CHP Technologies*.
p 1-6 http://www.epa.gov/chp/documents/catalog_chptech_full.pdf

1 **Q. How do standby rates factor into determining the cost-effectiveness of CHP**
2 **projects?**

3 A. Ill-structured standby rates can function as a direct deterrent to the implementation of
4 CHP projects. In determining the cost-effectiveness as a consideration of project
5 viability, CHP customers must consider standby rates in comparison to taking full service
6 from the investor-owned utilities (“IOU”).

7 **Q. How would customers considering a CHP projects benefit from rate elements, rate**
8 **levels and terms and conditions of service that are consistent with best practices for**
9 **standby tariff design?**

10 A. Cost-based rate elements for components of service allow the customer to take and pay
11 for service according to the customer’s need and provide clear price signals allowing the
12 customer to minimize operating costs when possible. For example, CHP customers
13 should schedule planned maintenance to occur in off-peak times, which results in a cost
14 savings for the customer and a benefit to the utility system. Another example is the
15 choice a customer may make to purchase utility power when it costs less than onsite
16 generation. Every customer decision that can result in cost savings associated with
17 efficient use of energy increases profitability and competitiveness.

18 **Q. KCP&L’s Schedule SGC tariff went into effect in 1997 and has been revised once in**
19 **2013 to limit EDR benefits to baseload. Why is it reasonable to reevaluate standby**
20 **service rates at this time?**

21 A. Since 1997 there has been increasing interest in the benefits and efficacy of distributed
22 generation. Distributed generation customers may be motivated by a number of benefits,
23 including lower utility bills, increased energy independence and control, and utilization

1 of alternative energy technologies. The design and structure of standby rates have a
2 direct effect on the efficacy of a customer's choice to deploy distributed generation. It's
3 in Missouri's interest for utility regulations to reflect the best available information and
4 respond to potential economic development opportunities. Effective standby rates may
5 incent customers to generate electricity on-site while fairly addressing the associated
6 costs to the utility. The U.S. EPA's *Standby Rates for Customer-Sited Resources Issues,*
7 *Considerations, and the Elements of Model Tariffs* suggests that favorable standby rate
8 design gives customers an incentive to use energy efficiently, to minimize costs imposed
9 on the system, and to avoid charges when service is not taken.¹⁸

10 **Q. Stakeholders have agreed to review stand-by rates as a result of recent settlements**
11 **in the Ameren Missouri and Empire District Electric Company rate cases. Please**
12 **explain how conducting a concurrent review of KCP&L's standby rates would be**
13 **beneficial.**

14 **A.** The review of current best management practices for standby rates is applicable to all
15 regulated IOU's. Concurrent review of standby rates would promote efficiency of staff
16 time and resources. Concurrent review may also result in a better product, due to
17 collaboration, and potentially greater consistency of standby rates.

¹⁸ U.S. Environmental Protection Agency (2009) *Standby Rates For Customer-Sited Resources Issues, Considerations, and the Elements of Model Tariffs.*
http://www.epa.gov/chp/documents/standby_rates.pdf

1 **VII. CONCLUSION**

2 **Q. Please restate your recommendations.**

3 A. The Division of Energy respectfully recommends that:

4 1) the Commission approve modifications to KCP&L's Economic Development Rider
5 and Urban Core Development Rider to include participation in applicable KCP&L
6 MEEIA programs as eligibility requirements for taking service under these special rates.
7 2) a working group be established to review KCP&L's Standby Service Tariff for the
8 purposes of 1) ensuring that the design of standby rates and the terms and conditions of
9 service are consistent with best practices and 2) to develop recommendations for cost-
10 based rate levels.

11 **Q. Does this conclude your direct testimony?**

12 A. Yes, thank you.

RIDER 677
ECONOMIC DEVELOPMENT RIDER

No. 1 of 3 Sheets

TO WHOM AVAILABLE

This Rider shall be applicable to the Rate Schedules as defined in Appendix A.

This Economic Development Rider is available to Industrial and Commercial Customers for new or increased service requirements that result in increased employment opportunities, which are new to the State of Indiana and whose plants are located adjacent to existing electric facilities having capacity sufficient to meet the Customer's requirements. Applicants must demonstrate that, absent the availability of this Rider, this new service requirement and any related employment opportunities would be located outside the Company's electric service territory. Increased service requirements which displace or duplicate existing load in the Company's service territory or are brought about by the shutdown of cogeneration facilities will not qualify under this Rider.

For Customers that were taking service from the Company under Economic Development Rider 848.2 prior to the effective date of this Rider 677, service under this Rider 677 shall terminate upon the expiration of the contract existing between the Customer and the Company.

For new Customers, service under this Rider shall commence upon the effective date of a contract between the Company and the Customer providing for service under the appropriate Rate Schedule between the Customer and the Company and shall terminate upon the earliest of: (1) the contract term; or (2) upon the effective date of new base rates resulting from a Commission Order in a base rate case.

CONTRACT

Service under this Rider requires a contract between the Customer and the Company. The contract shall set forth monthly base period kilowatts and kilowatt hours, which shall be deemed those actually used during the preceding twelve (12) months. If new or increased Company facilities are required, the Customer shall be responsible for same in compliance with the Company's General Rules and Regulations applicable to electric service in effect at the time of the contract execution.

RATE

For qualifying existing Customers with electric service and Energy supplied by the Company, other than that accounted for in a completed contract under the terms and conditions of this Economic Development Rider (where applicable), the existing Energy requirements shall be deemed the Customer's base load and will be billed on the appropriate Rate Schedule. For the Energy requirements of qualifying new Customers, and for the non-base load service and Energy requirements of existing Customers, a discount on monthly billings for all applicable purchases shall be applied in accordance with the following criteria for bills issued during the respective months starting from contract commencement date:

Issued Date
12/21/2011

Effective Date
12/27/2011

RIDER 677
ECONOMIC DEVELOPMENT RIDER

No. 2 of 3 Sheets

RATE (continued)

Year 1 Contract	Up to 50% of the increased base rate charges
Year 2 Contract	Up to 40% of the increased base rate charges
Year 3 Contract	Up to 30% of the increased base rate charges
Year 4 Contract	Up to 20% of the increased base rate charges
Year 5 Contract	Up to 10% of the increased base rate charges

As an alternative to the above discount tiers and at the Company's sole discretion, the Company may elect to offer up to 30% per year over the 5-year contract period.

In no event, however, shall the incremental revenues derived from the discounted base rate charges, as stated above for serving the new or increased load, be allowed by the Company to be less than the Company's marginal Energy costs, plus the marginal capacity costs, to serve said load or the minimum billing provisions of the base rate.

At the completion of the Rider contract term, the Energy supplied in accordance with this Rider will be furnished under the appropriate Rate Schedule in accordance with the contract between the Company and the Customer.

The size and duration of discounts on monthly bills will be determined on an individual Customer basis given the degree of fulfillment of the following criteria. The determination of monthly discounts to be applied will be at the sole discretion of the Company, but such discounts will vary with the number and extent to which the listed criteria are met by Customer's proposed new or expanded load. The Company will monitor the awarding of all contracts to insure the fulfillment by the Customer of all terms and conditions of the contract associated with the award. Nonfulfillment of contract terms and conditions is grounds for reopening and reevaluation of all contract terms and conditions. Confidentiality shall be maintained regarding the terms and conditions of any completed contract as well as all Customer negotiations, successful or otherwise.

ELIGIBILITY THRESHOLDS

Unless otherwise noted, the criteria listed as follows will be used in determining the eligibility for the awarding of incentives under the terms and conditions of this Rider. Flexibility in the use of these criteria is at the sole discretion of the Company.

1. Full-time equivalent job creation per project: minimum 10.
2. New electrical Demand: minimum 100 kW.
3. Customer documentation/certification to be provided noting "Customer is considering other specific electric service territories as alternate locations for their planned new facility or expansion."

Issued Date
9/17/2014

Effective Date
9/17/2014

RIDER 677
ECONOMIC DEVELOPMENT RIDER

No. 3 of 3 Sheets

QUALIFYING CRITERIA

Incentives awarded under the terms and conditions of this Rider to eligible Customers as determined by the Company using the guidelines as listed above in Eligibility Thresholds shall be dependent upon the number and degree of fulfillment attained of the following criteria. The Company shall have the final determination of all incentives based on the determination of issues deemed most beneficial to all stakeholders.

Economic and/or Environmental Distress

- a. Brown field site development. For purposes of this Rider, a brownfield shall be areas of NIPSCO's territory where existing transmission and distribution facilities are not at capacity and limited new facilities would be required for new business.
- b. Above-county-average wage to be paid by prospect.
- c. Other Indiana "Accelerating Growth" Guidelines, or Future State of Indiana Economic Development Goals.
- d. Any federal, state or local incentives and the degree thereof.

Power Use Characteristics

- a. High-efficiency, end-use equipment and construction technologies.
- b. "Clean Power" usage considerations.
- c. High load-factor operations

Site Specific Discounts

- a. Community master plan compliance.
- b. Industrial park location where municipal utilities, zoning and streets already exist.
- c. Utilization of existing industrial sites.
- d. Proximity to existing Company facilities.
- e. Loading of existing Company facilities.

Number of Jobs Created

Full-time equivalent job creation per project.

Issued Date
12/21/2011

Effective Date
12/27/2011

**ECONOMIC DEVELOPMENT PROGRAM RIDER
(Experimental)**

ELECTRIC

1. Effective In

The Economic Development Program Rider ("Rider") is available in all territory served by Wisconsin Power and Light Company ("the Company").

2. Availability

This Rider is available to all customers served, or to be served, under Rate Schedules CP-1, or CP-2, that meet all of the following additional conditions:

- This Rider is applicable to New or Incremental Load Customers:
 - The incremental load added by new customers, or
 - The incremental load added by existing customers relative to prior calendar year load levels for that customer.
- With the prior approval of the Public Service Commission of Wisconsin ("the Commission" or "the PSCW") this Rider may be applicable to existing customers in economic distress that have legitimate opportunities to move operations out of Wisconsin ("Load Retention Customers"). Applicability of the Rider to Load Retention Customers will be based upon the Commission's review of the customer's financial status and the customer's opportunities to move operations out of Wisconsin and any other factors as determined by Commission.
- The customer must have qualified to receive, and have received local, county, State of Wisconsin or federal financial assistance for economic development or economic stimulus. The minimum value of the economic development assistance from a local, county, State of Wisconsin, or federal entity that the customer has received must be no less than \$ 500,000. The last page of this Rider provides a listing of qualifying economic development programs
 - For New or Incremental Load Customers, the customer must have received the assistance for the specific project that adds incremental load before it first accepts service under this Rider.
 - For Load Retention Customers, the customer must have received economic development assistance from a local, county, State of Wisconsin, or federal entity within the 24 months prior to the customer qualifying for this Rider.

This Rider is not available to customers or potential customers transferring load from a different electricity provider in Wisconsin to Wisconsin Power and Light Company.

This is an experimental pilot tariff rider program. The terms and conditions of this tariff may be modified outside of a rate proceeding, subject to approval by the PSCW.

3. Load Applicable to the Rider

- Incremental Load Customers
 - i. The base level of load for an incremental Load Customer is the customer's energy consumption for each month of the prior calendar year.
 - ii. If the customer's energy consumption for a month in the current year exceeds

**ECONOMIC DEVELOPMENT PROGRAM RIDER
(Experimental)**

ELECTRIC

the customer's energy consumption for the same month of the base year, the additional kilowatt-hours are incremental load that qualifies for the Rider.

iii. The customer need not have incremental load every month of the year, but at the end of each 12-month period that the customer has been on the Rider, the Company shall determine whether the customer's total incremental load for the entire twelve months exceeds the annual base level. If not, the customer is disqualified from the Rider.

- **New Customers**
 - i. All electric load from the customer's new facilities in Wisconsin qualifies as incremental.
- **Load Retention Customers**
 - i. The Commission reserves the right to decide how much load qualifies for the Rider when it reviews the customer's application and approves the customer's qualification for the Rider.

4. Rate

The rates established for each customer's incremental load will be based upon the applicable Cp-1, Cp-1A, Cp-1B, Cp-2, Cp-2A or Cp-2B rate schedules. The rates will be discounted such that the individual customer's rates for the first year of eligibility cover a floor price that reflects 105% of the marginal cost of serving the customer's incremental load, as determined on an individual customer basis.

The level of discount initially available under this Rider shall decline by an equivalent prorated reduction over each year of the contract term such that at the end of the contract the customer's rates shall be the tariff rates in force at such time.

Customer rates for incremental load under this Rider shall be updated for all changes to tariff rates, including fuel cost surcharges or fuel cost credits.

The calculation of the floor price shall consider any other discounts applicable to the customer and shall consider expected load curves and on-peak / off-peak energy usage projections.

Marginal costs consists of the following cost components:

- energy at marginal rate levels equal to the projected Locational Marginal Price (LMP) forecasts underlying in the approved fuel cost projections from the most recent WPL base rate case, or base rate case re-opener proceeding
- marginal transmission and distribution losses
- transmission charges
- applicable distribution charges
- energy efficiency charges under Act 141
- gross receipts taxes.

5. Overall Subscription Limitations (\$5,000,000)

This pilot program is intended to be limited to a total annual level of discounts totaling no more than five million dollars on a cumulative annual basis during the pilot program period unless

**ECONOMIC DEVELOPMENT PROGRAM RIDER
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specifically authorized by the Commission to exceed that amount.

The Company may offer this pilot program until December 31st, 2014. Contracts entered into during this pilot program shall be effective until their termination.

(R)

6. Contract & Enrollment Period

Agreement to subscribe to this tariff will be established under a written contract between the customer and the Company. Customers with a signed contract may remain on the tariff for a term of up-to 5 years from the date of full commercial operation. Full commercial operation must be achieved within 12 months from the date of the signed contract, unless both parties mutually agree to extend that time period. Accommodations can be made for phased projects, additions, rehabilitation, and upgrading as mutually agreed between the customer and the Company.

7. Affidavit Requirement

To be eligible for this Rider a New or Incremental Load Customer shall sign an affidavit, attesting to the fact that "but for" the rate discounts available under this Rider, either on its own or in combination with a package of economic development or job creation incentives from local, county, State of Wisconsin, or federal programs the customer would not have located operations or added load within Wisconsin Power and Light Company's service territory.

In order to be eligible for this Rider, a customer in economic distress (Load Retention Customer) that is seeking to retain its existing load shall sign an affidavit, attesting to the fact that "but for" the rate discounts available under this Rider, either on its own or in combination with a package of economic development or job creation incentives from local, county, State of Wisconsin, or federal programs, the customer would be reducing its energy consumption, shutting facilities in Wisconsin Power and Light Company's service territory in Wisconsin, or leaving Wisconsin.

8. Sustained Operation Provision

Customer shall be required to enter into an agreement with the Company that in the event that a Customer receiving discounted rates for incremental load under this Rider fails to sustain its operations and reduces its load below the base level established when it first qualified for this Rider (see paragraph 3) during the term of the contract, the Customer will be disqualified from receipt of discounted rates under this rider for the remainder of the contract term, and the contract shall be terminated. In addition, the customer shall be required to reimburse to the Company an amount equivalent to the discounts received in the most recent two years that the customer was on the Rider.

9. Energy Efficiency and Demand Side Management Requirements

In order to be eligible for this Rider the Customer shall be required to meet with Focus on Energy, and the Company's Shared Savings representatives to identify economically viable energy efficiency and demand side management opportunities. The Customer shall participate in or implement all economically viable programs or projects that have a projected pay-back period of five years or less. The Customer shall implement all such programs or projects within the contract term for service under this Rider. The Customer may request an independent economic analysis of the economic viability of such programs or projects, at the Customer's

**ECONOMIC DEVELOPMENT PROGRAM RIDER
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contract term for service under this Rider. The Customer may request an independent economic analysis of the economic viability of such programs or projects, at the Customer's cost.

10. Miscellaneous

- The customer must follow and meet all other conditions applicable to receipt of service under tariffed rate schedules as applicable
- Discount percentages calculated prior to the provision of service based on load forecasts from the customer shall be reviewed each calendar year and the floor rate shall be revised as necessary to reflect current load expectations.
- The customer shall notify the Company of any material changes in operations that could impact the calculation of the customer's floor rate, e.g.
 - If the customer's operations change energy or demand usage by more than ten percent on a sustained basis for 6 months the customer shall notify the Company. The Company and the customer will then evaluate whether the changes in the Customer's energy and demand are expected to continue and whether such changes merit a reevaluation of the floor rate.
 - If the customer changes base rate schedules after the original evaluation of the floor rate, the floor rate and associated discount will be reevaluated.
- During the contract period the Company will review and adjust the customer's floor rate and discount, as needed, to account for changes, including but not limited to, rate designation, load forecasts, and applicable state and federal laws and regulations.
- All service rules and extension rules that apply to Schedule Cp-1, Cp-1A, Cp-1B, Cp-2, Cp-2A, or Cp-2B will apply to customer taking service under this rider.

11. Qualifying Economic Development Programs:

State of Wisconsin Programs

CAPITAL FINANCING PROGRAMS

Wisconsin Development Fund (WDF)
Rural Economic Development Program (RED3)
Minority Business Development Fund (MBD)
Technology Development Fund (TDF)
Technology Venture Fund Loan Program (TVF)
Technology Bridge Grant and Loan Program (TBG)
Technology Matching Grant and Loan Program (TMG)
Community Development Block Grant Program (CDBG-ED)
Industrial Revenue Bond Program (IRB)

EMPLOYEE TRAINING PROGRAMS

Customized Labor Training Program (CLT)
Best Employees' Skills Training (BEST)

COMMUNITY DEVELOPMENT PROGRAMS

Brownfield Grant Program (BF)
Community Development Block Grant Program – Blight Elimination &
Brownfield Redevelopment (CDBG-BEBR)

**ECONOMIC DEVELOPMENT PROGRAM RIDER
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Community Development Block Grant Program – Public Facilities (CDBG-PF)
Community Based Economic Development Program (CBED)

TAX BENEFIT PROGRAMS

Agriculture Development Zone (ADZ)
Community Development Zone (CDZ)
Enterprise Development Zone (EDZ)
Development Opportunity Zone Program (DOZ)
Technology Zone Program (TZ)
Enterprise Zone Program ((EZ 10)

Local or County Programs

Financial assistance from a local Revolving Loan Fund
Establishment of or location in a Tax Increment Financing District
Direct loan from a unit of local government
Construction of public facilities – roads, sewer, water – to serve a project
Site acquisition and clearance
Building renovation assistance

Federal Programs

Loan Guarantees
Grants
Investment Tax Credits
Income Tax Credits tied to New Hiring
Low-Interest Loans

Other, subject to Commission Approval

12. The Company's Reporting Requirements

The Company shall notify the Commission when it adds or removes customers from the Rider.

By March 31, of each year the Company will file a report with the Commission providing the following information.

- Unemployment rates by county in the Company's service territory and the statewide unemployment rate, compared to a baseline period (years 2005, 2006, and 2007).
- The most recent three-year average industrial sales volume, compared to the baseline period.
- The number of customers enrolled in the Rider during the year.

ECONOMIC DEVELOPMENT PROGRAM RIDER
(Experimental)

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- The number of customers that completed the Rider during the year and are taking service at non-discounted rates.
- The number of customers that dropped out of the program during the year.
- The total number of customers enrolled in the program, stratified according to the years in the program and the corresponding prorated level of discount.
- The incremental revenues that the Company received during the calendar year under the program.
- The incremental energy that customers in the program consumed during the calendar year.

FORM NO. 13

P. S. C. MO. No. 7

First

~~Original~~
Revised

SHEET No. 28

Cancelling P. S. C. MO. No. 7

Original
~~Revised~~

SHEET No. 28

KANSAS CITY POWER & LIGHT COMPANY

Name of Issuing Corporation or Municipality

For... Missouri Retail Service Area

Community, Town or City

RECEIVED

Standby Service for Self-Generating Customers
Schedule SGC

JUN 18 1997

MO. PUBLIC SERVICE COMM

AVAILABILITY

Electric Service is available under this schedule at points on the Company's existing transmission or distribution facilities located within its retail service area for Customers having an electricity generator with maximum capacity over 100 kW. The Customer's generator must be capable of serving all or a portion of their full power demand requirement. The Company reserves the right to determine the applicability or the availability of this price schedule to any specific applicant for electric service who meets the above criteria.

This price schedule is not available for standard retail service or resale. The Customer must enter into a contractual agreement with the Company (pursuant to Missouri Department of Economic Development Cogeneration Rule 4 CSR 240-20.060 if applicable) to receive service under this schedule.

SPECIAL PROVISIONS

A. Pricing Methodology:

The energy prices are hourly and will be transmitted to the Customer by 4 p.m. on the day before the prices apply, except possibly on Sundays, Mondays and days following holidays, when KCPL will endeavor to provide the prices by 4 p.m. of the previous business day. Customers will pay a monthly Access Charge that depends on: 1) the tariff prices of the baseline or standard tariff at which the Customer would otherwise be taking service (SGS, MGS, LGS, LPS, SGA, MGA, or LGA), 2) the billing determinants derived from the historical Customer Baseline Loads, and 3) the hourly energy prices. The composition of the Access Charge is detailed in the Bill Determination section below.

B. Metering of Load:

Customers taking service under this option must have or have installed a conventional hourly recording meter. If the Customer is to sell power to the Company, they must also have meters that allow sales to KCPL to be recorded. KCPL will have the right to install and maintain load profile meters for monitoring the Customer's energy production and usage. This metering will be at the Customer's expense but must be accessible to the Company at any time.

TERM OF CONTRACT AND TERMINATION

The Customer may return to service under a standard, generally available tariff if they no longer require standby service by giving written notice six (6) months in advance. However, any incremental Facilities, Administrative and Interconnection costs must be paid for the remainder of the term of the contract if the Customer returns to service under a standard, generally available tariff.

FILED

JUL 13 1997

DATE OF ISSUE June 18, 1997
month day year

DATE EFFECTIVE July 13, 1997
month day year

ISSUED BY M. C. Sholander
name of officer

General Counsel
title

1201 Walnut, Kansas City, Mo.
address

KCPL Form 661H002 (Rev 1/97)

KANSAS CITY POWER & LIGHT COMPANY
Name of Issuing Corporation or Municipality

For **Missouri Retail Service Area**
Community, Town or City

RECEIVED

**Standby Service for Self-Generating Customers
Schedule SGC**

JUN 18 1997
(cont.)

MO. PUBLIC SERVICE COMM

CUSTOMER BASELINE LOAD (CBL)

The Customer Baseline Load (CBL) is one complete year of Customer-specific load data that represents the electricity consumption pattern and level typical of this Customer's operation under the standard price schedule. The CBL normally will be based upon the Customer's pattern and level of kWh usage in the most recent calendar year prior to taking service under this schedule. In order to formulate a CBL that achieves a representative load pattern, the Company may make adjustments to historical usage data or may estimate usage if historical data are not available or are not appropriate. The CBL must be mutually agreed upon by both the Customer and the Company. Agreement on the CBL is a precondition for service under this tariff. In general, the Company will not increase the CBL when a Customer increases load. If there is a significant decrease in the Customer's full electrical load, including the portion generated by the Customer, then the Company will review the CBL with the Customer to determine if it should be reduced.

BILL DETERMINATION

The bill for Standby Service is rendered after each monthly billing period. The charges cover system access; Back-up, Maintenance, and Supplemental Energy services; and Interconnection, Facilities, and Administrative charges. The Customer's Standby Bill is calculated as follows:

Standby Bill = Standard Bill + $\sum_{hr} RTP_{hr} \times [ActualkWh_{hr} - CBLkWh_{hr}] +$
Reactive + PC - Payment
= Standard Bill - $\sum_{hr} [RTP_{hr} \times CBLkWh_{hr}] + \sum_{hr} [RTP_{hr} \times ActualkWh_{hr}] +$
Reactive + PC - Payment

Where:

Standard Bill = Customer's bill for a specific month on usage as defined by the CBL and billed under the standard price schedule, including reactive billing if applicable;

RTP_{hr} = The hourly Real-Time Prices based on Schedule RTP-Plus and adjustments as described below in the sections concerning Prices and Interruptible Service;

CBLkWh_{hr} = The Customer Baseline kWh usage in each hour;

ActualkWh_{hr} = The Customer's actual usage during each hour;

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MO. PUBLIC SERVICE COMM

DATE OF ISSUE June 18, 1997 DATE EFFECTIVE July 13, 1997
month day year month day year

ISSUED BY M. C. Sholander General Counsel 1201 Walnut, Kansas City, Mo.
name of officer title address

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KANSAS CITY POWER & LIGHT COMPANY

P.S.C. MO. No. 7 Sixth Original Sheet No. 28B

Revised

Cancelling P.S.C. MO. 7 Fifth Original Sheet No. 28B

Revised

For Missouri Retail Service Area

STANDBY SERVICE FOR SELF-GENERATING CUSTOMERS Schedule SGC (Continued)

BILL DETERMINATION (continued)

Reactive = Incremental reactive power charge, calculated by taking the difference between the bill for reactive power using the standard rate applied to the current month quantities and the bill based on the historical CBL quantities. This charge may be positive or negative;

PC = Interconnection Charge + Facilities Charge + Administrative Charge; and

Payment = Payment from KCPL for electricity services supplied by the Customer to KCPL
= $\sum_{hr} [RTP:MC_{hr} * QFKWh_{hr}]$;

Where:

RTP:MC_{hr} = Adjusted RTP-Plus prices each hour, with adjustments as described below in the section on Prices; and

QFKWh_{hr} = Electricity supplied to the Company by the Customer in each hour.

The Access Charge is defined as follows:

Access Charge = The difference between the Standard Bill and the monthly sum of the product in each hour of the CBL kWh multiplied by the hourly energy price;
= Standard Bill - $\sum_{hr} [RTP_{hr} * CBLkWh_{hr}]$.

PRICES

The baseline tariff prices that are used in the calculation of the Standard Bill can be found on the Customer's applicable standard tariff sheets (Schedule SGS, MGS, LGS, LPS, SGA, MGA, or LGA).

The hourly energy prices are the Real Time Prices from Schedule RTP-Plus, except when modified for transmission or interruptible service. The hourly energy prices will be adjusted with a transmission service adder during the following hours on non-holiday weekdays in July and August:

Hours	Price Adder
11:00 a.m. - 2:00 p.m.	\$ 0.02839 per kWh
2:00 p.m. - 6:00 p.m.	\$ 0.06936 per kWh
6:00 p.m. - 7:00 p.m.	\$ 0.02839 per kWh

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ISSUED BY: Darrin R. Ives, Senior Director

DATE EFFECTIVE: ~~February 15, 2013~~ January 26, 2013
Kansas City, MO

Filed
Missouri Public
Service Commission
ER-2012-0174; YE-2013-0325
Schedule JEL 2 Page 3

FORM NO. 13

P. S. C. MO. No. 7

(Original) SHEET No. 28C
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Cancelling P. S. C. MO. No.

(Original) SHEET No.
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KANSAS CITY POWER & LIGHT COMPANY

Name of Issuing Corporation or Municipality

For Missouri Retail Service Area
Community, Town or City

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**Standby Service for Self-Generating Customers
Schedule SGC**

**JUN 18 1997
(cont.)**

MO. PUBLIC SERVICE COM

PRICES (continued)

The transmission service hourly price adder will be applied only during the calendar months of July and August. The adder will not be included in the hourly energy price on Independence Day or any weekday celebrated as such if the holiday falls on a weekend. The transmission service adder values shown above are to be applied at the primary service voltage level. If the Customer is served at a voltage level other than primary, the value of the transmission adder will be adjusted for the appropriate difference in energy losses.

The RTP-Plus prices paid to the Customer for electric service sold to the Company are adjusted: 1) to reflect the marginal line loss specific to the Customer's location and voltage delivery level (rather than the averaged value used in the RTP-Plus prices); and 2) to remove the risk factor that KCPL includes to compensate for forecasting marginal costs one day ahead. The transmission service adder is not included in the hourly energy price paid to the Customer.

INTERCONNECTION CHARGE

Customers will be responsible to the Company for any additional cost associated with providing Interconnected Service under this tariff (as per Missouri 4 CSR 240-20.060(1)(C) and (2)(C)3 if applicable). This cost will be collected from customers during the full term of the contract period, even if they return to service under the standard tariff before the contract period is complete.

FACILITIES CHARGE

A Facilities Charge will be assessed to cover the cost of any additional facilities that are necessary to serve the Customer under the terms of this tariff and that are not included in the Interconnection Charge. If the Company is required to either increase the capacity or accelerate its plans for increasing the capacity of the transmission or distribution facilities to accommodate a Customer's altered load under this schedule, then an additional Facilities Charge will be assessed if the expansion is not revenue justified using KCPL's current methodology. The incremental costs related to these facilities will be collected from customers during the full term of the contract period, even if they return to service under the standard tariff before the contract period is complete.

ADMINISTRATIVE CHARGE

This charge is to cover billing and administrative costs beyond those covered in the standard tariff. This charge will not include any cost already accounted for in the Interconnection or Facilities Charges. This cost will be collected from customers during the full term of the contract period, even if they return to service under the standard tariff before the contract period is complete.

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DATE OF ISSUE June 18, 1997
month day year

DATE EFFECTIVE July 13, 1997 JUL 13 1997
month day year

ISSUED BY M. C. Sholander
name of officer

General Counsel
title

1201 Walnut, Kansas City, Mo.
address

KCPL Form 661H002 (Rev 1/97)

KANSAS CITY POWER & LIGHT COMPANY

P.S.C. MO. No. 7 First Original Sheet No. 28D
 Revised
Cancelling P.S.C. MO. No. 7 Original Sheet No. 28D
 Revised
For Missouri Retail Service Area

Standby Service for Self-Generating Customers Schedule SGC (Continued)

SPECIAL PROVISIONS FOR MPOWER CUSTOMERS:

If the Customer requests and qualifies for service under the MPOWER Rider, the MPOWER credits will be included in the calculation of the Standard Bill component of the total Standby Bill. Standby Service is interruptible to the same extent that it is reflected in the CBL used in calculating the Standard Bill. If the credit rates under the MPOWER Rider change, corresponding adjustments will be made in the calculation of the Standard Bill under this tariff to reflect the modified credit value. The curtailment provisions of the rider will continue to apply as stated in the rider. During periods in which actual load interruption is requested by the Company, the CBL will be adjusted to the firm (non-interruptible) load level if this value is lower than the CBL. The outage cost component of the hourly RTP-Plus prices will not be applied to the interruptible portion of the Customer's Baseline and actual loads in any hour.

SPECIAL PROVISIONS FOR CUSTOMERS WITH AN ECONOMIC DEVELOPMENT RIDER

Economic Development Rider (EDR) Customers will continue to receive the discounts provided for in the rider except that they will apply to the CBL usage only. Changes in usage from the CBL quantities will be priced at the hourly energy prices under this schedule, not at the EDR rate. The EDR discount percentage will change each year in accordance with the EDR provisions even though the CBL quantities remain fixed.

SPECIAL PROVISIONS FOR CUSTOMERS WITH A THERMAL STORAGE RIDER

This rider will not be available in combination with Standby Service.

SPECIAL PROVISIONS FOR ELECTRIC HEATING CUSTOMERS

For customers that are currently taking service with separately metered space heat, the kWh usage is determined by summing the usage from the separate meters, both for the CBL and for the current period.

TAX ADJUSTMENT

Tax Adjustment Schedule TA shall be applicable to all Customer billings under this schedule.

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

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ISSUED BY: Chris Gilles
Vice-President

DATE EFFECTIVE: May 14, 2006
1201 Walnut, Kansas City, Mo. 64106

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Service Commission

Table 1-3. Comparison of CHP Technology Sizing, Cost, and Performance Parameters

Technology	Recip. Engine	Steam Turbine	Gas Turbine	Microturbine	Fuel Cell
Electric efficiency (HHV)	27-41%	5-40+ ²	24-36%	22-28%	30-63%
Overall CHP efficiency (HHV)	77-80%	near 80%	66-71%	63-70%	55-80%
Effective electrical efficiency	75-80%	75-77%	50-62%	49-57%	55-80%
Typical capacity (MW _e)	.005-10	0.5-several hundred MW	0.5-300	0.03-1.0	200-2.8 commercial CHP
Typical power to heat ratio	0.5-1.2	0.07-0.1	0.6-1.1	0.5-0.7	1-2
Part-load	ok	ok	poor	ok	good
CHP Installed costs (\$/kW _e)	1,500-2,900	\$670-1,100	1,200-3,300 (5-40 MW)	2,500-4,300	5,000-6,500
Non-fuel O&M costs (\$/kWh _e)	0.009-0.025	0.006 to 0.01	0.009-0.013	0.009-.013	0.032-0.038
Availability	96-98%	72-99%	93-96%	98-99%	>95%
Hours to overhauls	30,000-60,000	>50,000	25,000-50,000	40,000-80,000	32,000-64,000
Start-up time	10 sec	1 hr - 1 day	10 min - 1 hr	60 sec	3 hrs - 2 days
Fuel pressure (psig)	1-75	n/a	100-500 (compressor)	50-140 (compressor)	0.5-45
Fuels	natural gas, biogas, LPG, sour gas, industrial waste gas, manufactured gas	all	natural gas, synthetic gas, landfill gas, and fuel oils	natural gas, sour gas, liquid fuels	hydrogen, natural gas, propane, methanol
Uses for thermal output	space heating, hot water, cooling, LP steam	process steam, district heating, hot water, chilled water	heat, hot water, LP-HP steam	hot water, chiller, heating	hot water, LP-HP steam
Power Density (kW/m ²)	35-50	>100	20-500	5-70	5-20
NO _x (lb/MMBtu) (not including SCR)	0.013 rich burn 3-way cat. 0.17 lean burn	Gas 0.1-2 Wood 0.2-5 Coal 0.3-1.2	0.036-0.05	0.015-0.036	0.0025-.0040
NO _x (lb/MWh _{Total Output}) (not including SCR)	0.06 rich burn 3-way cat. 0.8 lean burn	Gas 0.4-0.8 Wood 0.9-1.4 Coal 1.2-5.0.	0.52-1.31	0.14-0.49	0.011-0.016

² Power efficiencies at the low end are for small backpressure turbines with boiler and for large supercritical condensing steam turbines for power generation at the high end.