Energy Options for Independence

History of Independence Power & Light

1901

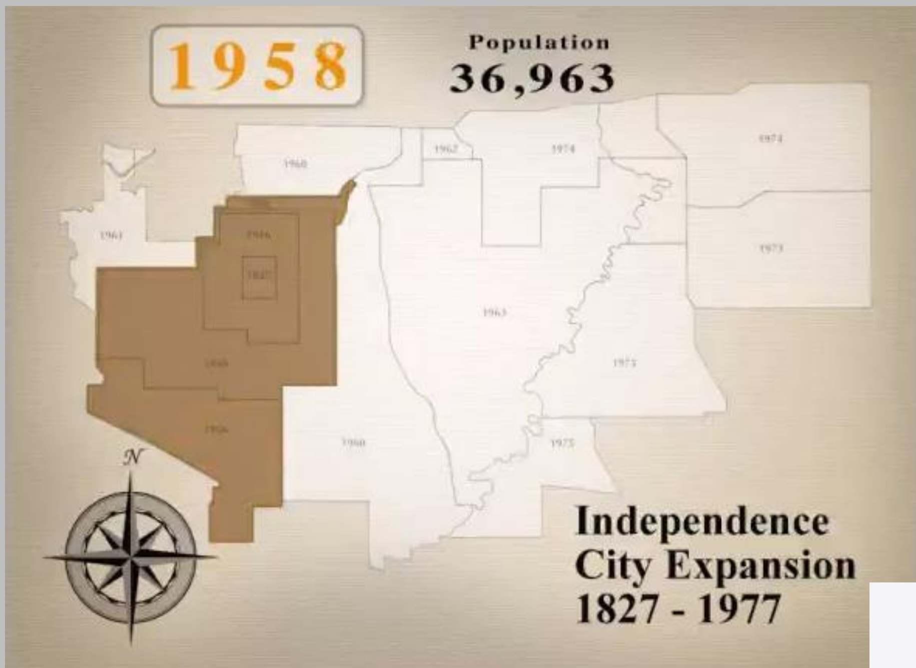
Voters approve municipal electric utility by a vote of 844 to 565 – two votes more than required two-thirds margin

History of Independence Power & Light

1931

Replacement plant at Dodgion St. constructed.

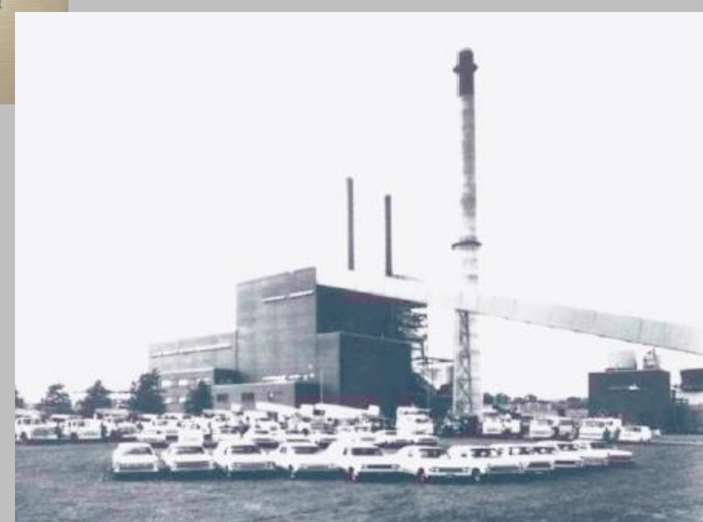
History of Independence Power & Light



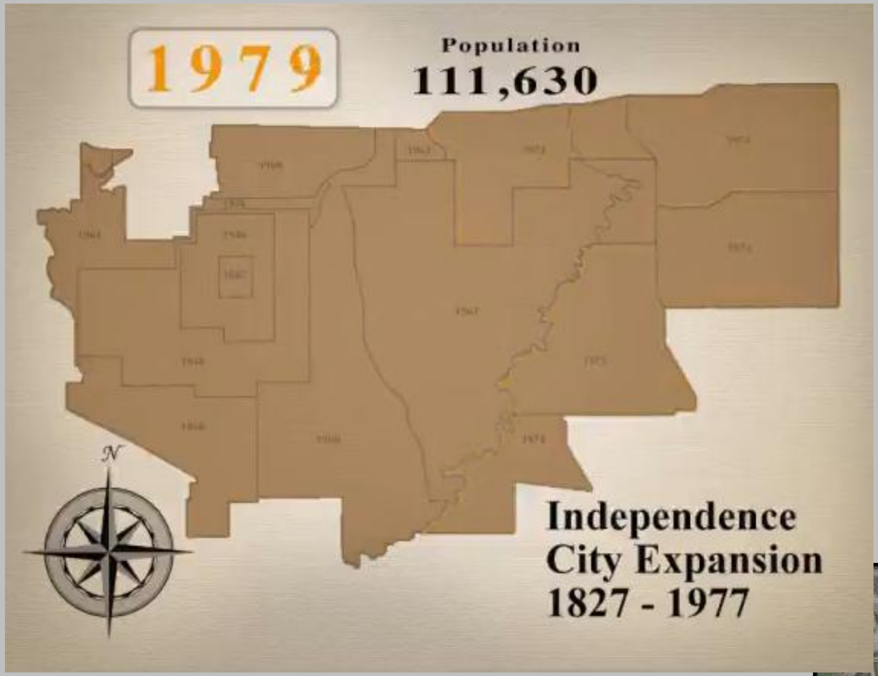
1958

City annexation creates demand for additional electrical power

Blue Valley plant would meet Independence's base power needs for 40 years



History of Independence Power & Light



1979

IP&L reaches agreement to purchase Missouri City from a rural electrical cooperative

Missouri City plant initially constructed in 1952

History of Independence Power & Light

1984

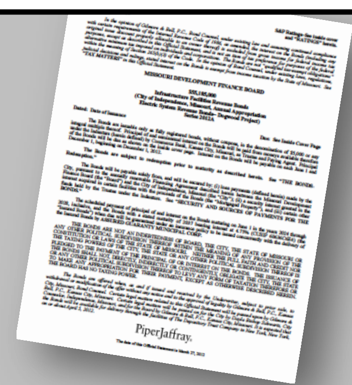
IP&L negotiates long-term contracts to meet energy needs

IP&L constructs high-voltage connections to KCP&L

IP&L Key Operating Stats

	2008	2009	2010	2011
Total Energy (MWh)	1,184,449	1,116,521	1,096,734	1,148,302
City Power Plants	452,692	296,367	134,843	120,588
City Power % of Total	38.2%	26.5%	12.3%	10.5%
Total Revenue ($000)	$106,334	$103,829	$113,518	$124,646
Total Meters	56,793	56,734	56,585	56,458
Meters (residential)	51,653	51,593	51,458	51,277

Source: Infrastructure Facilities Revenue Bonds (City of Independence, Missouri, Annual Appropriation Electric System Revenue Bonds– Dogwood Project) Series 2012A - March 27, 2012



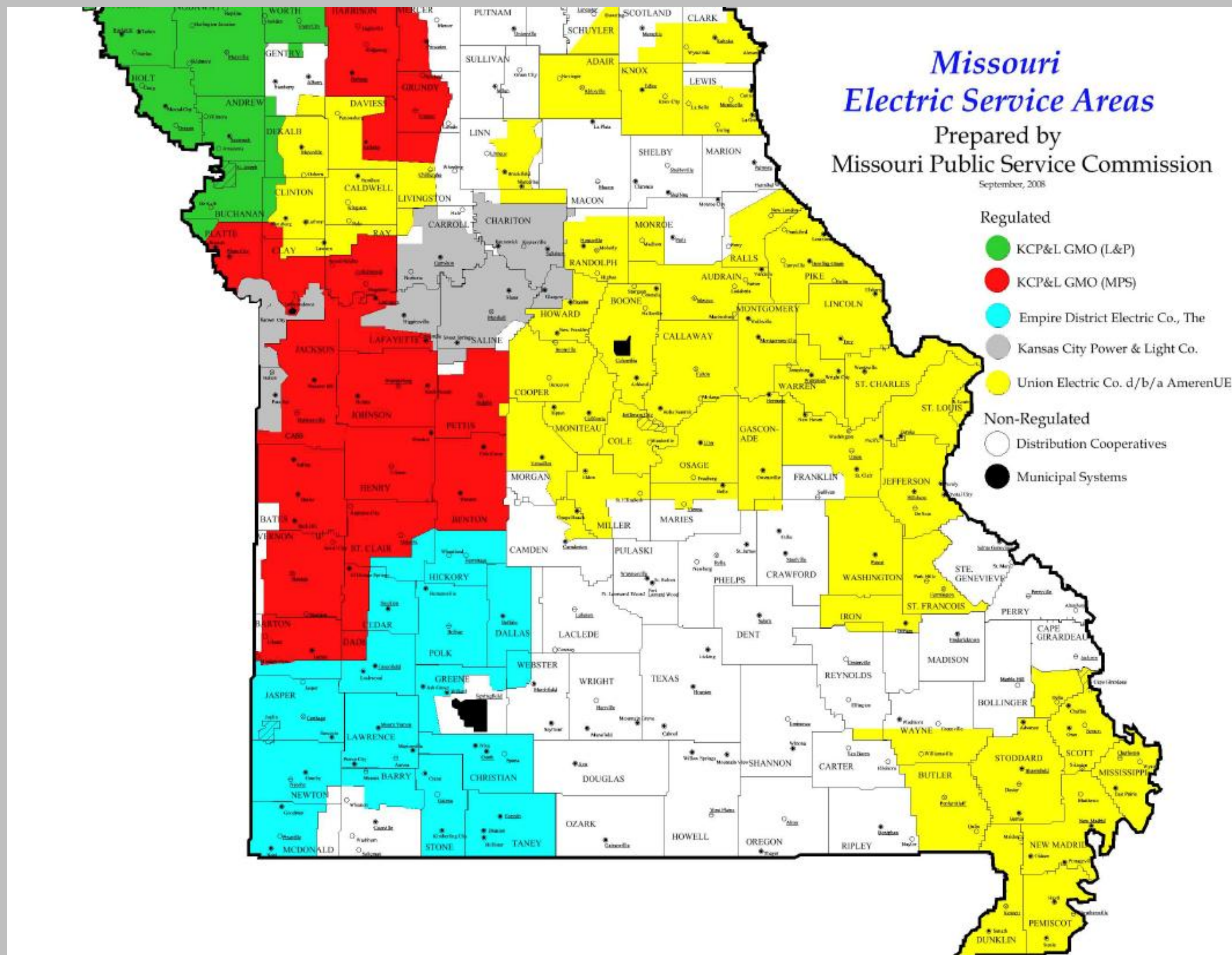
Missouri electric utilities

In general, utilities are either:

- investor-owned,
- municipally-owned, or
- cooperatives

Investor-owned utilities are subject to regulation by the Missouri Public Service Commission (rates, cold weather rules, etc.)

Missouri electric utilities



Source: Missouri Public Service Commission

IP&L Master Plan Update


City of Independence, Missouri
Power & Light Department

IPL
Independence Power & Light

2011
Master Plan Study
Update

November 2011

Sega

Sega Project No. 11-0083

The 2011 master updates earlier reports in 2007 and 2009.

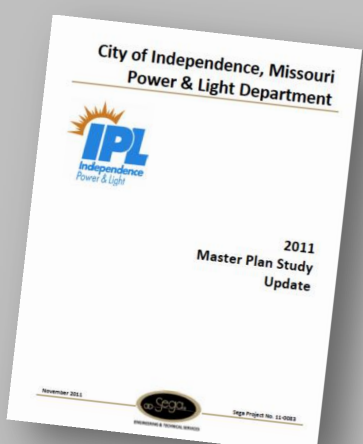
2011

IP&L commissions a master plan. The plan outlines energy issues and options including three significant developments:

- Cancellation or delay of over 100 coal-fired projects
- Declining natural gas prices
- Pending and prospective environmental requirements

Burning coal will be expensive

Master plan projects $105 million for Missouri City and Blue Valley to continue to burn coal.
(based on 2011 dollars)


City of Independence, Missouri
Power & Light Department

IPL
Independence
Power & Light

2011
Master Plan Study
Update

Potential costs to upgrade plants to meet EPA requirements

$27.1 million

+

$78.4 million

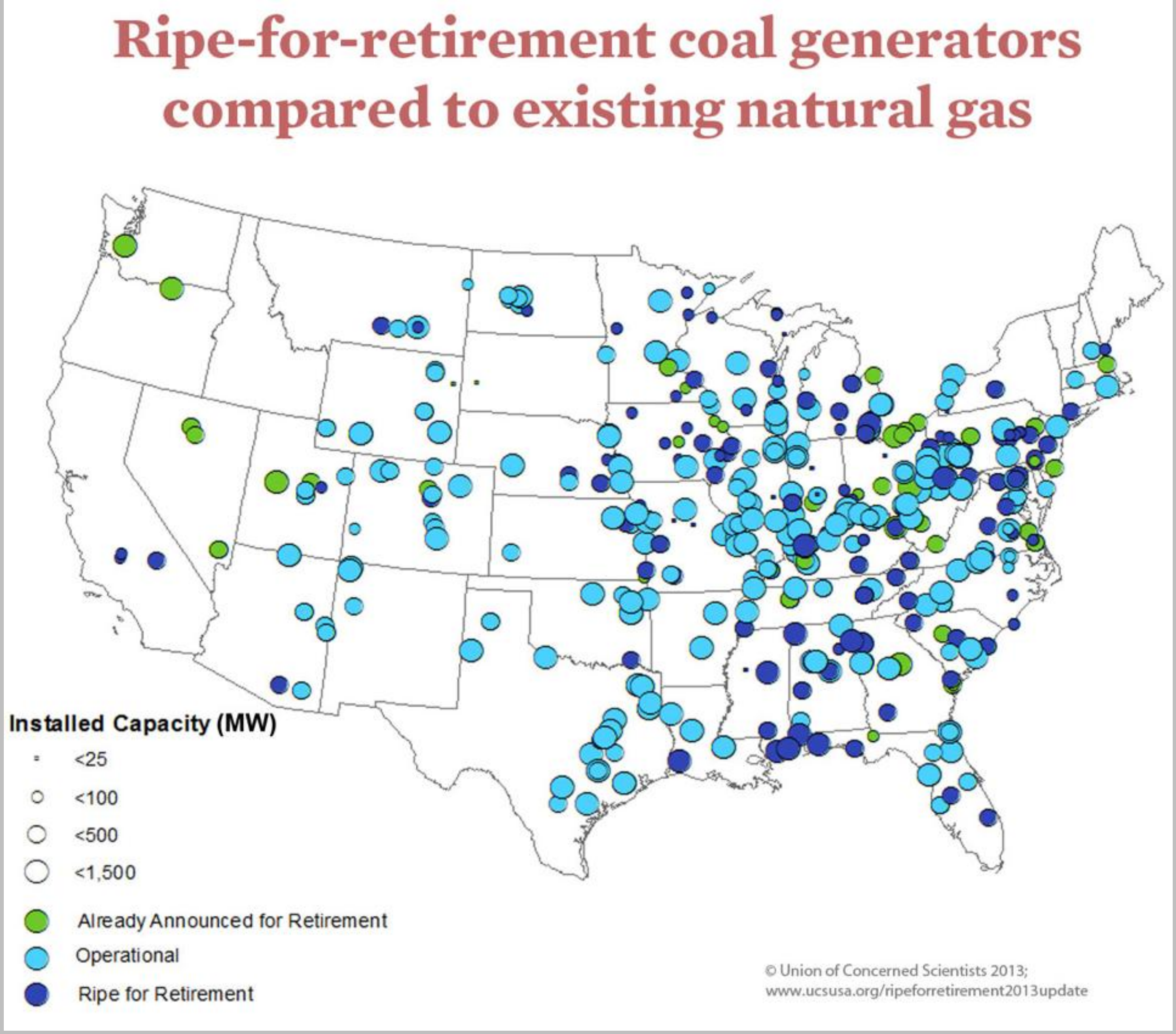
=

$105.5 million

Ripe for Replacement

A national report (December 2013) says as many as 329 coal-fired power generators are no longer economically competitive to operate.

Many **older, dirtier**, and underutilized coal units simply **cannot compete** with natural gas or wind power.



IP&L owns two of the plants

Coal Generators Identified as Ripe for Retirement (Compared to Existing NGCC)

State	Plant	Plant Owner	Generators	Capacity (MW)	Online Year
Mississippi	Henderson (MS)	Greenwood Utilities Commission	2 of 2	33	1960 - 1967
	Jack Watson	Southern Company	2 of 2	877	1968 - 1973
	R.D. Morrow	South Mississippi Electric Power Association	2 of 2	400	1978
	Red Hills	PurEnergy L.L.C.	1 of 1	514	2002
	Victor J. Daniel Jr.	Southern Company	2 of 2	1,097	1977 - 1981
Missouri	Asbury	Empire District Electric Company	1 of 2	213	1970
	Blue Valley	Independence City of MO	3 of 3	115	1958 - 1965
	Columbia, MO	Columbia City of Missouri	2 of 2	39	1957 - 1965
	James River Power Station	City Utilities of Springfield	5 of 5	253	1957 - 1970
	John Twitty Energy Center (Southwest Power)	City Utilities of Springfield	1 of 2	194	1976
	Lake Road	Great Plains Energy Inc.	1 of 4	90	1966
	Marshall, MO	Marshall City of MO	1 of 2	17	1967
	Meramec	Ameren Corporation	3 of 4	564	1953 - 1959
	Missouri City	Independence City of MO	2 of 2	46	1954
	Montrose	Great Plains Energy Inc.	3 of 3	564	1958 - 1964
Montana	Colstrip Energy LP	Colstrip Energy Limited Partnership	1 of 1	46	1990
	J.E. Corette Plant	PPL Corporation	1 of 1	173	1968
Nebraska	Lon Wright	Fremont City of	3 of 3	130	1957 - 1977
	North Omaha	Omaha Public Power District	5 of 5	645	1954 - 1968
	Platte	Grand Island City of	1 of 1	110	1982
	Sheldon	Nebraska Public Power District	2 of 2	229	1961 - 1965
	Whelan Energy Center	Multi-Owned	1 of 2	76	1981
New Hampshire	Merrimack	Northeast Utilities	1 of 2	114	1960
	Schiller Coal	Northeast Utilities	3 of 3	150	1952 - 1957
New Jersey	Chambers Cogeneration	Multi-Owned	1 of 1	285	1994
	Logan	Multi-Owned	1 of 1	242	1994
	Mercer	Public Service Enterprise Group Incorporated	2 of 2	653	1960 - 1961
New York	Cayuga ST	Upstate New York Power Producers Inc.	1 of 2	167	1955
	Samuel A Carlson (Jamestown)	Jamestown Board of Public Utilities	1 of 2	25	1968

[Union of Concerned Scientists
Ripe for Retirement 2013 Update, Dec. 2013
For more information, see: www.ucsusa.org/ripeforretirement2013update
Page 4

Source: Union of Concerned Scientists

Both Missouri City and Blue Valley plants make the list as **"ripe for retirement"** and should be considered for closure.

Listed are both generators at **Missouri City** (46MW capacity) and all three generators at **Blue Valley** (115 MW capacity)

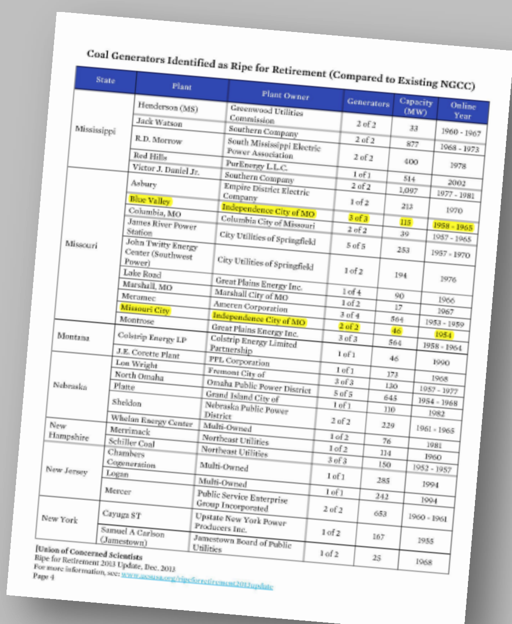
Two plants owned by Board of Public Utilities – Nearman Creek and Quindaro – also make the list.

Missouri has 10 plants; Kansas has 4 plants.

IP&L Coal Plants are Old

Missouri City and **Blue Valley** are among the oldest plants in the region and also nationally.

1955



Coal Generators Identified as Ripe for Retirement (Compared to Existing NGCC)

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Nebraska	Lon Wright	Fremont City of	3 of 3	130	1957 - 1977
	North Omaha	Omaha Public Power District	5 of 5	645	1954 - 1968
	Platte	Grand Island City of	1 of 1	110	1982
	Sheldon	Nebraska Public Power District	2 of 2	229	1961 - 1965
	Whelan Energy Center	Multi-Owned	1 of 2	76	1981
New Hampshire	Merrimack	Northeast Utilities	1 of 2	114	1960
	Schiller Coal	Northeast Utilities	3 of 3	150	1952 - 1957
New Jersey	Chambers Cogeneration	Multi-Owned	1 of 1	285	1994
	Logan	Multi-Owned	1 of 1	242	1994
	Mercer	Public Service Enterprise Group Incorporated	2 of 2	653	1960 - 1961
New York	Cayuga ST	Upstate New York Power Producers Inc.	1 of 2	167	1955
	Samuel A Carlson (Jamestown)	Jamestown Board of Public Utilities	1 of 2	25	1968

[Union of Concerned Scientists
Ripe for Retirement 2013 Update, Dec. 2013
For more information, see: www.ucsusa.org/ripeforretirement2013update
Page 4

1958

1965

Master plan recommendations

Table ES-1
Recommended Generating Unit Replacement Schedule

Units	End of Calendar Year
Missouri City Units 1 and 2 (1)	2015
Blue Valley Units 1, 2, and 3	2016
Combustion Turbines J-1 and J-2	2018
Combustion Turbines I-3 and I-4	2023
Combustion Turbines H-5 and H-6	2024

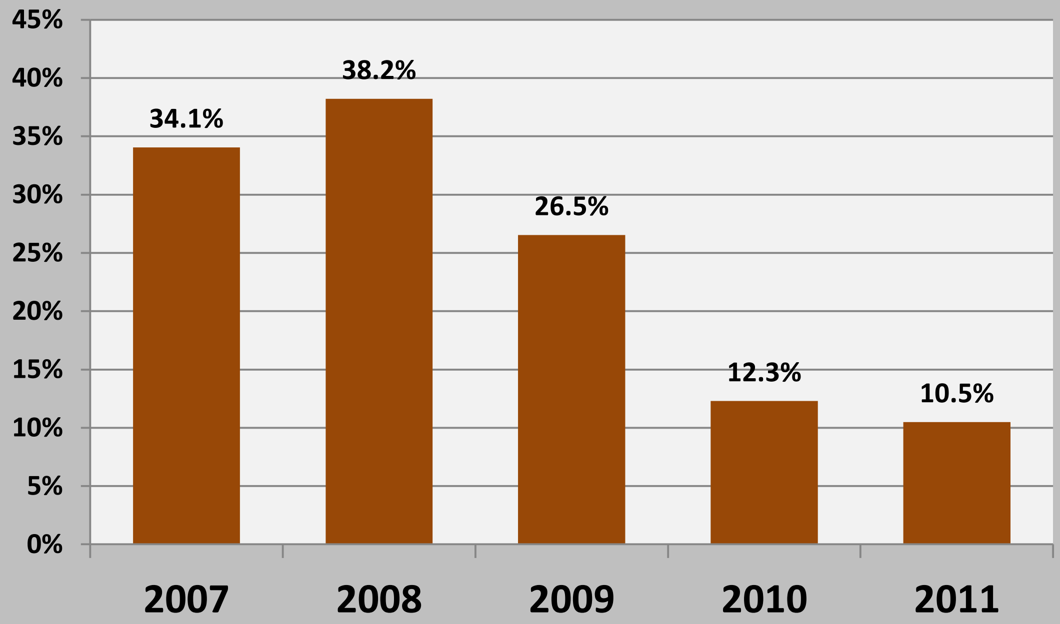
(1) April 30, 2015

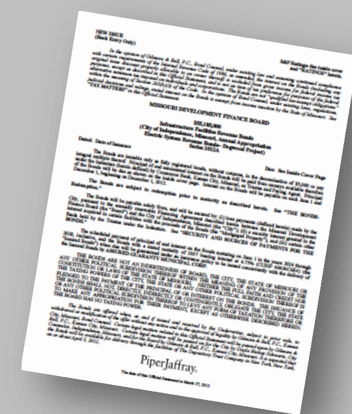
The IP&L 2011 master plan recommends replacing **Missouri City** and **Blue Valley**.


City of Independence, Missouri
Power & Light Department
2011
Master Plan Study
Update

City-owned plants generate less

The two city-owned plant – **Missouri City** and **Blue Valley** – play an increasingly smaller role in meeting the city's overall energy needs and used to meet peak demand.





Source: Infrastructure Facilities Revenue Bonds (City of Independence, Missouri, Annual Appropriation Electric System Revenue Bonds– Dogwood Project) Series 2012A - March 27, 2012

Southwest Power Pool

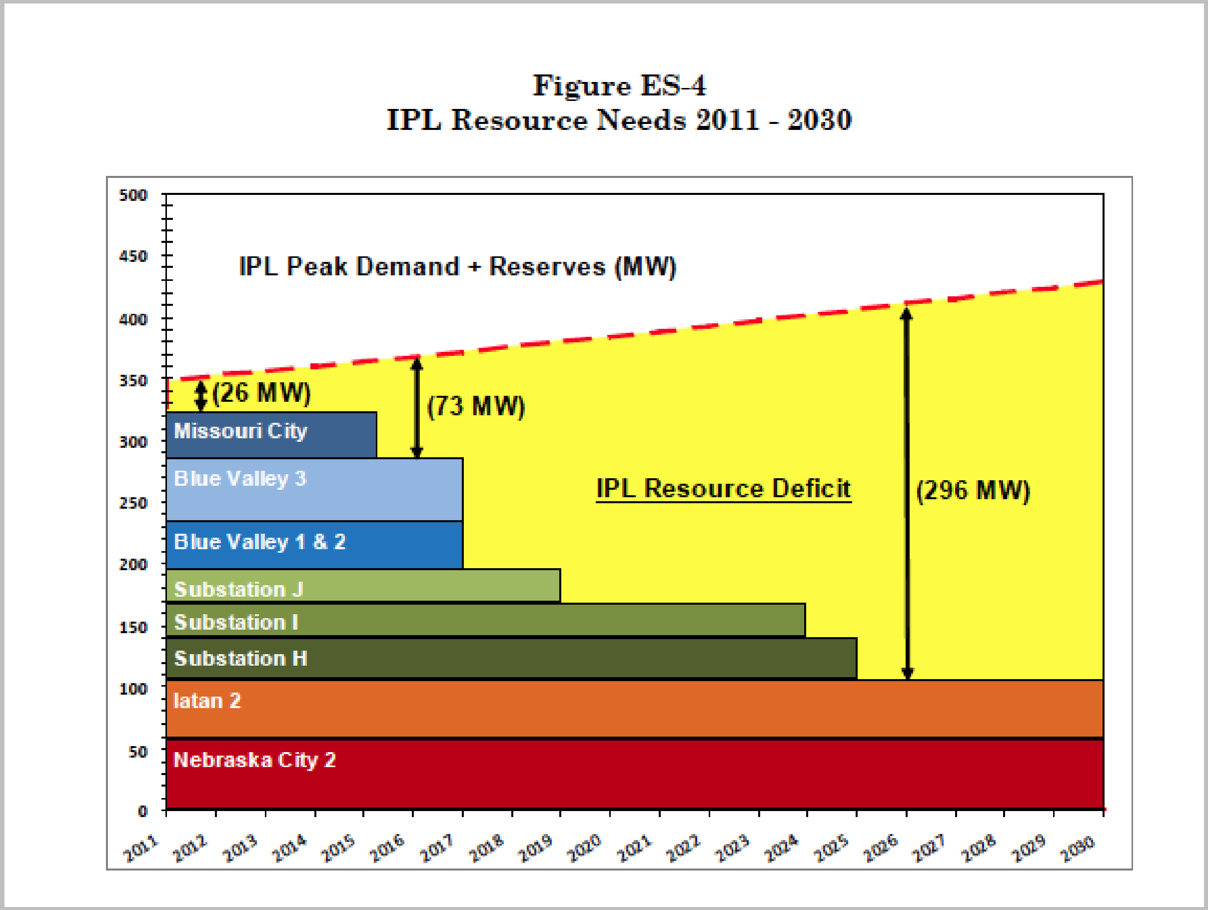
Utilities participate in regional power pools where they can buy and sell power to each other

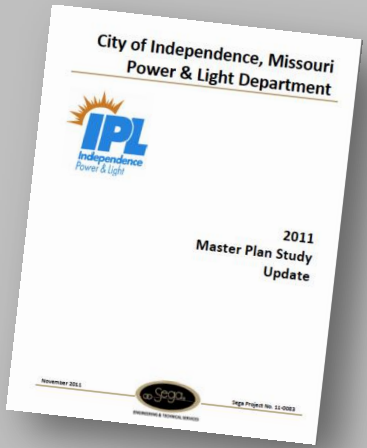
IP&L participates in the **Southwest Power Pool** – a six-state regional pool – which offers to opportunities to purchase power at lower costs or sell excess capacity.

The city council (on Jan. 6) approved a new SPP agreement allowing for purchases on a "**day-ahead basis** as well as on a **real-time basis**" offering new opportunities to hold down rates.

Master plan recommendations

If Missouri City and Blue Valley are retired, as recommended, it will create need for additional energy from other sources

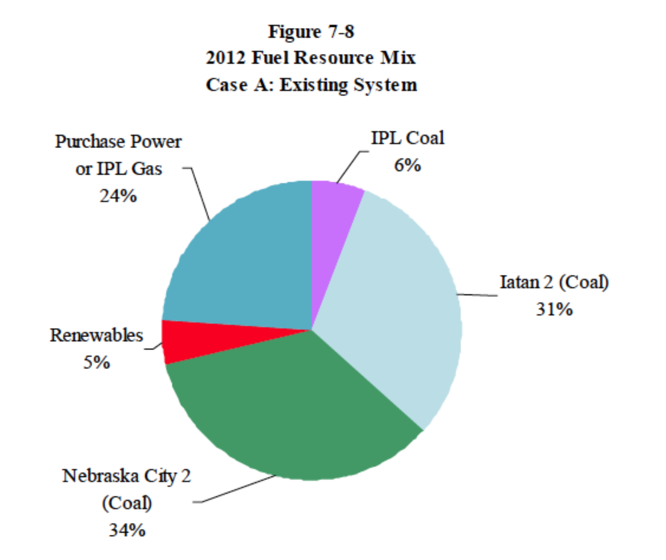




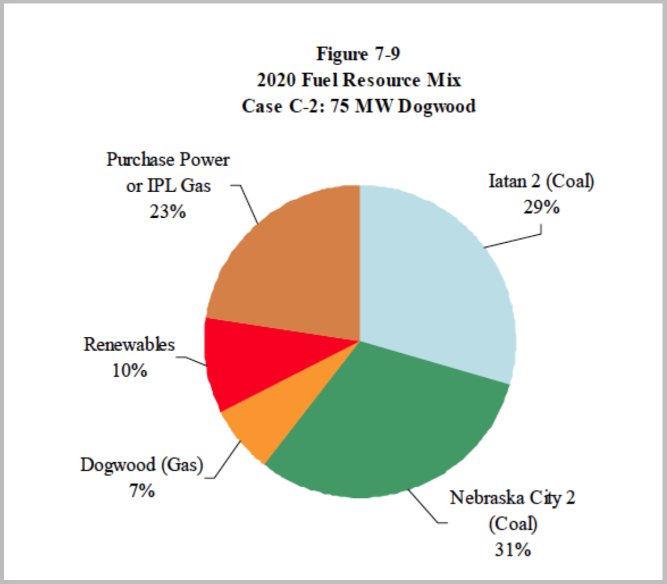
Energy Alternatives

The Master Plan encourages IP&L to increase energy generated from renewables from 5% to 10% by 2020.

Currently IP&L obtains 5% of its electricity from renewables by purchasing 15 MW from Smoky Hills Wind Farm in Kansas.

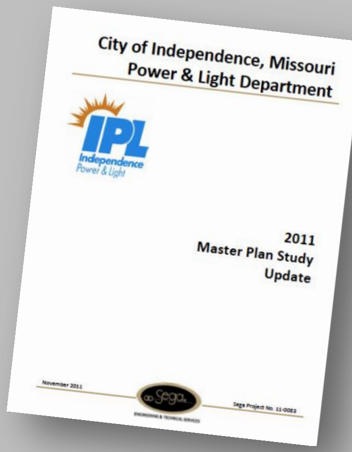


Smoky Hills Wind Farm – Lincoln and Ellsworth counties in Kansas



Master Plan Alternatives

The Master Plan examined three basic options to meet future energy needs – buy on the open market, build new plant or purchase energy from the Dogwood Energy Center, a 650 MW natural gas-fired combined cycle generating plant in Pleasant Hill, Mo.

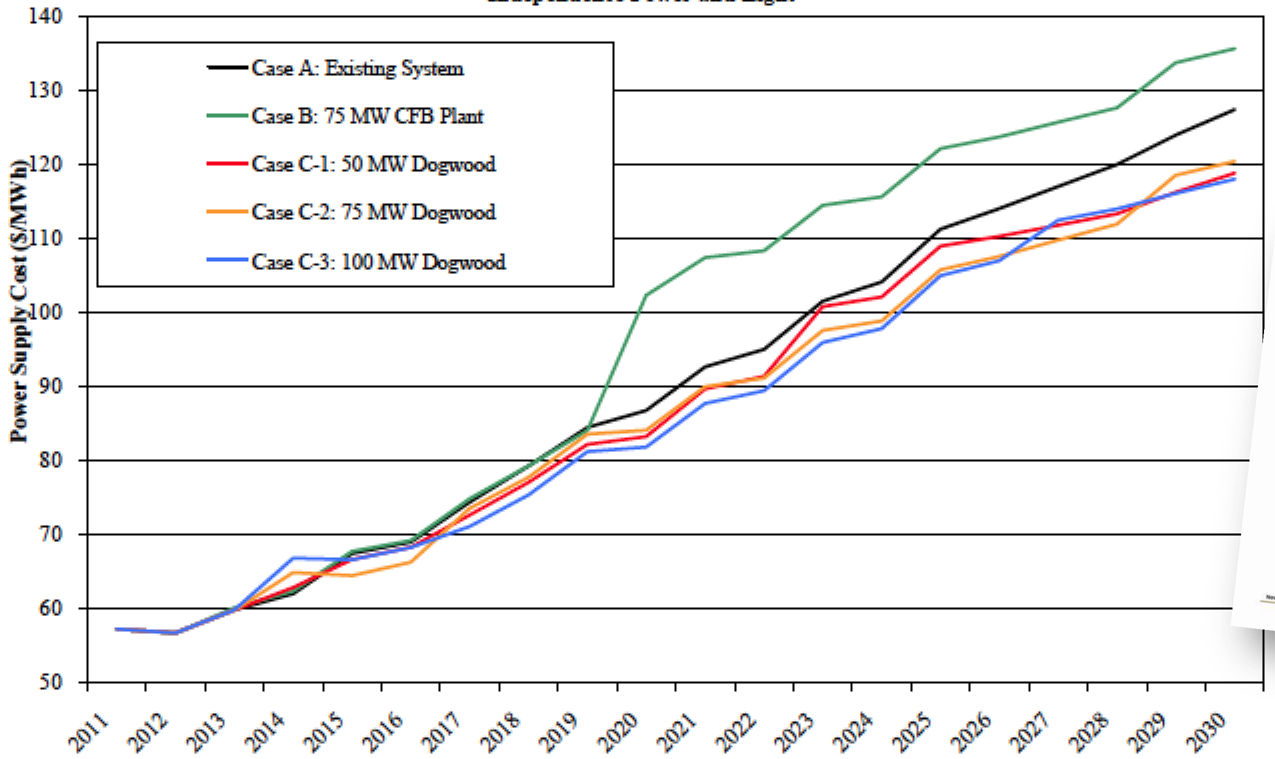

City of Independence, Missouri
Power & Light Department

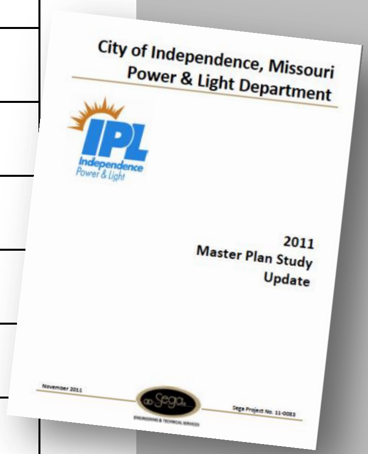
2011
Master Plan Study
Update

Case	Option	Cost (2012-2030) ($000,000)
A	*Buy power needed on the open market*	**$1,487**
B	*Construct a new 180 MW coal-fired plant*	**$1,596**
C-1	*Buy 50 MW from Dogwood Energy Center*	**$1,455**
C-2	*Buy 75 MW from Dogwood Energy Center*	**$1,447**
C-3	*Buy 100 MW from Dogwood Energy Center*	**$1,438**

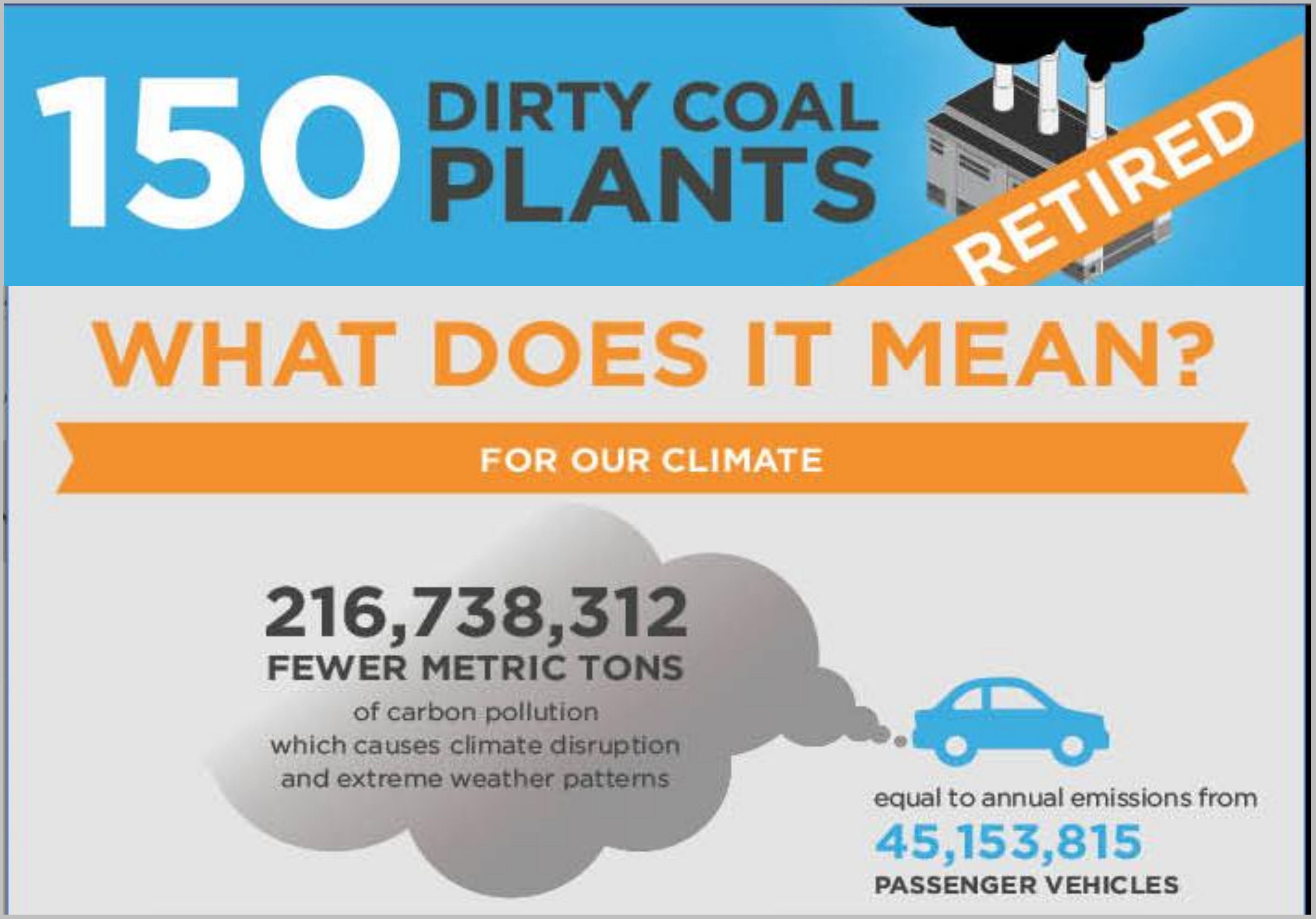
Master Plan Alternatives: Five Options

Figure 7-1
Annual Power Supply Cost Comparison
Independence Power and Light



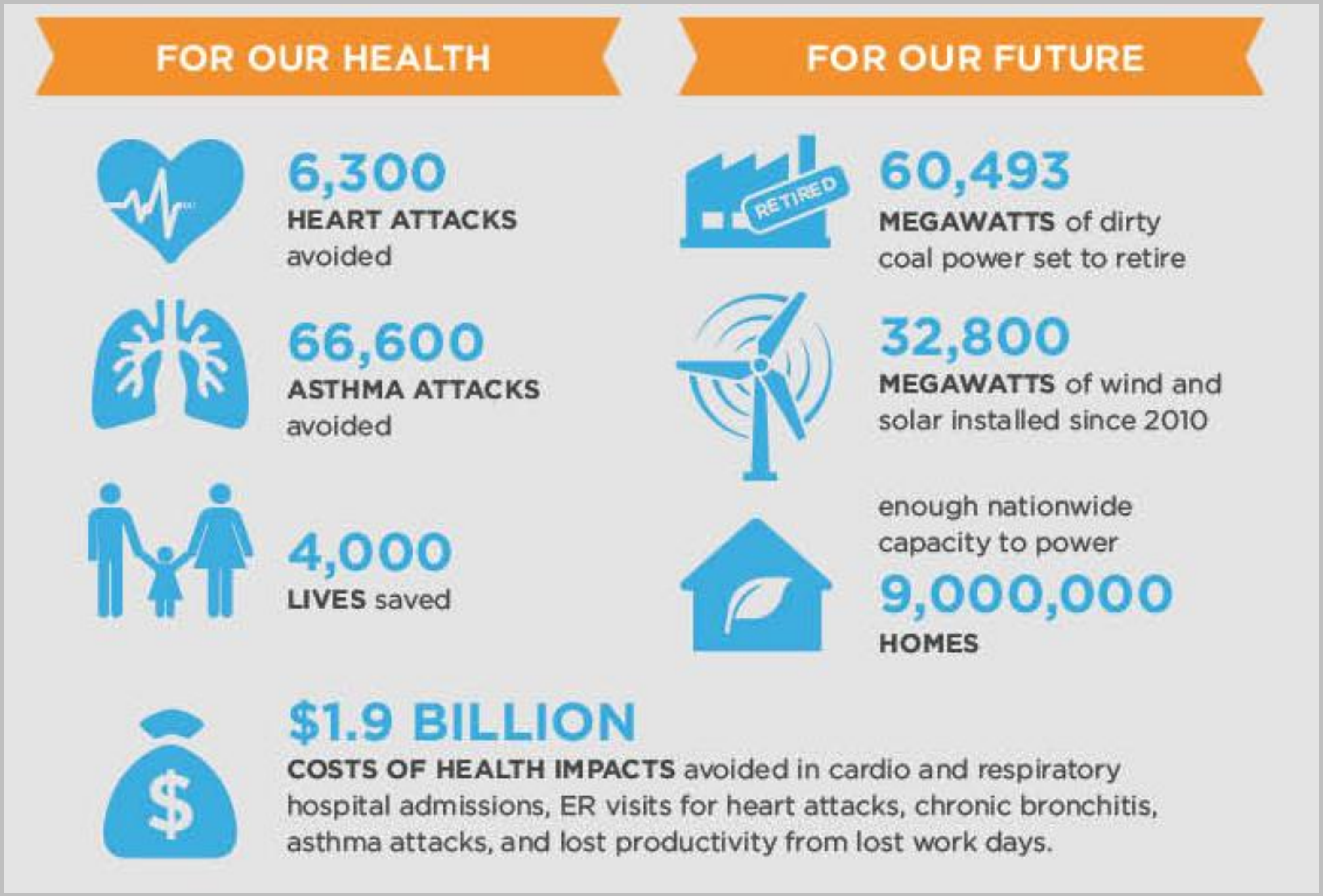


U.S. coal plants are being retired



Source: Sierra Club

Other benefits of fewer coal plants



Source: Sierra Club

IP&L rates are increasing

In recent years, IP&L rates are higher – on average – when compared to **KCP&L** (investor-owned) or **Board of Public Utilities** (Kansas City, Ks. Municipal owned) based on city budget data.

This followed a series of IP&L based rate increases approved in November 2008 based on a five-year cost-of-service study.

IP&L Rate Increases	
Date	Increase
Jan. 1, 2009	**9%**
July 1, 2009	**5%**
July 1, 2010	**5%**
July 1, 2011	**5%**
July 1, 2012	**5%**

Source: Infrastructure Facilities Revenue Bonds (City of Independence, Missouri, Annual Appropriation Electric System Revenue Bonds– Dogwood Project) Series 2012A - March 27, 2012

IP&L rates are higher

In recent years, IP&L rates are higher – on average – when compared to **KCP&L** (investor-owned) or **Board of Public Utilities** (Kansas City, Ks. Municipal owned) based on city budget data.

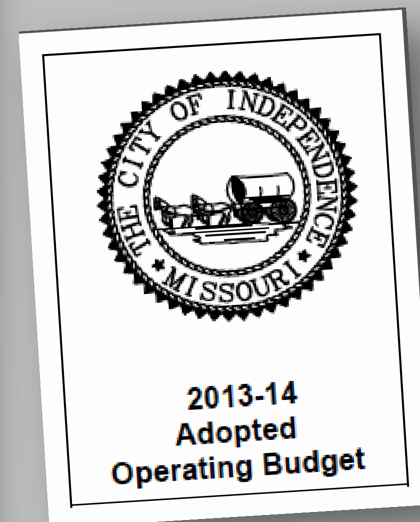
2013-14

Comparison of Average Monthly Electric Bills for Electric Service Customers
Independence Power & Light Versus
Kansas City Power & Light Company, Kansas City Power & Light Company - Greater Missouri Operations, and Board of Public Utilities-Kansas City, KS

Type of Service and Customer Monthly Usage	Independence Power & Light (IPL) Rate Code	Independence Power & Light (IPL) Average Monthly Bill Amount	Kansas City Power & Light Co. (KCPL) Rate Code	Kansas City Power & Light Co. (KCPL) Average Monthly Bill Amount	Kansas City Power & Light Co. (KCPL) Percent Higher or (Lower) than IPL	Kansas City Power & Light Co. - GMO (KCPL-GMO) Rate Code	Kansas City Power & Light Co. - GMO (KCPL-GMO) Average Monthly Bill Amount	Kansas City Power & Light Co. - GMO (KCPL-GMO) Percent Higher or (Lower) than IPL	Board of Public Utilities-Kansas City (BPU-KC) Rate Code	Board of Public Utilities-Kansas City (BPU-KC) Average Monthly Bill Amount	Board of Public Utilities-Kansas City (BPU-KC) Percent Higher or (Lower) than IPL
Standard Residential Service											
Average Customer Usage (Mar 12 - Feb 13) Average Monthly KWH = 831	RS-3	118.85	R	113.66	-4.37%	M0860	118.45	-0.34%	100	110.06	-7.40%
Low User Average Monthly KWH = 400	RS-3	59.73	R	60.64	1.52%	M0860	63.25	5.89%	100	61.51	2.98%
High User Average Monthly KWH = 1,000	RS-3	141.63	R	131.44	-7.19%	M0860	138.00	-2.56%	100	129.56	-8.52%
Small General Service (Commercial)											
Average Customer Usage (Mar 12 - Feb 13) Average Monthly KWH = 652 (6 KW Demand)	GS-1	112.51	SGS	108.73	-3.36%	M0710	102.37	-9.01%	200 ND	128.28	14.02%
Low User Average Monthly KWH = 400 (5 KW Demand)	GS-1	72.80	SGS	73.74	1.29%	M0710	70.13	-3.67%	200 ND	91.50	25.69%
High User Average Monthly KWH = 1,000 (9 KW Demand)	GS-1	166.60	SGS	157.21	-5.64%	M0710	147.01	-11.76%	200 ND	179.24	7.59%
Large General Service (Commercial and Industrial)											
Average Customer Usage (Mar 12 - Feb 13) Ave. Monthly KWH = 16,366 (50% Load Factor)	LGS-1	2,097.90	MGS	1,632.60	-22.18%	M0711	1,779.81	-15.16%	200	1,939.17	-7.57%
Low User Ave. Monthly KWH = 5,000 (40% Load Factor)	LGS-1	684.75	SGS	578.65	-15.49%	M0711	592.18	-13.52%	200 ND	765.50	11.79%
High User Ave. Monthly KWH = 58,333 (50% Load Factor)	LGS-1	7,262.99	MGS	5,732.47	-21.07%	M0720	5,439.10	-25.11%	200	6,339.59	-12.71%
Industrial - Primary Voltage Delivered Service - 13,000 Volts											
Metered Demand - 500 KW Monthly KWH - 150,000 KWH	LP-2	17,047.20	MGS	14,502.22	-14.93%	M0735	12,372.43	-27.42%	250	18,323.59	7.49%
Metered Demand - 500 KW Monthly KWH - 250,000 KWH	LP-2	25,294.50	LGS	19,179.59	-24.17%	M0735	17,498.10	-30.82%	250	23,615.06	-6.64%
Metered Demand - 1,200 KW Monthly KWH - 360,000 KWH	LP-2	39,984.28	LGS	35,856.13	-10.32%	M0735	29,418.18	-26.43%	300	43,444.28	8.65%
Metered Demand - 1,200 KW Monthly KWH - 600,000 KWH	LP-2	59,777.80	LGS	46,713.85	-21.85%	M0735	41,719.81	-30.21%	300	55,932.62	-6.43%
Metered Demand - 4,000 KW Monthly KWH - 1,200,000 KWH	LP-2	124,110.60	LGS	117,304.14	-5.48%	M0735	97,601.20	-21.36%	400	127,403.21	2.65%
Metered Demand - 4,000 KW Monthly KWH - 2,000,000 KWH	LP-2	186,371.00	LGS	153,496.54	-17.64%	M0735	138,606.62	-25.63%	400	166,171.36	-10.84%

NOTES:
(a) IPL rates include Fuel Cost Adjustment of $0.020098 per KWH as based on the average of the actual monthly Fuel Cost Adjustment rates for the 12 months ending February 2013.
(b) A Gross Receipts Tax of 9.08 percent is incorporated within IPL's rates. All bill amounts shown for KCPL, KCPL-GMO, & BPU-KC include the City's Franchise Gross Receipts Tax of 9.08 percent.
(c) Fuel Cost Adjustment rate provision is not applicable for KCPL. KCPL-GMO historical FAC of $0.0029 and DSIM rate as of Mar 2013. BPU-KC historical ERC of $0.032710 and ESC schedule as of Jan 2013.
(d) No sales tax is included in the above bill amounts.
(e) Average customer usages are based on IPL's average customer usage for each month from March 2012 through February 2013.

Source: City of Independence budget



Residential rates are higher

90% of all IP&L metered customers are residential

2013-14

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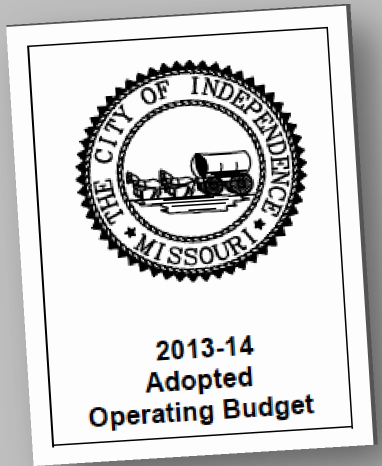
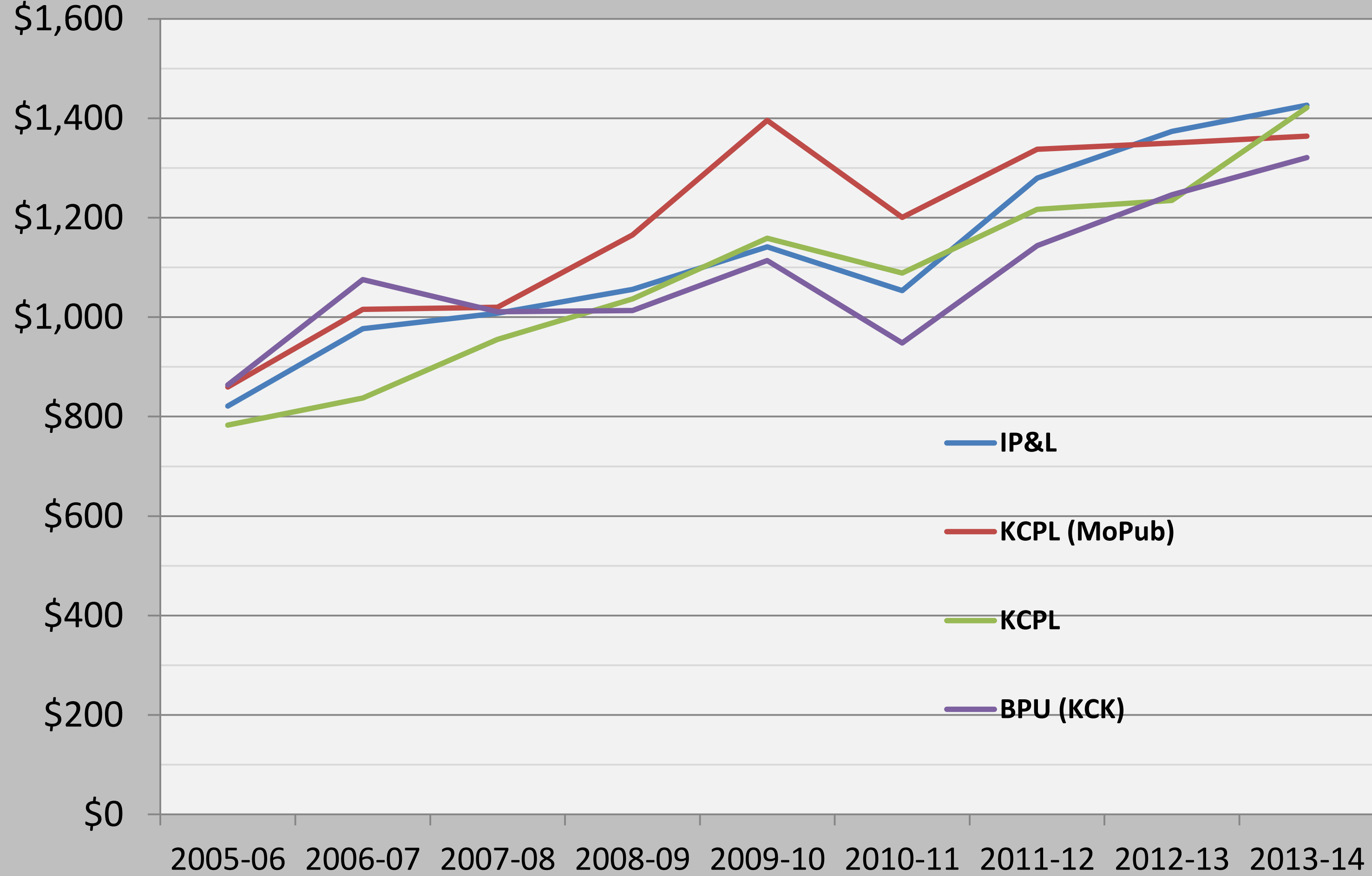


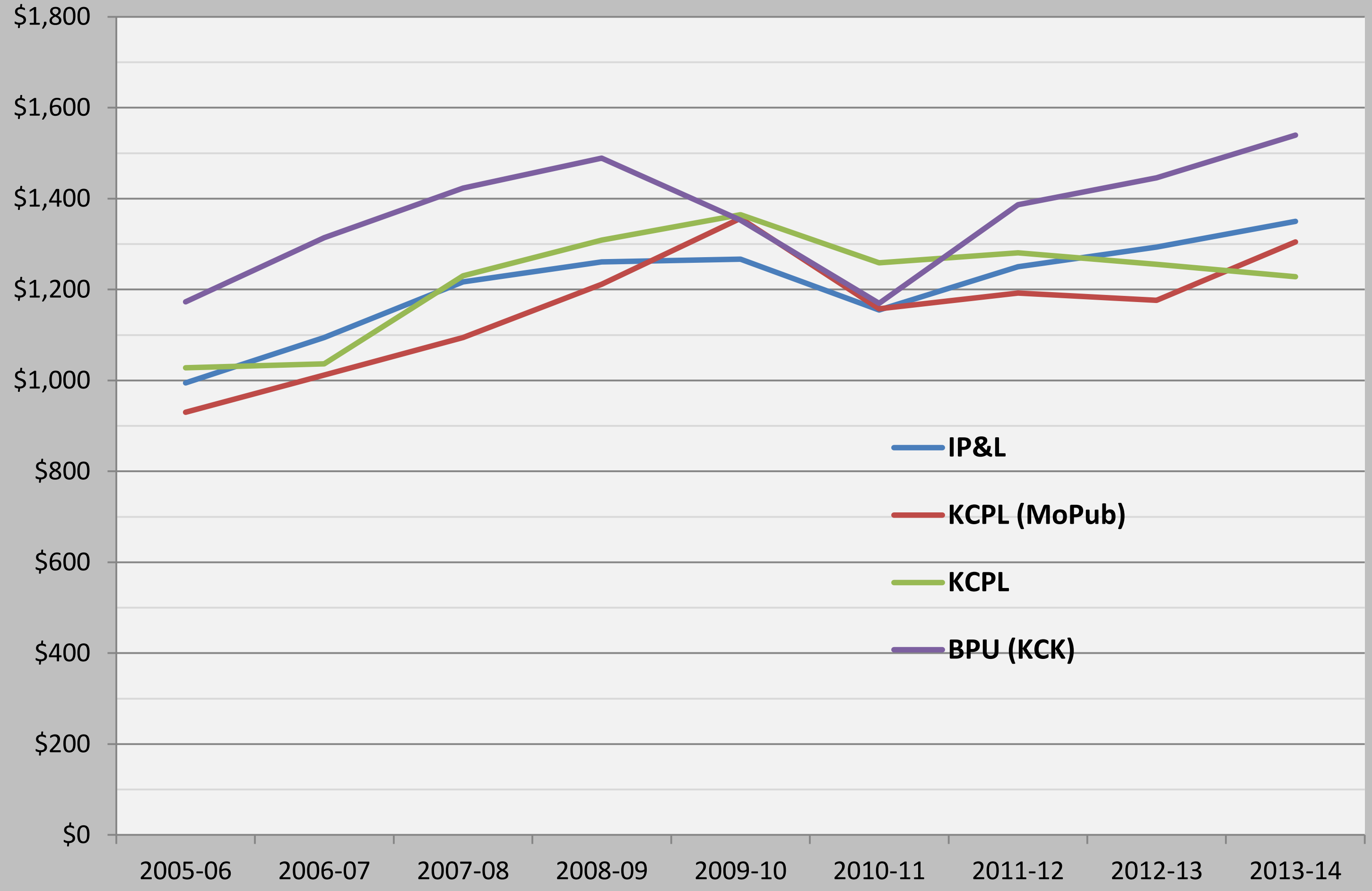
Source: City of Independence 2013-14 budget

IP&L rates: RESIDENTIAL



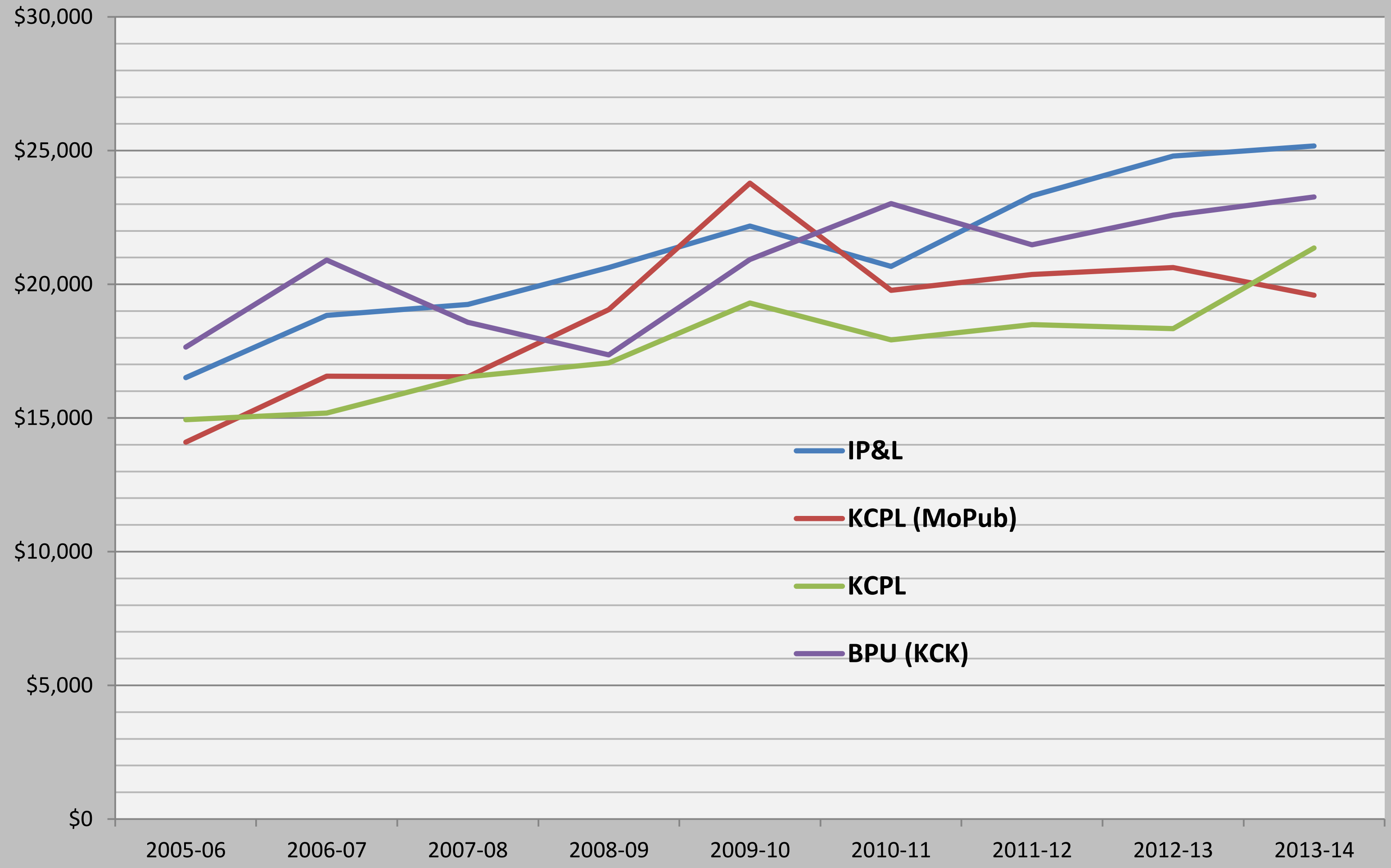
Source: City of Independence Annual Budgets 2005-2013

IP&L rates: COMMERCIAL



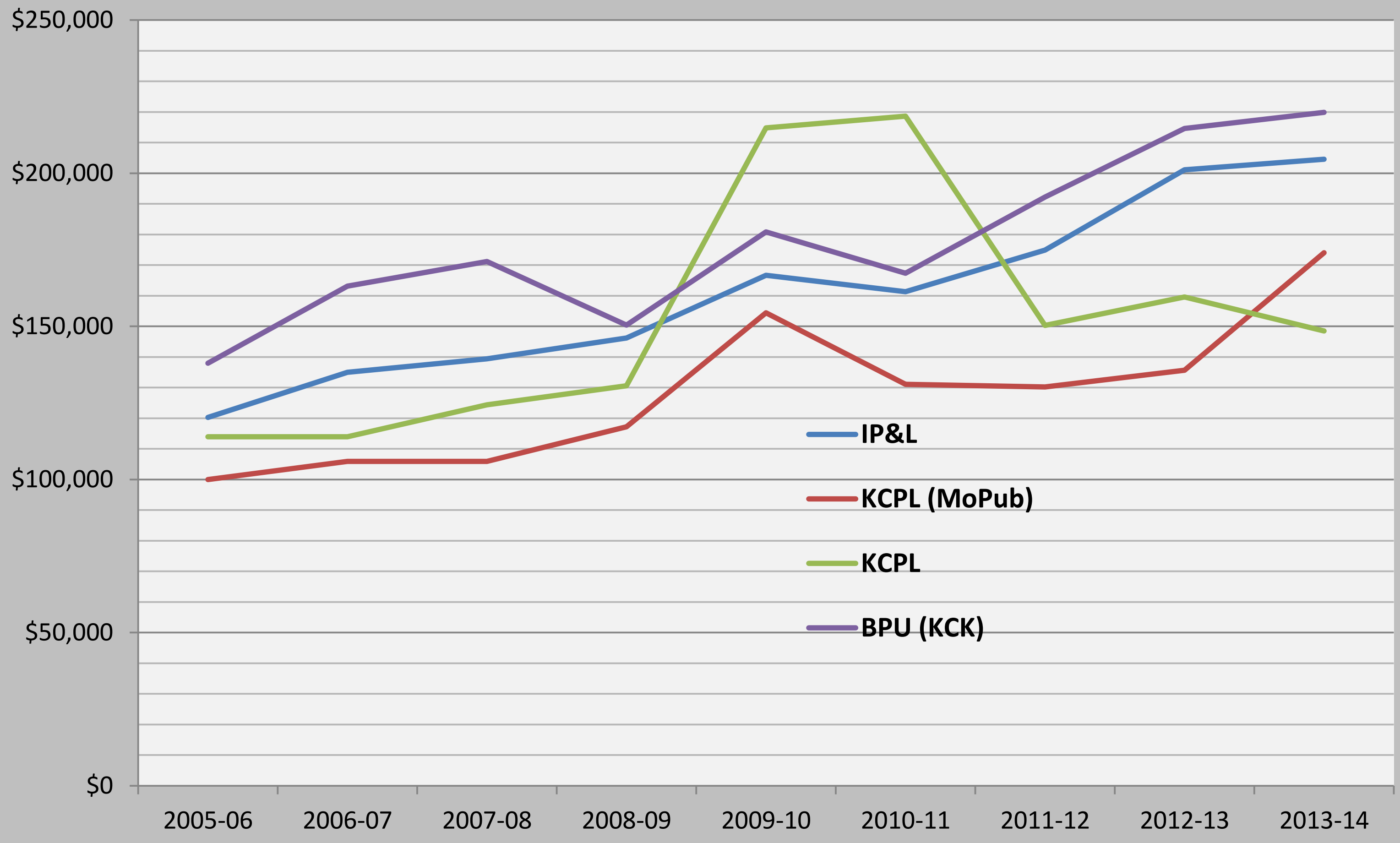
Source: City of Independence Annual Budgets 2005-2013

IP&L rates: INDUSTRIAL



Source: City of Independence Annual Budgets 2005-2013

IP&L rates: LARGE INDUSTRIAL



Source: City of Independence Annual Budgets 2005-2013

Summary

The city of Independence faces several significant options regarding energy.

Choices made (or not made) will affect rate payers and how competitive the city is economically.

For more information or a copy of this presentation visit

www.indyenergy.org

Panelists

Karl Zobrist

Attorney practices utility law and former chair of the Missouri Public Service Commission

Andy Knott

Former state utility regulator and now with Beyond Coal – Missouri (Sierra Club)