

2016 Sustainability Update



Our Guiding Principles

Our Higher Purpose...

Improving life in the communities we serve

Our Mission...

The mission of KCP&L, as a leading and trusted energy partner, is to provide safe, reliable power and customer-focused energy solutions that create stakeholder value through operational excellence, innovation and a diverse, engaged workforce.



KCP&L believes in providing cleaner, more sustainable energy to customers. Since 2005, we have saved nearly 320 megawatts through energy-efficiency initiatives, enough to meet the demand of 60,000 homes.



Aug. 2005

Fourteen Comprehensive Energy Plan Pilot Programs are offered to customers, making KCP&L the first utility in Missouri or Kansas to make a strong commitment to energy efficiency.

Oct. 2006

Spearville Wind Generation Facility, the first Kansas wind facility constructed and owned by an investor-owned utility, becomes operational. The facility now produces 148.5 MW of electricity.



July 2009

The Missouri Energy Efficiency Investment Act (MEEIA) is signed into law. KCP&L leads efforts to advocate its passage.

Aug. 2011

Iatan 2, one of the cleanest, most efficient coal power plants in the country, wins Power Plant of the Year Award from *POWER* magazine.



Sept. 2011

Construction begins on environmental upgrades at the La Cygne power plant, significantly reducing emissions on the 1,400 MW of electricity produced.

Dec. 2011

KCP&L is the first utility to file under MEEIA. Fifteen energy-efficiency programs are offered to KCP&L's Missouri customers.



Jan. 2012

KCP&L and the Kansas City Royals partner to install the largest in-stadium solar array in Major League Baseball at Kauffman Stadium.

Jan. 2014

KCP&L files for expansion of MEEIA programs to all KCP&L Missouri customers, and announces the purchase of 400 MW of wind power in Kansas and Missouri.



April 2014

The Kansas Energy Efficiency Investment Act (KEEIA) is signed into law. KCP&L leads efforts to advocate its passage.

Jan. 2015

KCP&L announces plan to stop burning coal at three power plants.



Jan. 2015

KCP&L introduces the more than 1,000 unit KCP&L Clean Charge Network that will be installed across our service region.

Nov. 2015

KCP&L announces Missouri solar plant capable of producing 4,700 Mwh of energy annually, enough to serve about 440 homes.



April 2016

MEEIA programs renewed in Missouri and the first Kansas Energy Efficiency Investment Act (KEEIA) programs are filed in Kansas.

April 2016

KCP&L announces the purchase of 500 MW of wind in Missouri.



510-16-4138 (05/16)

Integrated Resource Plan



Integration Resource Planning

The Missouri Public Service Commission (MPSC) requires Missouri electric utilities that produce over 1 million megawatt-hours annually to develop a 20-year resource plan. The process used to develop this 20-year plan is known as Integrated Resource Planning (IRP). The fundamental objective of the resource planning process is to ensure the public is provided with safe, reliable, and efficient energy services at just and reasonable rates.

The IRP process includes developing alternative resource plans. These alternative resource plans may include:

- New generation resources (traditional and/or renewable)
- Demand-side management resources (DSM)
- Generating plant retirements
- Additional environmental controls on existing generating plants (scrubbers, bag house, etc.)

Integration Resource Planning (continued)

These alternative plans are analyzed with respect to performance measures including the 20-year net present value revenue of requirements, levelized annual average rates including maximum single-year increase in annual average rates, utility financial ratios, and other measures the utility considers appropriate. The primary criterion for selecting the “Preferred Plan” from the list of alternative plans analyzed is the minimization of net present value of revenue requirements.

Every three years, a compliance filing is submitted to the MPSC which outlines the IRP process, assumptions, analysis results and the Preferred Plan selected. For the years in which this triennial compliance filing is not required, an annual update analysis is performed to determine if the Preferred Plan from the prior IRP needs to be changed and to update interested parties if any actions that were expected to occur during the three-year window have changed.

Integration Resource Planning (continued)

The last Kansas City Power & Light Company (KCP&L) and KCP&L Greater Missouri Operations Company (GMO) triennial IRP filings occurred on April 1, 2015. The most recent annual updates were filed March 15, 2016 and the next triennial filings are scheduled to occur by April 1st, 2018.

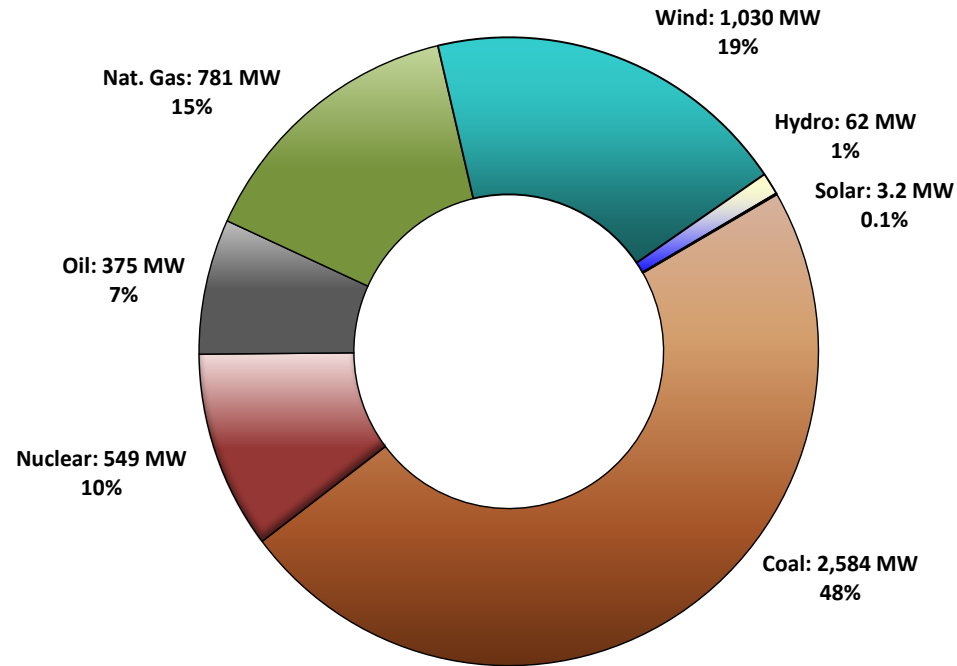
Highlights of the current IRP Preferred Plans for KCP&L and GMO are outlined below:

KCP&L –

- 2016-2025 Generation additions - 350 MW of wind (2016), 300 MW of wind (2017), 3 MW of solar (2016)
- Cease burning coal – 170 MW (2016), 340 MW (2021)
- Additional Demand-Side Management – 249 MW by 2025

Integration Resource Planning (continued)

By 2018, when all planned wind resources currently under contract are in service, the capacity makeup of KCP&L is expected to be as follows:



Note: Wind capacity is based upon nameplate

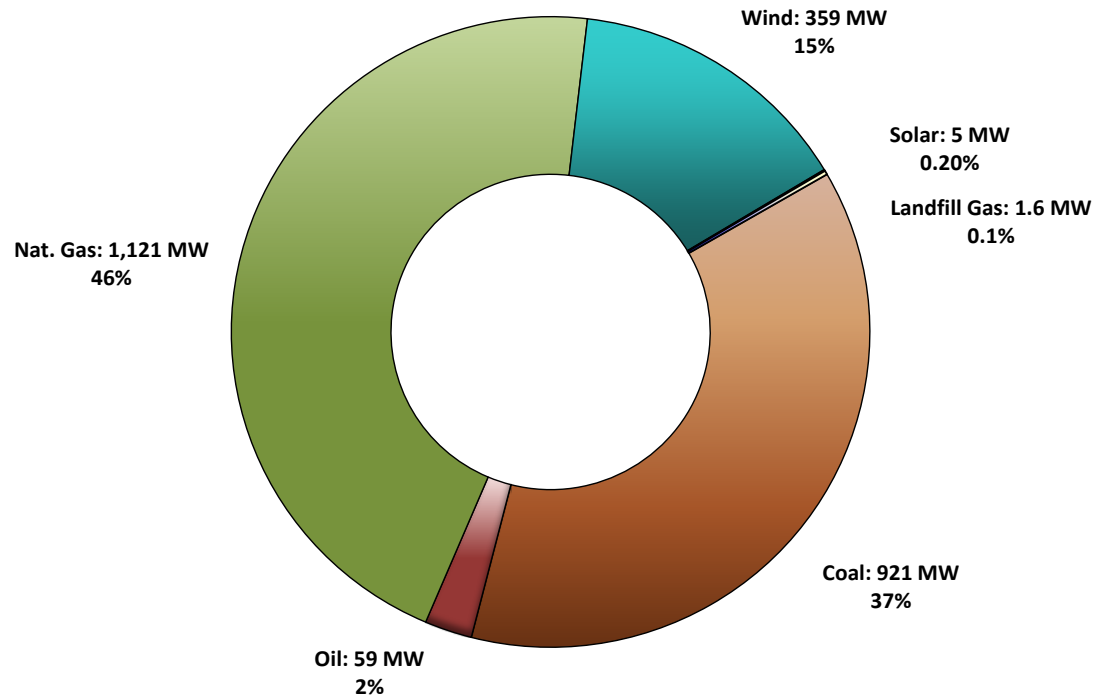
Integration Resource Planning (continued)

GMO –

- 2016-2025 Generation additions - 200 MW of wind (2017), 60 MW of wind renewal (2017), 5 MW of solar (2016)
- Cease burning coal – 96 MW (2016), 97 MW (2019)
- Additional Demand-Side Management – 445 MW by 2025

Integration Resource Planning (continued)

By 2018, when all planned wind resources currently under contract are in service, the capacity makeup of GMO is expected to be as follows:



Note: Wind capacity is based upon nameplate

Integration Resource Planning (continued)

The 2016 KCP&L IRP Annual Update can be viewed in its entirety at the Missouri Public Service Commission website:

<https://www.efis.psc.mo.gov/mpsc/>

Select Resources, Case Information, Case Filing/Submission.

Case Number: EO-2016-0232.

The 2016 GMO IRP Annual Update can be viewed in its entirety at the Missouri Public Service Commission website:

<https://www.efis.psc.mo.gov/mpsc/>

Select Resources, Case Information, Case Filing/Submission.

Case Number: EO-2016-0233.

Commitment To Renewables



A Commitment to Renewable Energy

Retail Sales (MWh)	2010	2011	2012	2013	2014	2015
KCP&L	15,446,993	15,209,611	14,911,750	14,851,378	14,919,674	14,698,066
GMO	8,339,054	8,194,746	8,080,313	8,179,781	8,195,101	7,970,618
Total GPE	23,786,047	23,404,357	22,992,063	23,031,159	23,114,775	22,668,684
Renewables (MWh)	2010	2011	2012	2013	2014	2015
Wind	553,125	757,223	1,031,583	1,641,009	1,846,943	2,022,054
Hydro	-	-	-	-	243,152	399,316
Total GPE Renewables	553,125	757,223	1,031,583	1,641,009	2,090,095	2,421,370
% of Retail Sales from Renewables	2%	3%	4%	7%	9%	11%

Water and Habitats



Water and Habitats in the Metropolitan Area

KCP&L's generation stations need for cooling water and sometimes remote locations allow the stations to develop into protected areas for wildlife. Our urban Hawthorn Generating Station supports wildlife and partners with the Missouri Department of Conservation (MDC) to allow limited archery deer hunting on the property.

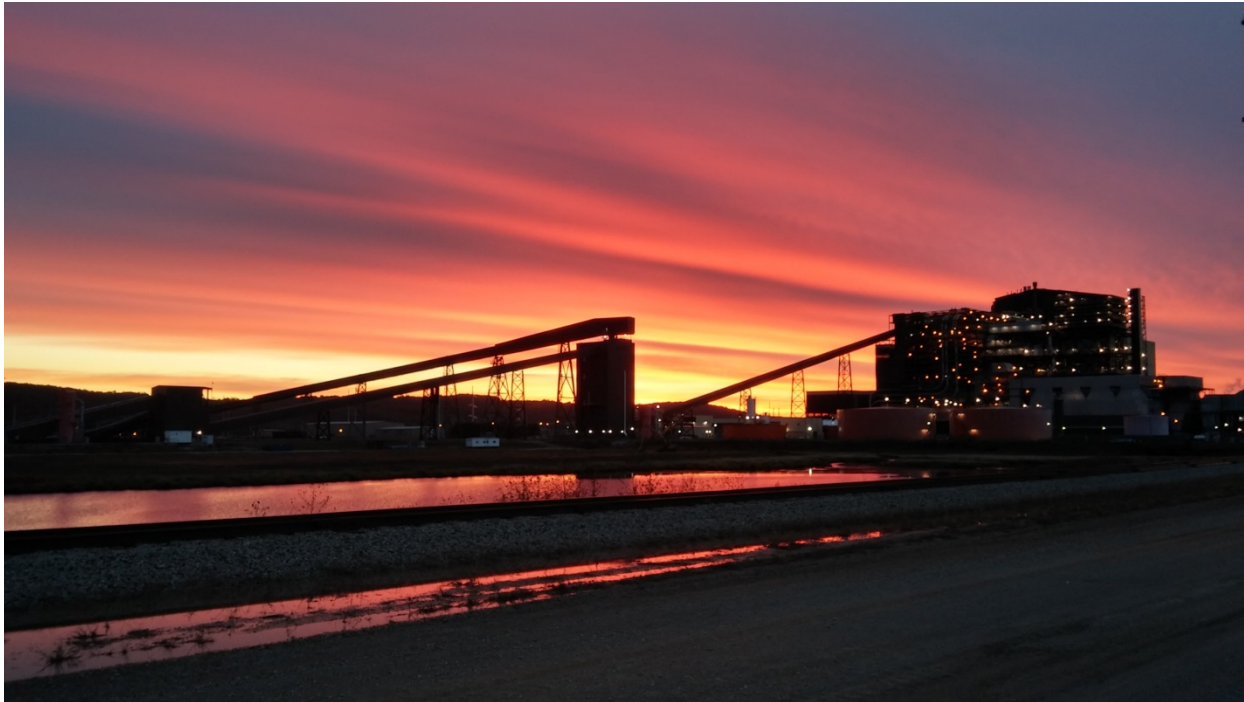
Throughout the metro area, we locate and manage nesting boxes for kestrels and North American bluebirds. One of our pump stations also provides a nesting habitat for cliff swallows.

KCP&L Prairie Wetland is a 55-acre wetland in Gardner, Kansas. That serves as an outdoor classroom, providing the opportunity to observe wetland dynamics. Popular with bird watchers, the wetlands is also used by the Kansas Department of Wildlife, Parks and Tourism for wheelchair/handicapped waterfowl hunts. Our efforts in restoring the wetland and native grasses and wildflowers earned the Wildlife Habitat Award from the Kansas Department of Wildlife and Parks.

For the last several years, KCP&L has partnered with MDC and the U.S. Department of Agriculture to install nests for, monitor the young, and tag the peregrine falcons at our Iatan, Hawthorn, and Sibley stations.

Water and Habitats at Iatan

Near the Iatan Generating Station in Weston, Mo., we restored 20 acres of wetlands, 20 acres of uplands and 10 acres of forest and swamp. The habitat is home to trumpeter swans, waterfowl, shorebirds and other wildlife species. In the winter, this area of the river is home to one of the largest concentrations of bald eagles in Missouri.



Water and Habitats at La Cygne

At La Cygne Generating Station, nearly 5,000 acres—including 2,400 of lake—is home to deer, rabbits, wild turkey, ducks and geese. The water-discharge lake offers an abundance of largemouth bass, blue catfish and crappie. Bird watching is a year-round experience with white pelicans in the spring, and bald eagles and double-crested cormorants in the spring and fall. Visitors can also spot great blue herons and belted kingfishers on the lake's banks. KCP&L has worked with Kansas Department of Wildlife Parks and Tourism to provide public hunting and fishing access at La Cygne. The lake provides excellent winter fishing and waterfowl hunting.

Water and Habitats at La Cygne (continued)



Water and Habitats at Wolf Creek

Coffey County cooling lake for Wolf Creek Generating Station, Coffey County Lake in Burlington, Kan. is dedicated exclusively to fishing. It's developed into a premier fishing lake for species including largemouth and smallmouth bass, blue catfish and white bass. The lake has been featured on national fishing television shows.



Water and Habitats at Montrose

Created in the 1950s to provide the necessary cooling for Montrose Station, the 1,600-acre Montrose Lake near Clinton, Mo. sits among 3,600 acres of land. With its flow of water from the generating plant, the lake is a popular catfishing destination and a haven for waterfowl.



Water and Habitats at Montrose (continued)

The University of Kansas Ornithology Department visits the lake every winter to conduct overwintering bird counts. KCP&L leases over 2,700 acres to the Missouri Department of Conservation to be managed for public use including primitive camping, canoeing and hunting.

On our website at: <http://www.kcpl.com/about-kcpl/environmental-focus/habitats-and-havens>

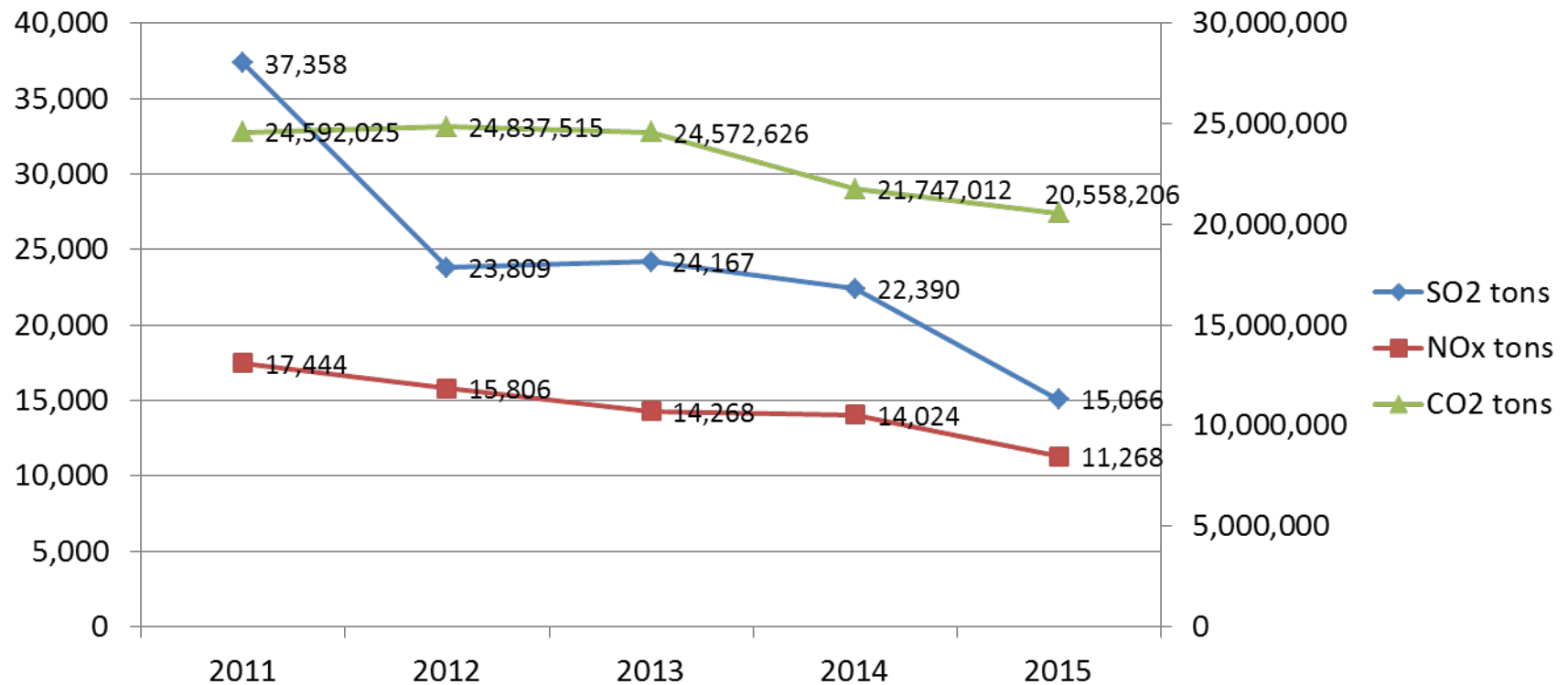
Improving NO_x, SO₂ and Carbon



Improving: NO_x, SO₂ and Carbon Dioxide Emissions

Great Plains Energy

Emissions by Ton



1. Data is Great Plains Energy's share of generating unit emissions.
2. Data was retrieved from EPA's Air Markets website.

KCP&L Clean Charge Network

Electric Vehicle Charging Infrastructure



2015: Top 5 Metros for EV Growth

Rank	Metro	Q1'16	Q1'16 quarterly YOY growth
1	Las Vegas	2,060	49%
2	Bay Area	77,161	45%
3	LA	89,334	44%
4	Kansas City	1,212	44%
5	Denver	4,700	43%

New vehicle sales data sourced from R.L. Polk (does not include used car sales within the timeframe of CCN).

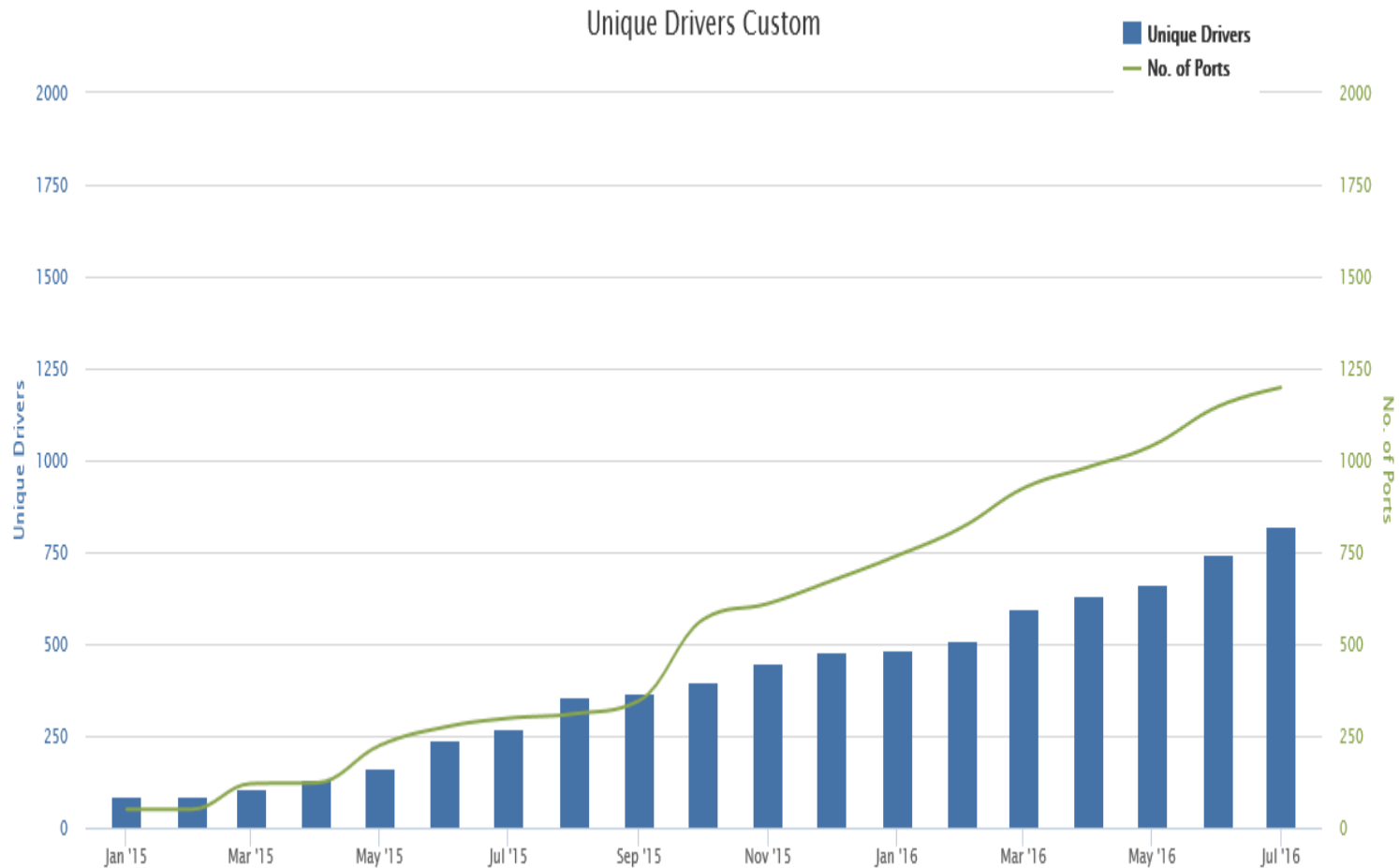
Top 5 Metros for Chargepoint Driver Growth

Rank	Metros	Q1'16	Q1'16 quarterly YOY growth
1	Kansas City	978	118%
2	Denver	2,178	92%
3	Atlanta	9,521	85%
4	Las Vegas	1,005	78%
5	Phoenix	1,441	76%

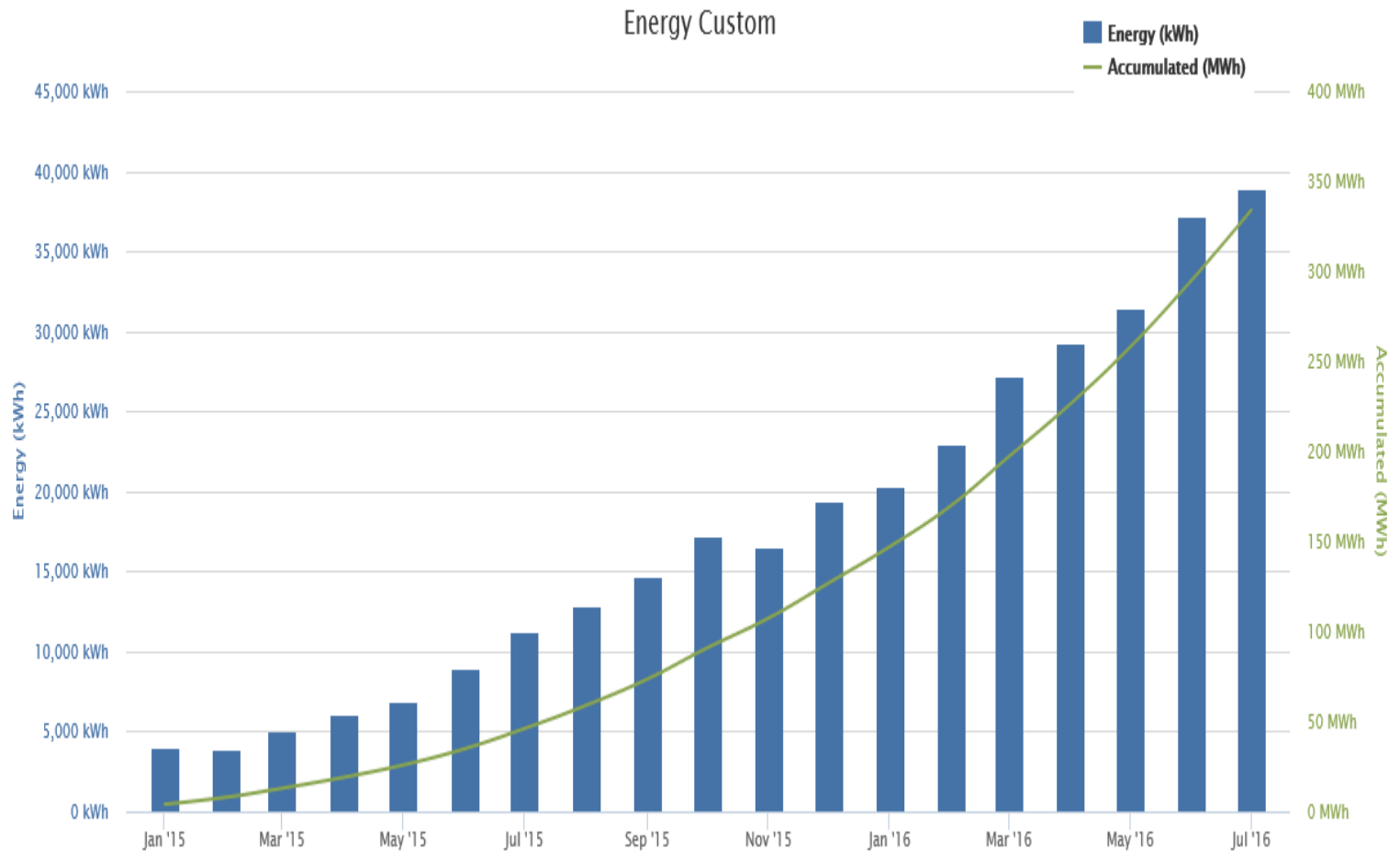
Top 5 Metros for Chargepoint Charging Port Growth

Rank	Metros	Q1'16	Q1'16 quarterly YOY growth
1	Kansas City	1,001	299%
2	Atlanta	672	113%
3	San Diego	498	101%
4	LA	3,063	54%
5	Miami	315	54%

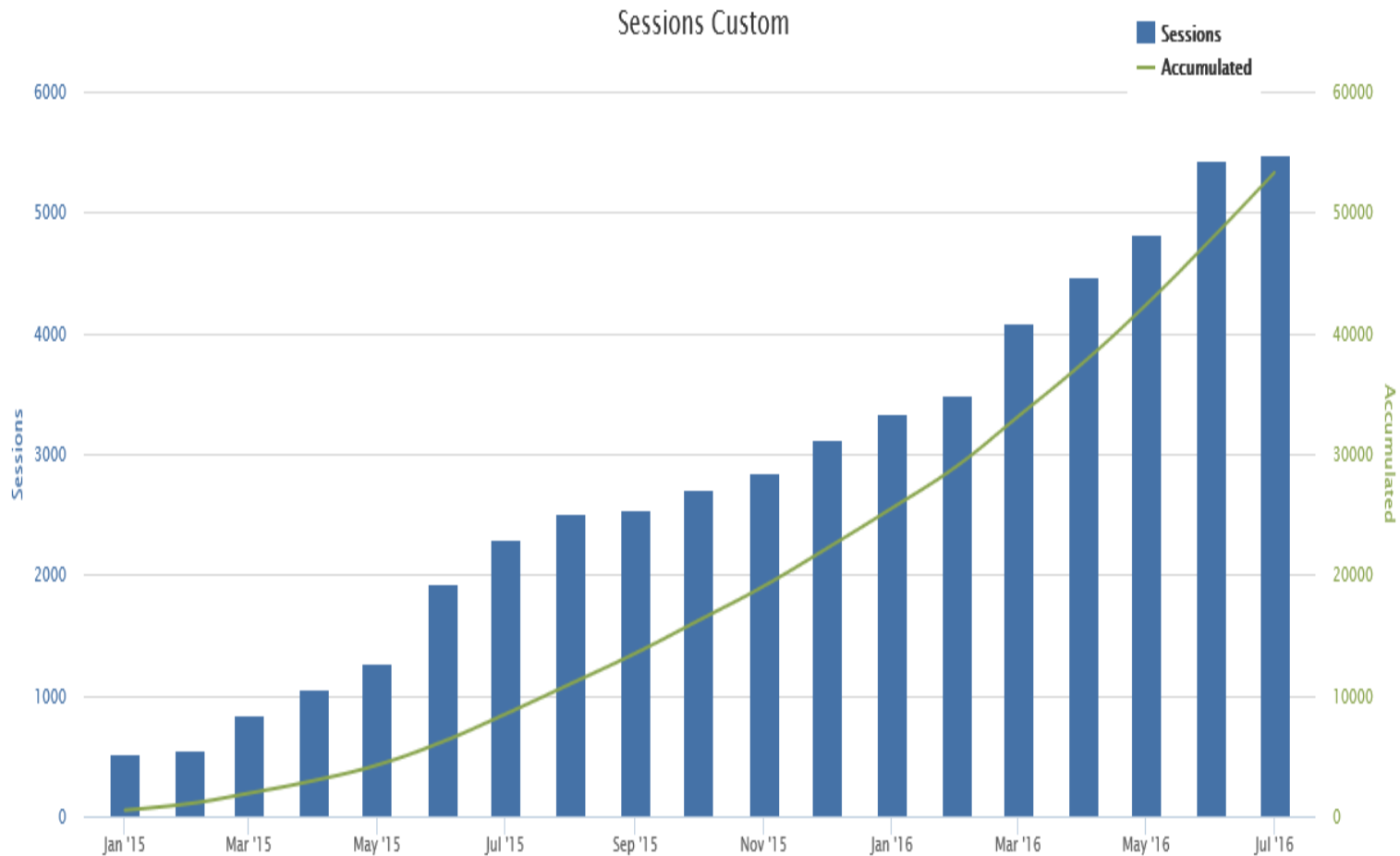
Unique Drivers – over 800% Increase



kWh Usage – over 800% Increase



Charging Sessions– 900% Increase



Clean Charge Network Announcement



This City May Soon Be the Best Place to Own an Electric Car

A huge plan is in the works to juice electric vehicle adoption.

TIME.COM

18 Months Later

AUTOS:

How Kansas City became the EV mecca of the Midwest

Camille von Kaenel, E&E reporter

ClimateWire: Wednesday, August 3, 2016



Kansas City, Mo., has been at the forefront of smart city technology, from a new electric streetcar to streetlights that automatically dim. Photo by Camille von Kaenel.

<http://www.eenews.net/stories/1060041116>

Supplier Diversity Update



Program Results

In 2015, KCP&L spent \$243 million with diverse, disadvantaged and small businesses – an all time high. Since 2010, our spend with diverse suppliers has nearly doubled.

M/WBE
(Minority & Woman Owned)
\$101 million

VO (Veteran Owned &
Service-Disabled VO)
\$16 million

DBE (Disadvantaged)
\$22 million

Other Small Business
(incl. 8A, HubZone, etc.)
\$104 million