

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of the Resource Plan of)
Kansas City Power & Light Company) File No. EO-2012-0323

COMMENTS OF NATURAL RESOURCES DEFENSE COUNCIL

Introduction:

For the purposes of Integrated Resource Planning (IRP), the Commission's policy goal is to set *minimum standards to govern the scope and objectives of the resource planning process.... in order to ensure that the public interest is adequately served.*¹

After evaluating KCP&L's IRP filing, NRDC concludes that the Company's planning processes are deficient in a number of important areas. The most significant deficiency is that KCP&L failed to evaluate DSM and renewable energy resources on an equivalent basis with traditional supply side resources. As a result of these deficiencies, the amount of energy efficiency included in the company's preferred plan (AGEK9) represents a small portion of the cost-effective potential.

It appears that KCP&L has not had adequate time to conduct the basic research and analysis that is absolutely essential to carry out its planning responsibilities under the Missouri IRP rules. There are many instances where KCP&L substitutes simple, unsupported assertions for analysis. There are other instances in which KCP&L uses outdated research that does not reflect the realities of today's market. There are many instances in which KCP&L describes research that is underway or anticipated in the future, and simply suggests that its current, unsupported assumptions may change as a result of the outcome of the future research. Each of the deficiencies are described in the sections below, but the common theme for each deficiency is that the Company simply has not conducted the analysis or has not provided that analysis to inform this plan. This analysis is the heart and soul of the planning rules, and to approve a plan that lacks the basic analysis would be to render the rules meaningless. Accordingly, we recommend that the Commission find that this IRP is incomplete, and require the Company to complete the essential research necessary to fulfill the letter and spirit of the rules.

¹ 4 CSR 240-22.10 (1).

Unless KCP&L substantially augments its IRP by conducting additional research and analysis, the IRP process will not result in a resource plan that will serve the public's interest. The existing IRP is deficient in the following areas:

1. KCP&L has not evaluated energy efficiency and supply side resources on an equivalent basis.
2. KCP&L's preferred plan does not result in the lowest NPVRR and is not justified by the Company.
3. KCP&L's DSM research activities which support the company's preferred plan includes outdated research and information, and does not tie directly to KCP&L's program savings goals and budgets, nor reflect current best practices and an accurate estimate of what is realistically achievable.
4. KCP&L has not designed highly effective DSM programs that broadly cover the full spectrum of cost effective end use measures.
5. KCP&L has not completed a full review of the demand side rates designed to reduce net consumption or modify the timing of its use.
6. KCP&L has not evaluated renewable energy and supply side resources on an equivalent basis, nor have they complied with the rules requiring a maximum RE scenario.

KCP&L has not evaluated energy efficiency and supply side resources on an equivalent basis.

Rule 22.010(2)(A) states that for IRP purposes, a utility is required to “[c]onsider and analyze demand-side resources, renewable energy, and supply-side resources on an equivalent basis, subject to compliance with all legal mandates that may affect the selection of utility electric energy resources.”

In light of Rule 22.010(2)(A), the company developed 22 alternative resource plans. According to KCP&L, each alternate plan complies with the above noted rule. Alternative Resource Plans were also developed “using a combination of various capacities of supply-side resources, demand-side resources, biomass retrofit and differing the timing of resource additions”.²

² Volume 6 at 6 -7.

Argument:

Despite the Company's assertion, KCP&L's planning processes do not comply with Rule 22.010(2)(A). Most significantly, KCP&L has not completed a recent DSM potential study³ and, therefore, has not assessed the full potential of energy efficiency or its levelized costs. Due to the lack of good data, the company is not in a position to compare energy efficiency resources to supply side resources on an equivalent basis. KCP&L has provided no data or analysis to demonstrate whether annual incremental energy savings of 1.0%, 2.0% or 3.0% is realistically achievable. KCP&L has not provided data demonstrating whether higher levels of energy efficiency would cost \$0.02/kWh, \$0.03/kWh or \$0.05/kWh on a levelized basis. Due to the lack of analysis, which the Company is obligated to undertake before selecting a preferred plan,⁴ KCP&L is not able to fairly estimate the amount of DSM that is realistically achievable nor can it compare the current cost of energy efficiency with the current cost of supply side resources. This analysis is the very purpose of the Missouri IRP rules, and to proceed without the analysis is to render the rules entirely meaningless.

KCP&L simply claims that every DSM scenario except its relatively low "DSM A" level is "unrealistic." However, the Company offers no evidence or justification for this, and it is not supported by a study of their territory as required.⁵ Given the large number of jurisdictions throughout the U.S. currently pursuing and/or capturing far greater DSM (including Ameren in Missouri, as well as a number of neighboring states), this unsubstantiated claim is simply not sufficient. Given the lack of any substantive and credible analysis to support this claim the PSC should find the IRP deficient in its failure to analyze the potential for cost-effective DSM.

KCP&L's preferred plan does not result in the lowest NPVRR

Rule 22.010(2)(B) requires utilities to "[u]se minimization of the present worth of long-run utility costs as the primary selection criterion in choosing the preferred resource plan, subject to the constraints in subsection (2)(C)."

KCP&L states that the preferred plan is not the lowest cost plan from a Net Present Value of Revenue Requirement (NPVRR) perspective. Rather, alternative resource plan DBEK1 had the lowest expected NPVRR of all the modeled plans. This plan

³ A DSM potential study is currently in process and is anticipated to be completed in January, 2013.

⁴ 4 CSR 240-22.010.

⁵ 4 CSR 240-22.050(2).

included the “D” level of DSM which was developed to satisfy the requirement of Special Contemporary Issue “h” stated in Order EO-2012-0041. Under “Aggressive” D-level DSM, annual incremental MWh savings are defined as 1.0% of forecasted load. KCP&L rejected DBEK1 because D-level DSM was not considered to be realistically achievable, according to the Company. The plan producing the next lowest expected value of NPVRR was chosen as the Preferred Plan.⁶

Argument:

The IRP is deficient because the preferred plan it is not the lowest cost plan, and the company has not explicitly identified or quantitatively analyzed any other considerations that may constrain or limit the NPVRR minimization criterion, as required by the rules⁷. The Company simply asserts that achieving 1.0% in annual incremental savings is unrealistic, even though there is abundant evidence that DSM program administrators across the nation are achieving the same or greater savings (See below).

The preferred plan and each of the alternative resource plans reported to have been considered, and ultimately rejected, are ambiguous with respect to how the company developed its DSM savings goals.

While the Company did provide highly confidential spreadsheets that were purported to support the company’s plan, the energy savings impacts inserted into the spreadsheets⁸ are hard-coded and KCP&L has not provided any explanations as to how the goals and budgets were developed. (As an example, see excel file “KCP&L_Program cost effectiveness_HC240-22.050.xls,” where factors are simple inputs into the excel file and are not traceable to any verifiable source of data or study.⁹)

The program descriptions about program participation are equally devoid of useful savings and cost information. Instead of describing how the company arrived at the estimates of program participation, KCP&L states that incremental

⁶ Volume 1, at 20.

⁷ 4 CSR 240-22.010(2) C

⁸ See KCP&L_Program cost effectiveness_HC240-22.050.xls, and KCP&L_DSM_Plan 240-22.050.xls.

⁹ KCP&L’s spreadsheets have been materially altered to remove many of the formulas. This may have been a result of pasting results from multiple files and systems. Nonetheless, removing formulae from work papers appears to be a violation of 4 CSR 240-22.080 (11). Had such formulae been left in place, the company’s analyses would have provided greater insight into the company’s methodologies.

and cumulative program participants were calculated in the Work Paper “KCP&L_Program cost effectiveness_HC240-22.050.xls”, the file noted above.¹⁰ This appears to reflect circular logic that is unhelpful. Although KCP&L noted that the company has engaged Navigant Consulting to estimate and document program participation, this work will not be completed until January, 2013.

The Company’s cost-effectiveness screening processes are also undocumented and vaguely described. Rather than explicitly identify or quantitatively analyze avoided-cost benefits, the Company’s supporting spreadsheet merely includes a list of average avoided energy and capacity costs. Again, the cost figures are hard-coded inputs and untraceable back to any analyses. Aside from this major documentation deficiency, it appears that the company has also incorrectly calculated avoided energy and capacity cost benefits. The company’s estimates of avoided cost benefits are based on annual averages instead of more precise methods typically included in potential energy efficiency studies.¹¹ More precise methods include load shapes of major end uses when determining incremental energy savings and thus avoided cost benefits. When calculating benefits in this way for space cooling measures, for example, utilities typically report higher net energy benefits since HVAC units avoid higher cost power during the peak summer months. KCP&L analyses do not appear to capture these kinds of benefits or have not documented its methodologies based on available information.

Put simply, the DSM analysis, as described in Volume 5, has not been provided. . While the DSM Volume 5 is close to 200 pages long, there is virtually no discussion or documentation of methods, major assumptions, inputs, or other relevant data that would allow a reader to understand how KCP&L arrived at its DSM estimates, or whether they reflect the full realistic achievable potential, or provide any justification for why the “aggressive” and “very aggressive” scenarios are not realistically achievable. Rather, this volume simply lists each rule and asserts that the Company has complied. . Often these responses are simply that KCP&L has contracted with Navigant to undertake a future potential study. In some cases where existing studies are cited, KCP&L does not explain how these studies are used, and many of them seem outdated or irrelevant to an adequate DSM analysis as described more fully below.

The bulk of the DSM volume consists of listing numerous “energy efficiency measures.” First, it is unclear why KCP&L chooses to give so much detail on individual measures while omitting the important documentation of how they

¹⁰ Volume 5, at page 175.

¹¹ KCP&L_Program cost effectiveness_HC240-22.050.xls.

arrived at their DSM estimates. Second, this list also exposes a the extent to which KCP&L has relied on seriously outdated (by more than a decade in some cases) information about current DSM best practices. For example, KCP&L indicates they will promote “NEMA premium motors,” and cites the relevant standard impacting this measure as a 1997 Federal Standard. However, this 15 year old standard was superseded five years ago by the current Federal Standard (EISA 2007) that makes these same NEMA premium motors the *de facto* baseline minimum efficiency levels that can be manufactured for sale in the U.S. since December 2010. Most jurisdictions have long since discontinued promotion of these motors. There are numerous examples in this volume of outdated or incorrect information, as explained in more detail below.

In the absence of any analysis showing why KCP&L’s service territory has substantially less potential for cost-effective savings than other service territories around the country and in the Midwest region, the fact that many others are meeting or exceeding a 1% annual load reduction target casts even greater doubt on KCP&L’s conclusion that it is not realistic. KCP&LAs shown in the table below, program administrators exceeded a 1.0% savings rate in 2010 in several jurisdictions.¹²

¹² EIA 2010 data

Organization	Type of Organization	State	EE Spending	
			Savings as % Load	as % of Revenue
United Illuminating Co	Investor Owned	CT	4.27%	7.9%
Connecticut Light & Power Co	Investor Owned	CT	3.22%	6.4%
Salem Electric	Cooperative	OR	3.13%	8.7%
Southern California Edison Co	Investor Owned	CA	2.64%	4.7%
Duke Energy Ohio Inc	Investor Owned	OH	2.40%	1.9%
Pacific Gas & Electric Co	Investor Owned	CA	1.89%	3.4%
City of Burlington-Electric	Municipal	VT	1.83%	3.7%
Austin City of	Municipal	MN	1.82%	2.1%
Dayton Power & Light Co	Investor Owned	OH	1.81%	1.1%
Baltimore Gas & Electric Co	Investor Owned	MD	1.70%	6.0%
City of Chaska	Municipal	MN	1.56%	1.2%
City of Greenfield	Municipal	IA	1.52%	3.0%
Tacoma City of 2010	Municipal	WA	1.49%	5.8%
Tacoma City of 2011	Municipal	WA	1.14%	5.1%
City of Glendale	Municipal	CA	1.50%	2.4%
St Croix Electric Coop	Cooperative	WI	1.48%	2.0%
Chippewa Valley Electric Coop	Cooperative	WI	1.43%	2.8%
Sacramento Municipal Util Dist	Political Subdivision	CA	1.41%	2.6%
NorthWestern Corporation	Investor Owned	MT	1.40%	1.7%
Duquesne Light Co	Investor Owned	PA	1.37%	1.4%
Fitchburg Gas & Elec	Investor Owned	MA	1.35%	5.1%
City of Pasadena	Municipal	CA	1.33%	4.6%
PUD No 1 of Clallam County	Political Subdivision	WA	1.32%	4.9%
Salt River Project	Political Subdivision	AZ	1.32%	1.3%
Puget Sound Energy Inc	Investor Owned	WA	1.30%	3.3%
Nevada Power Co	Investor Owned	NV	1.28%	1.7%
Idaho Power Co	Investor Owned	OR	1.28%	4.7%
Idaho Power Co	Investor Owned	ID	1.28%	4.7%
Fort Collins City of	Municipal	CO	1.24%	3.5%
City of Marquette	Municipal	MI	1.20%	1.2%
City of Marshfield	Municipal	WI	1.16%	0.6%
Arizona Public Service Co	Investor Owned	AZ	1.15%	1.7%
Spencer City of	Municipal	IA	1.13%	5.5%
Tucson Electric Power Co	Investor Owned	AZ	1.13%	1.6%
PUD No 1 of Chelan County	Political Subdivision	WA	1.10%	3.2%
Seattle City of	Municipal	WA	1.09%	4.8%
City of Springfield	Municipal	OR	1.09%	2.7%
Sierra Pacific Power Co	Investor Owned	CA	1.08%	0.9%
Northern States Power Co - Minn	Investor Owned	MN	1.07%	3.0%
Eugene City of	Municipal	OR	1.07%	5.3%
City of Anaheim	Municipal	CA	1.06%	1.7%
Interstate Power and Light Co	Investor Owned	IA	1.05%	4.1%
Snohomish County PUD No 1	Political Subdivision	WA	1.04%	3.8%
Columbus Southern Power Co	Investor Owned	OH	0.99%	1.1%
Average			1.6%	2.9%

Out of 60 reporting institutions included in the above table, 59 local distribution utilities exceeded 1.0% annual incremental savings. Some organizations noted above have been delivering value added efficiency services for several years (e.g. PG&E); others have only recently introduced efficiency programs (e.g. Columbus Southern). In addition to the self-reported EIA data included in the above table, it is worth noting that Efficiency Vermont and NYSERDA – two non-utility efficiency program administrators – have been achieving high rates of annual

savings in excess of 1.0 percent annually for more than a decade. In addition, Massachusetts utilities that report program results through the Massachusetts Energy Efficiency Advisory Council are achieving energy savings in excess of 2.0 percent annually.¹³ Closer to Missouri, Comed is now pursuing goals of about 1% of load each year in Illinois (a level KCP&L claims is unrealistic), as are DTE and Consumers Energy in Michigan.¹⁴ Irrespective of the age of the DSM programs, the important conclusion that can be drawn from the above table is that location does not matter. Cost-effective energy efficiency potential is as likely to exist in Missouri as it is in Illinois, Michigan, Iowa, Massachusetts or California. What is important to program success is whether the program administrator provides a suite of efficiency programs that aggressively acquire resources and transforms local markets.

Given that numerous organizations have demonstrated a capacity to cost-effectively acquire high savings levels, KCP&L's claim that these levels cannot be realistically achieved is simply implausible and cannot be considered credible without a detailed analysis supporting it and full documentation of that analysis. Simply stating it cannot be done, as KCP&L has, is insufficient.

Even if KCP&L's premise that higher savings rates, such as DSM – D, are not achievable is taken at face value, the methodology used to reduce the savings estimate from DSM D to DSM A undermines the remainder of the analysis. This is so because the Company appears to have arbitrarily reduced its savings estimates with little or no substantiation. Such reductions have resulted from self-imposed constraints based on program budgets, not from any substantive analysis asserting that Missourians are incapable of reducing energy consumption. Rather than impose these constraints, KCP&L should have instead allowed DSM resources to compete with supply side resources on the basis of levelized costs. Although KCP&L has not yet completed its potential study, one approach to ensure its IRP reflects the maximum achievable potential, which is the policy intent of IRPs, would be to assume customer's fully fund programs that offer 100 percent incentives (in other words, an immediate customer payback) to determine if such efficiency programs are a lower cost solution to supply side resources. To address this issue head on, the Company's consultant would have to develop a much more robust analysis than those that have been included in the Company's current IRP.

¹³ While MA utilities submittal of their 2013-2015 DSM Plan is pending, as part of a merger settlement two of the three major electric utilities have already committed to future goals or *no less than 2.5% of load captured each year (Docket 10-170, February 15, 2012)*.

¹⁴ See, Docket No. 10-570 (Commonwealth Edison), Docket U-15805 and U-16412 (Consumers) and U-15806 (DTE).

KCP&L's DSM research activities, which form the basis of the Company's DSM A plan, are based on incomplete research or dated studies that are either irrelevant to today's circumstances or have no direct relevance to KCP&L's service area.

Rule CSR 240-22.050 (2) states the following: *The utility shall conduct, describe, and document market research studies, customer surveys, pilot demand-side programs, pilot demand-side rates, test marketing programs, and other activities as necessary to estimate the maximum achievable potential, technical potential, and realistic achievable potential of potential demand-side resource options for the utility and to develop the information necessary to design and implement cost-effective demand-side programs and demand-side rates. These research activities shall be designed to provide a solid foundation of information applicable to the utility about how and by whom energy-related decisions are made and about the most appropriate and cost-effective methods of influencing these decisions in favor of greater long-run energy efficiency and energy management impacts.*

According to KCP&L, Volume 5, section 2 provides a full description of the research and analyses that support the company's compliance claim for this rule.

Argument:

4 CSR 240-22.050 (2) is a wide ranging requirement that imposes on utilities the responsibility to a) conduct thorough research to fully support the integrated resource plan and b) document such research. A full reading of the DSM Volume 5 can only result in a finding that KCP&L has clearly not complied with this rule. They have not done the study required yet, and also provide virtually no documentation of the research and analyses they have done.

Volume 5, section 2 at page 37 of the resource plan includes a long list of studies that, according to KCP&L, support the company's assertion that the IRP complies with 4 CSR 240-22.050 (2). The reports and analyses, however, do not actually substantiate the company's claims because the reports and analyses have not been completed, are not germane to DSM in the company's service area or rely on information that is dated. Due to these deficiencies, the research and analyses used to support the preferred plan do not warrant consideration because they fail to *provide a solid foundation of information applicable to the utility about how and by whom energy-related decisions are made and about the most appropriate and cost-effective methods of influencing these decisions in favor of greater long-run energy efficiency.* Below is a summary of KCP&L's description of the reports and analyses:

1. **Energy Efficiency potential study:** Perhaps the most important analysis to be conducted is the energy efficiency potential study. This study will

provide the company and its stakeholders with a solid understanding of the incremental energy and capacity savings and net benefits. Despite its importance, the company's consultant has not yet completed the analysis. The study is not expected to be completed until January, 2013. This lack of a current potential study alone supports a finding of deficiency in regard to the DSM analysis.

2. **JD Power Customer Satisfaction Survey:** KCP&L refers to its ongoing engagement with JD Power & Assoc.'s survey of customers to monitor customer satisfaction. According to the company, the survey measures customer satisfaction by examining six key factors: power quality and reliability; price; billing and payment; corporate citizenship; communications; and customer service.¹⁵ However, the explanation of the survey in Volume 5 has no bearing on DSM or customer's interest in energy efficiency. This report cannot be relied upon as an indicator of customer awareness of energy efficiency opportunities. Even if it could, KCP&L has provided no documentation of how this study was used in its DSM analysis, if at all.
3. **AccountLink:** AccountLink is a free, account management tool that allows customers to view and pay their bills online, look up and track payments, view daily energy usage, historical energy usage and generally manage their relationship with KCP&L in a self-service environment. This free tool has no bearing on the likelihood of increased participation, nor does it shed light on the level of cost effective energy savings potential. Further, to the extent that Accountlink could support behavioral based DSM initiatives such as new DSM rates or programs, there is no discussion or documentation of whether that was even considered. In the case of DSM rates, as discussed below, this clearly has not been done because the Company completely failed to even analyze DSM rates as a resource, a clear violation of IRP rules.
4. **Customer Solutions:** this report is a survey of business customers to measure customer satisfaction. According to KCP&L, the objectives of the survey research is to a) Collect and report as indicator and b) use general research findings to apply across all business customers. This survey report will have no bearing on the likelihood of increased participation, nor will it shed light on the level of cost effective energy savings potential. Again,

¹⁵ Vol. 5, Section 2.2 at 38.

even if it could in some way inform the DSM analysis, KCP&L provides no documentation of how it was used if at all.

5. **Product and Service Awareness/Interest study:** In this area of analysis, KCP&L is planning on conducting a research study designed to capture customer awareness of products and services along with interest levels based on program descriptions. The objective of the research will be to better understand the saturation levels of KCP&L's products and services. Since the research has not been conducted, there is no way to determine the level of DSM customer awareness, participation or system impacts. Further, it is doubtful studying current awareness would result in information germane to what *could be* achieved with DSM if KCP&L pursued an aggressive marketing campaign to raise awareness.
6. **Cool Homes:** In this internal survey, KCP&L asked participating customers to provide feedback on the Cool Homes program. Survey questions pertained to the accuracy and usefulness of HVAC information to the overall service provided by the contractor. Responses to the survey indicate a high level of customer satisfaction. Higher levels of customer satisfaction typically lead to higher savings rates as more customers hear about the services offered. One would expect that positive perceptions of service would lead to higher rates of participation. Although the internal survey is positive, the company has not directly linked the results of the survey to DSM A-level savings or any other DSM analysis outputs, nor documented how if at all this study was used.
7. **Energy Optimizer:** This program helps customers and the company to control system peak demands during the summer by installing programmable thermostats. Rather than directly link previous program results to DSM A savings, this section of the filing merely re-states how the Optimizer program cycles participating customers HVAC equipment. Nowhere in this section of the IRP does the company actually substantiate expected savings claims.
8. **Chartwell:** According to KCP&L, Chartwell is a facilitator of knowledge exchange within the utility industry. Based on its membership in Chartwell, the company asserts that it has access to industry reports, white papers, webinars, consulting, utility contacts, and discounts on all Chartwell conferences. Such access will allow for greater networking opportunities to keep up with industry trends and best practices. Although the information accessed may be useful and pertinent to DSM, access to such information

does not necessarily mean the company has provided adequate research in support of the rule. In addition, failure to acknowledge current DSM best practices at least implies KCP&L may not be making sufficient use of this resource.

9. **EPRI 2007 Energy Efficiency Initiative:** According to the Company, KCP&L's financial support for EPRI provides it with access to EPRI's library of energy efficiency and demand response research and data. Specifically, KCP&L refers to EPRI's creation of the "Living Library" as a source of information on the functionality of energy efficiency products. However, the company's explanations for financially supporting EPRI's initiatives fail to draw a direct link between EPRI's findings in its general reports and energy savings potential in KCP&L's service area. Further, KCP&L refers to EPRI's general website. But, the website does not appear to point to any specific analysis that was conducted in KCP&L's service territory. Finally, the Company seems to imply that because EPRI is conducting research on new technologies, such as LED lighting¹⁶, that it is premature to assume aggressive promotion of these cost-effective technologies. However, many jurisdictions are currently capturing savings from cost-effective LED products, and the DSM industry is supported in this through things like Energy Star, DOE testing and lists of qualified efficient products. Just because EPRI is performing research is not an acceptable reason to ignore the very large and cost-effective DSM potential from these technologies.
10. **KEMA MF Potential study:** In 2010, KEMA conducted a multifamily potential study and determined that the sector's annual realistic achievable potential was 14,447 MWh annually or 1.6% of total sectoral usage (885,533 MWhs/year). Even though the KEMA study did not include emerging technologies such as LEDs, and focused on the one sector that includes a major barrier – split incentives between tenants and owners – the findings appear to indicate that aggressive cost effective DSM of more than 1.0 percent per year is achievable. Despite these positive findings, KCP&L appears to discount the results and has not made any direct connection between the study and new potential in this sector. Put simply, the single study of major relevance to an estimate of achievable DSM resources listed found far more resources cost-effectively available than KCP&L assumes.

¹⁶ Volume 5, at 42 and 44.

11. Analysis of Energy Efficient Street lighting: At page 44 of Volume 5, the Company generally refers to LED street lighting as an alternative energy efficiency measure under investigation. This is a positive development as street lighting retrofits are a cost-effective energy resource. However, the company has not actually included LED street lighting as a measure in its programs. The company, in fact, appears to omit LEDs from its residential and C&I programs. Moreover, a review of the LED Street lighting presentation does not draw any conclusions about the level of specific savings in KCP&L's service area. Thus, it is unclear how this particular research supports the company's claim of complying with the rule.

In summary, KCP&L cites a number of studies that have no clear direct bearing on estimating cost-effective achievable DSM resources within its territory, do not explain how these studies are relied on (if at all), and admit that the main study they are required to do has not been done. What is even more troubling is that in discovery responses, KCP&L makes clear that they in fact do have some prior potential studies that, while somewhat dated, could have been relied on as much more relevant to estimation of achievable DSM.¹⁷ In its filing, KCP&L does not even acknowledge the existence of these studies. For example, a 2007 study of C&I potential indicated a total achievable potential of 17% of forecast 2028 load, equal to an average annual potential of 1.2% of KCP&L's 2007 C&I load. In other words, KCP&L actually has a study that found significantly more achievable potential than it admits is possible, but failed to acknowledge this or explain why this estimate is no longer relevant.

KCP&L has not designed highly effective DSM programs that broadly cover the full spectrum of cost effective end use measures.¹⁸

4 CSR 240-22.050(1) (B) states: *to fulfill the goal of achieving all cost effective demand-side savings, the utility shall design highly effective potential demand-side programs consistent with subsection (1)(A) that broadly cover the full spectrum of cost-effective end-use measures for all customer market segments.*

According to KCP&L, program descriptions included in section 1.2, Designing Effective Potential Demand Side Programs, are sufficient to comply with the rule.

¹⁷ See KCP&L response to Sierra Club Question 12, dated 8/30/2012.

¹⁸ See Section 1.2, pg. 5.

Argument:

A plain reading of the rule suggests that in order to fulfill the goal of achieving all cost effective demand side savings, programs should be designed and implemented in accordance with industry best practices. Despite the intent of the rule, KCP&L's program descriptions do not reflect industry best practices, nor do they adequately suggest that a full spectrum of cost effective measures are actually included in the programs.

Examples of such deficiencies are numerous. KCP&L's programs do not include effective designs to aggressively acquire resources in the retrofit sector nor do they include strategies to transform markets. KCP&L does not consider a direct-install program to address the needs of small business owners, which many jurisdictions have found to be a highly effective approach to reaching this hard-to-reach market, nor any explanation of why they believe a proven program such as this could not be realistically offered. Furthermore, there do not appear to be programs or strategies explicitly directed at niche markets (e.g., grocery & convenience stores, restaurants, governmental institutions, K-12 schools, universities and municipal buildings) with substantial savings potential and/or unique market barriers. As a consequence, KCP&L's portfolio includes some major gaps and does not cover the full spectrum of customer market segments.

More specific examples of deficiencies in industry best practices include:

1. C&I lighting measures include Standard T8 fluorescent technology as a major measure to be promoted.¹⁹ Standard T8s have been replaced by "high performance" T8s (HPT8) in best practice programs starting more than 5 years ago. HPT8s are significantly more efficient, provide higher net benefits, are applicable in virtually every instance where a standard T8 would be, look identical, and provide better light quality at very low incremental cost. In fact, virtually all DSM programs now consider standard T8s to be baseline practice for all new installations of linear fluorescent lighting. As a result, this measure is simply inappropriate for a DSM program to promote and pay incentives for and would likely result in very high free ridership.

KCP&L indicates they will pursue retrofit (early retirement) of still existing and less efficient T12 linear fluorescent lighting with standard T8s. While there are certainly still very inefficient T12 systems in existence that should

¹⁹ Volume 5, at pg. 70.

be retrofitted, there are a number of problems with KCP&L's approach and analysis. First, by promoting installation of only standard T8s the program would effectively discourage cost-effective efficiency by not pursuing an efficient option, but rather simply a standard practice option. Further, while KCP&L indicates this as a potential "retrofit" or early retirement measure, they explicitly omit any labor costs involved with this measure. Omission of labor costs would imply customers are already planning to replace lighting, in which case there would be no savings at all because standard T8s are now the minimum efficiency that can legally be manufactured and sold in the U.S. If indeed these are early retirements, then KCP&L's analysis is inadequate by ignoring labor costs.²⁰

Finally, KCP&L's program design ignores the realities of the current state of the C&I lighting market. For example, under the subsection heading of "Existing Energy Standards" KCP&L simply states that "there are currently no standards for this technology"²¹ This is incorrect and demonstrates that KCP&L has not conducted the rigorous analysis necessary to carry out the requirements of the rules that govern planning in Missouri. KCP&L. In fact, the existing T12 lamps and ballasts have been phased out by federal standards as of January 2012.²² In other words, those who still have these lamps and ballasts will have no choice but to convert their fluorescent lighting systems as lamps and ballast burn out regardless of a DSM program. While there still may be cost-effective retrofit opportunities to advance this replacement and ensure customer jump to a high efficiency option such as HPT8s, KCP&L simply is either unaware of or ignoring these standards and simply proposing to spend ratepayer money to assist customers with upgrades to the minimum standard efficiency and result in no real savings.

2. According to KCP&L, the Affordable New Homes program has been discontinued due to a lack of participation.²³ Program administrators provide low income programs to achieve an important policy goal: customer and social equity. Additionally, low income housing typically

²⁰ Vol. 5, at pg. 71.

²¹ Vol. 5, p. 73.

²² U.S. DOE Rulemaking, 10 CFR Part 430, "Energy Conservation Program: Energy Conservation Standards and Test Procedures for General Service Fluorescent Lamps and Incandescent Reflector Lamps," 2009.

²³ Vol. 5, at pg. 5.

includes housing stock that has substantial savings potential. Thus, ignoring this important sector is not a viable option. Instead of discontinuing the program, KCP&L should be re-designing the program to reflect best practices and ensure that customers are better motivated to participate. Such practices include, for example, directly installing measures, paying incentive equal to 100% of incremental costs and working closely with community action agencies.

3. The proposed residential lighting and appliance program relies on research conducted by RLW Analytics in March, 2007.²⁴ The research project was aimed at providing technical, market, and economic analyses that would be specific to the KCP&L service area, with the goal of identifying key characteristics for energy efficiency opportunities. Since the research is dated, it is not a sufficient basis for developing potential studies for this market. Had the company provided up-to-date analyses, additional cost-effective energy savings potential would have likely been uncovered compared to the amount reported in KCP&L's current IRP. Technologies and costs have changed substantially since 2007, resulting in greater savings levels in many end uses than before. The market and the opportunities in residential lighting, for example, have fundamentally transformed since 2007 as a result of a new Federal Standard phasing out standard incandescent bulbs and the emergence of cost-effective LED technologies that provide additional savings. However, KCP&L's program description and measure lists do not include LEDs. This omission is a significant oversight as it would prevent the Company from acquiring large amounts of cost-effective savings. Furthermore, because costs for LED technologies are falling and performance is increasing, best practice programs such as those in Massachusetts, Vermont, Iowa and California are providing significant incentives for residential LEDs to prime the market and raise awareness.
4. Existing commercial and industrial programs include only building operator certification and energy analyzer programs.²⁵ These programs do not acquire energy resources directly but are instead educational programs that aim to transform markets over time. However, without linking them directly to full service programs that provide technical and financial assistance their impact will be limited. Although KCP&L has proposed

²⁴ Vol. 5, at pg. 27.

²⁵ Vol. 5, at pgs. 14-15.

prescriptive, custom and new construction programs, they will not be operational until 2014. There is no reason why these programs could not be introduced in 2013, a full year earlier than planned.

5. C&I custom program designs establish incentive levels based on costs and market needs.²⁶ This design format suggests that incentives are not actually designed to capture all cost effective resources but instead are constrained based on the company's interpretation of the market's needs. To comply with the rule, program incentive levels should not be arbitrarily constrained but should instead be allowed to float up to the level where the program or project is no longer cost effective compared to traditional supply. It appears this mention of "market needs" may refer to KCP&L arbitrarily constraining DSM resources based on a need for capacity. As the PSC made clear in its Order regarding Ameren's 2012 IRP (Docket EO-2011-0271), constraining DSM or RE resources based on a need for capacity is not acceptable and violates the "equivalency" test.²⁷
6. C&I custom program design also includes grants to qualified customers to conduct energy audits. The grants are capped, however, between \$300 and \$500 per audit. Depending on the nature of the facility and size, the cost of appropriate technical services in most custom programs often exceeds \$10,000. It is unlikely that any "audit" costing in this low range will be sufficient to assist customers in properly identifying and analyzing custom DSM opportunities sufficiently to move forward with investment. KCP&L is providing extremely low grants and, as a result, will likely fail to attract many participants.
7. C&I prescriptive measures include incentives for premium motors.²⁸ According to KCP&L's program design, premium motors offer considerable efficiency gains over standard "EPACT" efficiency motors.²⁹ As mentioned above, the standards cited by the company, however, date back to 1997 or earlier and are no longer relevant. That KCP&L seems unaware of, or simply ignores, the newer standard which is now 5 years old, and proposes to provide incentives for the *minimum legally available motor efficiencies* again demonstrates that it has not done the requisite analysis to have fulfilled its

²⁶ Vol. 5, at pgs. 28-30.

²⁷ Docket EO – 2011 – 0271, In re: Union Electric Company's 2011 Utility Resource Filing Pursuant to 4 CSR 240 – Chapter 22, April 27, 2012

²⁸ Volume 5, at pg. 152.

²⁹ EPACT refers to the Energy Policy Act of 1997.

obligation under Missouri planning rules. Moreover, if the company proceeds to rely upon the outdated assumptions that inform its current program design, the goals of incorporating demand-side resources in the planning process will be severely undermined.

8. C&I new construction and prescriptive program designs envision capping incentives to 50% of the incremental cost to stimulate market uptake.³⁰ To acquire all cost-effective energy efficiency, best practices dictate that incentives should be increased in select markets to fully address market barriers such as costs, lack of awareness and technology risks. Many programs provide incentives of 75% or more of incremental cost. KCP&L has not undertaken any effort to analyze the different levels of savings and participation for different scenarios of incentives and costs to determine the most appropriate mix of DSM resources, as required by the rules broadly.

The above noted deficiencies in program design reflect two frailties in KCP&L's planning process: a) the company has not undertaken the research and analysis necessary to incorporate best practice protocols for designing programs to acquire all cost effective efficiency resources, and b) the company has made significant, and possibly costly, mistakes in estimating the incremental energy savings of certain measure types. The only logical conclusion of a full reading of KCP&L's DSM analysis is that the Company has failed to adequately study, analyze and design a DSM portfolio that reflects best practices and a reasonable estimate of what is maximum and realistically achievable potential. As a result, they fail to comply with Missouri's IRP rules and cannot be viewed as having designed "highly effective potential demand-side programs consistent with subsection (1)(A) that broadly cover the full spectrum of cost-effective end-use measures for all customer market segments" or as having treated DSM on an equivalent basis to supply-side resources.

KCP&L has not completed a full review of the demand side rates designed to reduce net consumption or modify the timing of its use.

4 CSR 240-22.050(4) states: *A utility shall develop potential demand-side rates designed for each market segment to reduce the net consumption of electricity or modify the timing of its use.*

³⁰ Volume 5, at pg. 34.

KCP&L's resource plan identifies each sub-part to CSR 22.050 (4) and asserts that either their existing DSM rate structure complies with the rule or that the company is in the process of conducting a DSM rate study.

Argument:

4 CSR 240-22.050(4) includes several sub-parts. Each sub-part requires KCP&L to conduct extensive analyses aimed at understanding, identifying, assessing and estimating the potential impacts of DSM rates on customer's consumption of energy. The rule further requires the utility to describe and document its demand-side rate planning and design processes. Contrary to the company's assertions, the IRP does not fully comply with the intent of CSR 22.050 (4).

The IRP is deficient for several reasons; the most significant being that the company refers to research that will be completed at some time in the future but does not indicate they have performed the required analyses to assess the potential for new rate designs to induce demand-side reductions or shifts in usage. For example, with respect to 22.050(4)(D) 1 – *An assessment of the demand and energy reduction impacts of each potential demand-side rate* – the company states that it will have data in the SmartGrid Residential TOU pilot after the summer of 2012. Yet, data has not been made available. The company further states that it has engaged Navigant to conduct a DSM potential study, including an assessment of DSM rates. This study is not expected until January, 2013.

Another example relates to 22.050(4)(D) 3 – *an assessment of how the interactions between potential demand-side rates and potential demand-side programs would affect the impact estimates of the potential demand side programs and potential demand-side rates*. Again, the company merely states that it would need "modeling" to assess the interactive impacts of DSM rates and DSM programs. This modeling will be performed by Navigant as part of the forthcoming DSM potential study.

The company repeats this type of reasoning for the following sub-rules:

- 22.050 (4)(D) 2
- 22.050 (4)(D) 3
- 22.050 (4)(D) 4
- 22.050 (4)(D) 5 A
- 22.050 (4)(D) 5 B
- 22.050 (4)(D) 5 C

- 22.050 (4)(E)
- 22.050 (4)(F)
- 22.050 (4)(D)G)

The rules do not provide KCP&L with the type of escape hatch the company has created for itself in this IRP. The intent of the rule is to develop a resource plan based on current and robust analyses and research. Rather than conduct such analyses and research, the company simply implies that the IRP may be amended based on the results of future studies..

Another reason the IRP is deficient relates to the company's reliance on simple assertions rather than actual research and analysis that is supposed to inform the company's assessment of possible DSM rate impacts. As an example, the company's response to 22.050(4)(B) - *Identify demand-side rates applicable to the major classes and decision-makers identified in subsection (1)(A). When appropriate, consider multiple demand-side rate designs for the same major classes* – merely identifies existing DSM rates purported to be similar to those offered by neighboring utilities.³¹ Rather than restate the terms of the existing DSM rate tariffs, the company should be evaluating whether potential changes in DSM rates could be modified to increase uptake in DSM rate services. According to the Company, there are only 190 DSM rate customers currently. Instead of providing data on energy savings attributable to DSM rates – which the company should have provided – the company implies that its existing rate structures comply with the intent of the rule. This is not so. Since KCP&L has nearly 500,000 customers, a more interesting response would have included the findings of an analysis of how DSM rates could be modified to increase customer awareness around SmartGrid applications, for example, and how such applications could modify energy consumption. The company has not completed this type of analysis.

Further, KCP&L seems to conflate the term “DSM Rates” simply with load shedding or shifting of usage from on-peak to off-peak times. However, this is only one subset of potential DSM rates that could influence customer usage. For example, KCP&L has not even considered the possibility of different rate designs such as inclining block rates or other innovations that could provide price-induced behavior changes. KCP&L seems to imply that because only 190 current customers are on the “DSM Rates” now available from KCP&L that no significant potential exists for DSM rates to provide additional cost-effective resources. However, this is

³¹ Volume 5, at pg. 181.

not at all supported by any research or analysis. As a point of comparison, other recent potential studies have estimated significant possible savings from smart grid and other rate-related resources.

Because KCP&L has not fully reviewed or actually conducted analyses of the potential impacts of DSM rates on energy consumption, the IRP is deficient and does not comply with CSR 22.050(4).

KCP&L has not evaluated renewable energy and supply side resources on an equivalent basis, nor have they complied with the rules requiring a maximum RE scenario.

As with demand side resources, rule 22.010(2)(A) requires that renewable resources also be analyzed on an equivalent basis with traditional base load plants. However, KCP&L's renewable energy analysis suffers from many of the same analytical issues as its DSM analysis. Contrary to the broader standard adopted by the Commission in Ameren Missouri's 2011 IRP, the Company appears to add new renewable generation based on the need for new capacity:

[T]he need for additional capacity should not be the only basis for modeling additional wind power, other renewable energy resources, or energy efficiency measures. Wind resources may significantly reduce energy costs and thus may be able to reduce PVRR even when additional capacity is not needed for reliability purposes.³²

And in the case of Ameren Missouri, while

[t]he models may not indicate the advisability of adding wind generation capacity, and Ameren Missouri may still choose not to add wind resources for other reasons, [] it is important that wind resources be appropriately modeled so that Ameren Missouri has access to all relevant facts when it makes its decisions.³³

Because Ameren Missouri did not appropriately model its wind resources in this manner, the Commission determined that Ameren Missouri's wind resource analysis was deficient. KCPL also appears to have only modeled renewable energy to meet new capacity needs and not as a potential replacement for existing nonrenewable plant capacity. Thus, KCPL's 2012 IRP is also likely deficient for the same reasons as Ameren Missouri's 2011 IRP.

³² Ameren 2011 IRP, Report and Order, File No. EO-2012-0357, at 21.

³³ Ameren 2011 IRP, Report and Order, File No. EO-2012-0357, at 22.

In addition, it is not clear that KCPL has complied with 4 CSR 240-22.060(3)(A)(2). This rule requires the utility to include an alternative resource plan that “utilize[s] only renewable energy resources, up to the maximum potential capacity³⁴ of renewable resources **in each year** of the planning horizon” [emphasis added]. KCPL’s ABEK6 plan was developed to meet this requirement.³⁵ However, this plan cannot be reasonably construed to equal “maximum achievable” which the rules define as the “hypothetical upper-boundary of achievable potential, because the rules presume conditions that are ideal and are not typically observed.”³⁶ This is so because ABEK6 consists of only 800 MW of wind and 20 MW of solar over the next 20 years, but only in a few very discrete years, contrary to the requirement to analyze achievable RE in “each year.” Renewable resources are expected to be operational in accordance with the following schedule:

Table 18: Alternative Resource Plan ABEK6

Year	CT's (MW)	Solar (MW)	Doubling Wind (MW)	DSM A (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			89		4,492
2013	-			89		4,553
2014	-			169		4,609
2015	-			185		4,602
2016	-		200	195	334	4,233
2017	-			213		4,233
2018	-	11		201		4,233
2019	-			223		4,233
2020	-		400	242		4,233
2021	-	6		215		4,233
2022	-			279		4,233
2023	-	3	200	295		4,233
2024	-			312		4,177
2025	154			328		4,177
2026	-			346		4,177
2027	-			363		4,177
2028	-			380		4,177
2029	-			397		4,177
2030	154			415		4,177
2031	-			433		4,177

Based on this schedule, KCP&L inexplicably presumes there is zero potential for new wind resources in 2012–2015, 2017–2019, 2021–2022 and 2024–2031. Similarly, KCP&L presumes there is zero potential for new photovoltaic resources in 2012–2017, 2019–2020, 2022 and 2024–2031. There is no explanation for why this presumption was made. Since the definition of maximum achievable presumes ideal development conditions, KCPL is obligated to assess renewable energy potential *in each year* of the planning period under ideal conditions or at least

³⁴ KCPL defines renewable energy to include buying wind and solar through power purchase agreements, renewable energy credits purchases, or utility ownership

³⁵ KCPL 2012 IRP Filing, Volume 6, File No. EO-2012-0323, Item No. 3, at 11.

³⁶ 4 CSR 240-22.020 (40).

explain why such an analysis has been omitted. KCP&L has provided neither the analysis or the explanation for its absence.

Further, even in this “maximum potential capacity” renewable energy plan, KCPL proposes to bring 154 MW of new combustion turbine power online in 2025 and an additional 154 MW in 2030. It is possible, though not clear from the documents, that these CT plants are intended to fill in capacity gaps created by wind variability, along the lines of what Ameren Missouri included in its 2011 IRP (i.e., a coupling of wind and gas to maintain reliability). However, this does not appear to be the case because the timing of the CT plants does not match the timing of the solar and wind additions. In fact, the second CT plant would only come online seven years after the last wind and solar additions. If the CT plants are not meant to address wind or solar variability, then it is unclear why the capacity filled by new CT plants is not filled instead (at least in part) by wind or solar in a scenario that is explicitly meant to represent KCPL’s “maximum potential capacity” for renewable energy. Clearly it is not plausible that zero potential for new renewable resources exists for a full 7 years leading up to the second CT, especially considering the large price declines many have forecasted for solar PV in the next decade.

Conclusion

The Commission’s stated policy goal under 4 CSR 240-22 is to set a minimum set of standards to govern the scope and objectives of jurisdictional utilities’ resource planning processes in order to ensure the public’s interest is adequately served. Unfortunately, KCP&L’s plan falls short of the Commission’s standards.

NRDC concludes that KCP&L’s planning processes are deficient in a number of important areas. The most significant deficiency is that KCP&L failed to evaluate DSM and renewable energy resources on an equivalent basis with traditional supply side resources. Additional deficiencies include instances where KCP&L:

- Substitutes simple, unsupported assertions for analysis.
- Uses outdated research
- Describes research that is underway or anticipated in the future, or
- Simply suggests that current, unsupported assumptions may change as a result of the outcome of the future research.

As a result of these deficiencies, the amount of energy efficiency included in the company’s preferred plan (AGEK9) represents a small portion of the cost-effective

potential. Due to these numerous deficiencies, NRDC recommends that the Commission:

- Conclude that KCP&L's IRP is incomplete,
- Order KCP&L to complete the essential research necessary to fulfill the letter and spirit of the rules, and;
- Re-file a revised and improved Integrated Resource Plan

In NRDC's opinion, the analyses required under 4 CSR 240-22 are the heart and soul of the planning rules, and to approve a plan that lacks the basic analysis would be to render the rules meaningless.