

**COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION**

In the Matter of:

**JOINT APPLICATION OF LOUISVILLE GAS)
AND ELECTRIC COMPANY AND KENTUCKY)
UTILITIES COMPANY FOR REVIEW,)
MODIFICATION, AND CONTINUATION OF) CASE NO. 2014-00003
EXISTING, AND ADDITION OF NEW,)
DEMAND-SIDE MANAGEMENT AND ENERGY)
EFFICIENCY PROGRAMS)**

WALLACE MCMULLEN AND SIERRA CLUB'S POST-HEARING BRIEF

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I. INTRODUCTION

Louisville Gas and Electric Company and Kentucky Utilities Company (“LG&E” and “KU,” respectively, and “the Companies,” collectively) propose a plan to offer energy efficiency (“EE”) and demand-side management (“DSM”) programs to residential and commercial customers during the next four years (“DSM/EE Plan” or “the Plan”),¹ a critical window of time for developing these important energy resources in Kentucky. Despite the substantial benefits that the Companies’ current DSM/EE resources provide to customers and the utility system, LG&E and KU seek to let four programs expire and implement certain program changes by shifting, rather than expanding, program budgets. The Companies also fail to provide any opportunity for industrial customers to participate in DSM/EE programs. As a result, the Companies project virtually no growth in annual energy savings during the Plan’s four-year term.

The proposed flat growth in savings, and the Companies’ Plan more generally, is driven by flawed analyses concerning the cost effectiveness and savings potential of DSM/EE resources, and the wholesale exclusion of industrial DSM/EE resources. To address these deficiencies, and as discussed in detail below, the Commission should direct the Companies to correct their analyses going forward. The Commission should also ensure the reasonableness of the Plan by approving it subject to certain conditions, including the continuation of the programs that are set to expire, enhanced program budgets, and future development of industrial offerings.

¹ The proposed DSM/EE Plan is Exhibit MEH-1 to Mr. Hornung’s direct testimony.

II. FACTUAL BACKGROUND

A. The Companies' Proposed DSM/EE Plan

LG&E and KU propose to offer eleven programs during a four-year period, 2015-2018. The Companies seek to modify five existing programs;² maintain five others; and deploy Advanced Metering Systems (“AMS”).³ (Application at 8). The Companies also plan to let four programs expire at the end of 2014. (*Id.* at 9). The Plan does not include any DSM/EE measure available to industrial customers. In his testimony, Sierra Club witness Tim Woolf summarized the Plan as follows:⁴

Table 1. Summary of Proposed Program Budgets, Energy Savings, and Changes in 2015-2018 DSM/EE Plan.

Sector	Program	Four-Year Budget		Four-Year Savings		Proposed Change
		(\$000)	(% of Total)	(GWh)	(% of Total)	
Res.	High Efficiency Lighting	0	0%	0	0%	Expire
Res.	New Construction	0	0%	0	0%	Expire
Res. & Com.	HVAC tune-up	0	0%	0	0%	Expire
Res.	Dealer Referral Network	0	0%	0	0%	Expire
Res.	Incentives Program	16,422	9%	101	13%	Modify
Res.	Conservation Program	9,156	5%	21	3%	Modify
Res.	Smart Energy Profile	13,555	8%	426	54%	No change
Res.	Load Management	56,007	31%	11	1%	No change
Res.	Refrigerator Removal	8,466	5%	30	4%	No change
Low-Inc.	Low Income/WeCare	25,539	14%	30	4%	No change
Com.	Load Management	8,244	5%	30 (MW)	N/A	Modify
Com.	Conservation/ Incentive	13,538	8%	173	22%	Modify
Com. & Res.	Customer Education	16,643	9%	N/A	N/A	Modify
Com. & Res.	Advanced Metering Systems	5,709	3%	N/A	N/A	New
Com. & Res.	Development & Admin.	5,788	3%	N/A	N/A	No change
All of Above	Totals	179,067	100%	792	100%	---

² One of these programs, Customer Education and Public Information, is approved through 2014 and the Companies propose to extend it through 2018. (Application at 8).

³ Sierra Club does not address the AMS proposal in this brief but notes that any investment in AMS should be in addition to, not in lieu of, DSM/EE program investments.

⁴ (Woolf Dir. at 6). Mr. Woolf's table has been edited to reflect the availability of the HVAC tune-up program to both residential and commercial customers.

The Companies project that the Plan will save approximately 792 gigawatt-hours (“GWh”) and 232 megawatts (“MW”) in total by 2018. (Hornung Dir. at 13).⁵ The annual savings of the Plan are roughly the same from year to year. (*Id.*). The Companies’ analysis indicates that the proposed programs are cost-effective under the participant, utility cost and total resource cost (“TRC”) tests. (Hornung Dir. at 12). The Companies project a monthly bill increase of \$0.29 for residential electric customers using one megawatt-hour (“MWh”) of energy per month. (Application at 12).

B. The Companies’ Potential Study and Program Review.

The Companies’ proposal is driven in part by a December 2013 energy efficiency potential study (“EE Potential Study” or “Study”), which is presented as Exhibit MEH-3 to Mr. Hornung’s direct testimony.⁶ In 2012, the Commission ordered the Companies to commission a potential or market characterization study “to be used to help plan programs that capture savings where potential is greatest and/or most cost-effective.”⁷ The Companies commissioned The Cadmus Group, Inc. (“Cadmus”) to conduct the Study. (Application at 6-7; Exhibit MEH-3).

Relying on the Companies’ inputs, Cadmus assessed the efficiency potential in the residential and commercial sectors. (Application at 7; Exhibit MEH-3, p.1). At the Companies’ direction, Cadmus did not assess potential efficiency savings in the industrial sector. (Hearing Video at 10:15:10 - 10:15:54). Cadmus’s analysis was “based solely on proven, commercially available technologies and current market costs.” (Exhibit MEH-3, p. 8).

⁵ The Companies also project roughly 10.4 million ccf in gas savings. In this brief, Sierra Club focuses on electric DSM/EE.

⁶ All references to exhibits beginning “Exhibit MEH” refer to an exhibit to Mr. Hornung’s direct testimony.

⁷ *In the Matter of: Joint Application of Louisville Gas and Electric Company and Kentucky Utilities Company for a Certificate of Public Convenience and Necessity and Site Compatibility Certificate for the Construction of a Combined Cycle Combustion Turbine at the Cane Run Generating Station and the Purchase of Existing Simple Cycle Combustion Turbine Facilities from Bluegrass Generation Company, LLC in LaGrange, Kentucky*, Case No. 2011- 00375, Order at 17-18 (May 3, 2012).

The Study concluded that the Companies are “currently on track to exhaust their achievable energy-efficiency potential by 2018.” (Application at 7).⁸ Cadmus found a range of 941 to 1,478 GWh of achievable electricity savings, representing 3.9% to 6.1% of retail sales in 2033. (Exhibit MEH-3, p. 5). This achievable range is significantly lower than the 10%-by-2030 energy savings target for Kentucky in the U.S. Environmental Protection Agency’s (“EPA”) proposed rule limiting greenhouse gas (“GHG”)⁹ emissions from existing fossil fuel-burning power plants (the “Clean Power Plan”), 79 Fed. Reg. 34,830, 34,873 (June 18, 2014). (Hearing Video at 15:44:56 - 15:45:35).

The Companies also commissioned Cadmus to perform a DSM Program Review. (Application at 7; Exhibit MEH-2). The Program Review analyzed the Companies’ existing programs and developed recommendations for modifying or ending certain programs. (Application at 7).

C. The Industrial Survey

The industrial sector comprises approximately 30% of the Companies’ annual energy sales. (Sierra Club Hearing Exhibit 1, A-17(b)). The Companies do not offer, nor do they have any plans to offer, DSM/EE programs to their industrial customers. (*Id.* at A-17(e)). The Companies also did not study the efficiency potential in the industrial customer sector. (*Id.*).

In 2012, the Companies conducted a survey of roughly 300 industrial customers, which represents approximately 10% of total industrial customers. (Sierra Club Hearing Exhibit 2; LG&E and KU’s Response to Sierra Club DR 2-7(d)). The third question of the survey asked customers whether they would participate in an industrial efficiency program and pay the DSM

⁸ The Study concluded that the Companies are on track to exhaust their potential by 2020, but the Company revised this projection to 2018 after accounting for 2013 actual program performance. (LG&E and KU’s Response to Sierra Club’s DR 1-11, Woolf Dir. at Exhibit TW-2).

⁹ For the purposes of this brief, the terms “GHG” and “carbon” are used interchangeably.

charge if a program were offered, or opt out of participating in and paying for the program. (Sierra Club Hearing Exhibit 2). The responses to this question were as follows: 3% of respondents said they would definitely participate; 30% said they would probably participate; 8% said they would definitely opt out; 13% said they would probably opt out; and 45% said they might or might not participate. (*Id.*).

D. Sierra Club's Testimony

Sierra Club submitted the testimony of Tim Woolf, Vice President at Synapse Energy Economics and former commissioner at the Massachusetts Department of Public Utilities. Mr. Woolf concluded that the Companies' existing programs are highly cost-effective and provide significant benefits to customers. (Woolf Dir. at 3). Mr. Woolf explained that the Companies' proposed DSM portfolio is expected to reduce TRC costs (*i.e.*, participant and utility costs) by \$327 million and utility system costs by \$330 million. (*Id.* at 12).

With respect to the proposed Plan, Mr. Woolf determined that the Companies understated the benefits of DSM/EE because they failed to include (i) the avoided costs of complying with environmental regulations addressing GHG emissions and (ii) participant non-energy benefits in their cost-effectiveness testing. (*Id.*). Mr. Woolf found that the EE Potential Study's conclusion that the achievable potential will be exhausted in 2018 is "unfounded and erroneous," (*id.* at 44), and that the Study and DSM Program Review suffer from several limitations. (*Id.* at 41-47). Mr. Woolf also concluded that the Companies are missing opportunities to achieve a significant amount of cost-effective savings by not evaluating and developing industrial efficiency programs. (*Id.* at 4).

Mr. Woolf recommended that the Commission approve the Plan if the Companies make certain changes to address the deficiencies he identified. (*Id.* at 4-5). Specifically, he

recommended that the Companies’ continue to offer the expiring programs; expand program budgets to support the proposed program modifications and serve key customer groups, including low-income households; develop an industrial offering; and improve program delivery designs. (*Id.* at 4-5). Mr. Woolf also recommended that the Commission direct the Companies to improve their methodologies and assumptions regarding their cost-effectiveness and potential analyses for future DSM/EE filings. (*Id.* at 5).

III. LEGAL STANDARD

The Commission has “exclusive jurisdiction over the regulation of rates and service of utilities.” KRS § 278.040(2). Demand-side management plans are governed by KRS § 278.285 (“the DSM Statute”). This statute authorizes the Commission to review and approve DSM plans and cost recovery mechanisms that are proposed by jurisdictional utilities. The Commission may approve a plan in whole or in part. In examining a proposed DSM plan, the Commission “may determine the reasonableness of [the plan].” KRS § 278.285(1). The DSM Statute outlines a non-exclusive list of factors for the Commission to consider in making its reasonableness determination.¹⁰ It provides:

- (1) The commission may determine the reasonableness of demand-side management plans proposed by any utility under its jurisdiction. Factors to be considered in this determination include, *but are not limited to*, the following:
...
- (b) The cost and benefit analysis and other justification for specific demand-side management programs and measures included in a utility's proposed plan;
...
- (d) Whether a utility’s proposed demand-side management programs are consistent with its most recent long-range integrated resource plan;
- (e) Whether the plan results in any unreasonable prejudice or disadvantage to any class of customers;
...

¹⁰ However, in the case of home energy assistance programs, the Commission must only utilize the criteria set forth in subsections (1)(f) and (3) of the DSM statute. KRS § 278.285(4).

(g) The extent to which the plan provides programs which are available, affordable, and useful to all customers...

KRS § 278.285(1) (emphasis added).

The Commission may direct a jurisdictional utility to explore or improve its analysis of DSM/EE resources. In a 2011 CPCN proceeding, for example, the Commission ordered the Companies to investigate the potential for DSM in their service territories by conducting a market potential study.¹¹ Indeed, the Companies' proposed DSM/EE Plan is based in large part on the study that the Companies conducted per the Commission's order.

The Commission can also reject a program proposal as unreasonable and approve a modified version to ensure reasonableness. In 2001, the Commission rejected an LG&E efficiency program as proposed and approved a modified version.¹² In that case, LG&E, along with other organizations, proposed a Home Energy Assistance Program ("HEA"). The proposal contained multiple flaws; but with the winter heating season approaching, the Commission recognized the urgency of having an energy assistance program in place. The Commission denied the application as filed and approved a modified program, subject to LG&E's agreement to match ratepayer contributions. In response to a party's argument that the Commission lacks the authority to propose a modified program once the proposed program is rejected, the Commission concluded that "we do not share his opinion.. The Commission is empowered with exclusive jurisdiction over the rates and service of utilities."¹³

¹¹ *Supra* note 7.

¹² *In Re Joint Application of Louisville Gas and Electric Company, Metro Human Needs Alliance, People Organized and Working for Energy Reform, Kentucky Association for Community Action, and Jefferson County Government for the Establishment of a Home Energy Assistance Program*, Case No. 2001-00323, Order at 22-25, 28 (Dec. 27, 2001), revised after rehearing by Order, (Jan. 29, 2002).

¹³ *Id.* at Jan. 29, 2012 Order at 4.

The DSM Statute also contains an “opt out” provision whereby certain individual industrial customers can choose to implement their own DSM programs as an alternative to a utility offerings. The provision states:

The commission shall allow individual industrial customers with energy intensive processes to implement cost-effective energy efficiency measures in lieu of measures approved as part of the utility's demand-side management programs if the alternative measures by these customers are not subsidized by other customer classes. Such individual industrial customers shall not be assigned the cost of demand-side management programs.

KRS § 278.285(3).

IV. **ARGUMENT**

A. The Companies’ Proposed Plan Heads in the Wrong Direction by Flattening the Growth of Cost-Effective DSM/EE Resources.

“Dollar for dollar, energy efficiency is one of the best energy investments Kentucky can make.” (Woolf Dir. at 9).¹⁴ As Mr. Woolf explained, energy efficiency and other DSM resources provide substantial benefits to customers and the utility system. (*Id.* at 8). Cost-effective energy efficiency programs reduce customer energy use and can defer or eliminate the need for power plants. (*Id.*). The result is lower electric bills not only for the customers that participate in DSM/EE programs, but for all customers due to lower overall system costs. (*See id.* at 21). Indeed, for every dollar that the Companies spend on DSM/EE, the Companies project they will save roughly three dollars in reduced system-wide electric costs. (Woolf Dir. at 47). DSM/EE resources also reduce utility risk associated with fuel prices and power plant costs; lower the costs of complying with current and future environmental regulations; and help low-income customers with high energy bills. (*Id.* at 8).

¹⁴ Quoting Gov. Steven Beshear, *Intelligent Energy Choices for Kentucky's Future: Kentucky's 7-Point Strategy for Energy Independence*, p. 15 (Nov. 2008), http://energy.ky.gov/Documents/Final_Energy_Strategy.pdf.

Recognizing the benefits of these low-cost resources, “[t]he Commission has repeatedly expressed its clear policy to promote greater development and deployment of DSM/EE programs.” (Application at 6). The Commission has observed that “conservation, energy efficiency and DSM, generally, will become more important and cost-effective as there will likely be more constraints placed upon utilities whose main source of supply is coal-based generation.” (*Id.*)¹⁵ EPA’s issuance of the proposed Clean Power Plan underscores the importance of DSM/EE resources. As discussed during the hearing, one of the plan’s four building blocks is demand-side energy efficiency. (Hearing Video at 15:44:56 - 15:45:06:). For Kentucky, EPA estimates an energy savings target of 1.5% of sales per year, totaling 10% cumulative savings by 2030. (*Id.* at 15:45:07 - 15:45:20).

In recent years, the Companies have made substantial progress growing their DSM/EE resources. The Companies’ annual energy savings, which remained in the single digits (in gigawatt hours, or GWh) through 2008, grew to 167 GWh in 2013 (through November), or 0.555% of retail sales. (Sierra Club Exhibit 3).¹⁶ To put this in perspective, the 2013 savings comprise roughly 25% of the savings the Companies have achieved since they began offering DSM/EE programs roughly 20 years ago in 1994. (*See id.* and Application at 4-5). This progress must continue, particularly as the Commonwealth plans its strategy to comply with the Clean Power Plan.

However, the Companies’ proposal does not continue this trend in increasing annual savings and growing DSM/EE resources. The DSM/EE Plan reflects flat incremental energy savings during its four-year span. As Mr. Hornung explained in his direct testimony, the

¹⁵ Quoting *In the Matter of: Application of Meade County Rural Electric Cooperative Corporation to Adjust Electric Rates*, Case No. 2010-00222, Order at 15 (Feb. 17, 2011); *see also* Woolf Dir. at 10.

¹⁶ All exhibit numbers reflect the numbering provided in the Exhibit List Report provided in the Commission Filings Division’s Notice of Filing at p. 18/77 (Sept. 16, 2014), KY PSC Case No. 2014-0003.

Companies expect to save 196 – 200 GWh each year of the plan, which translates to saving 0.574 – 0.579% of retail sales each year. (Hornung Dir. at 13; Sierra Club Hearing Exhibit 4). Thus, the annual savings during each of the four years of the Plan are roughly the same, increasing by only 4 GWh, or .002% of retail sales, from 2015 to 2018. (*Id.*; Hearing Video at 16:40:38 - 16:40:47). Moreover, the projected annual savings are roughly the same as the Companies' 2013 results. (*Id.* at 16:40:54 - 16:41:03). At a time when Kentucky utilities should be ramping up their DSM/EE efforts, the Companies are pursuing a flat-growth strategy that leaves low-cost energy savings on the table.

B. The Companies Underestimate the Value of Energy Efficiency in their Cost-Effectiveness Analysis by Ignoring Reasonably Foreseeable Carbon Compliance Costs and Non-Energy Benefits.

The Companies' stagnant incremental savings projections and underinvestment in DSM/EE resources can be traced, at least in part, to LG&E and KU's undervaluing of those resources in the cost effectiveness analysis. Cost-effectiveness testing is a critical component of the Companies' DSM/EE planning and development, including their EE Potential Study and DSM Program Review. (Woolf Dir. at 13). In his testimony, Mr. Woolf identified two types of benefits that the Companies ignored in their cost effectiveness analysis, leading them to undervalue DSM/EE resources — (i) the avoided costs of complying with environmental regulations addressing carbon emissions and (ii) participant non-energy benefits. (Woolf Dir. at 12). In addition, the Companies' exclusive focus on capacity savings raises concerns about the Companies' understanding of the energy savings benefits that energy efficiency resources provide.

The Companies' analysis fails to fully capture the benefits of DSM/EE, calling into question the Companies' decision to let certain programs expire and modify programs without

increasing budgets or savings projections. The deficiencies in the cost effectiveness analysis, if not cured, will lead the Companies to continue to underestimate their efficiency potential and develop DSM/EE programs and budgets that forego cost-effective energy efficiency opportunities. As such, the Commission should direct the Companies to correct these deficiencies.

1. Energy efficiency helps customers save energy.

As the name implies, one of the central benefits of energy efficiency programs is that they help customers use less energy to power their homes and business, which in turn reduces utility costs and saves customers money. Remarkably, the Companies have been reluctant to acknowledge this basic point. For example, when asked whether he would agree that “a properly-designed, cost effective energy efficiency program can reduce electricity usage and thereby save customers money,” Mr. Huff testified that “I don’t think I would necessarily agree directly with that.” (Hearing Video at 10:21:24 - 10:21:42).¹⁷ Similarly, Mr. Hornung testified on rebuttal that “[t]he primary, if not sole, savings realized by the Companies, and thus passed on to their customers, is the delay of constructing new facilities.” (Hornung Reb. at 12).

The Companies are correct that DSM/EE resources can delay and defer generation and Sierra Club commends the Companies for their efforts to seek to defer costly generation. However, LG&E and KU’s apparent resistance to the fact that energy efficiency helps customers save energy suggests an overly narrow view of efficiency resources that contributes to the undervaluing of DSM/EE resources.

¹⁷ Mr. Huff went on to explain that the focus of the Companies’ programs are “capacity-based programs [that] focus “solely and mainly on the delay of future capacity and the build of future capacity and generating capacity” and that energy savings are “not the primary purpose of a DSM program,” though he eventually conceded that “some measures do reduce energy.” (*Id.* at 10:21:43 – 10:22:46).

2. The Companies' failure to adequately account for carbon costs in their avoided energy cost estimate reflects a fundamental misunderstanding of the value of DSM/EE resources.

DSM/EE resources can reduce costs to comply with pollution control standards, which the Companies incur and pass on to their customers. (Hearing Video at 16:49:32-16:49:35; Woolf Dir. at 14). The Companies included various costs for complying with current environmental regulations in their cost-effectiveness analysis. For example, the Companies included a price for sulfur dioxide (SO₂), nitrous oxide (NO_x) and seasonal ozone as part of their avoided energy cost calculation. (Sierra Club Hearing Exhibit 5 at A-12(b)(vii), (viii)). However, the Companies did not include a carbon price. (*Id.* at A-12(b)(vi)). As the Companies stated in discovery, “[t]he carbon price imbedded within the avoided energy costs is \$0.” (*Id.*).

The Companies erred in failing to account for carbon costs in their avoided energy costs. Carbon regulation is reasonably anticipated. As discussed throughout the hearing, EPA issued its proposed rule limiting carbon emissions from fossil fuel-fired existing power plants while this case was pending and is “an example of a future environmental regulation that will have costs on a utility system for many years during the study period when these [DSM/EE] programs are being evaluated for cost effectiveness.” (Hearing Video at 14:42:02 - 14:42:16). Uncertainty regarding the magnitude of these future costs does not mean that the costs should be ignored by assuming a price of \$0, as the Companies have done in their avoided energy cost calculations. (Woolf at 15).

The Companies' use of a zero carbon price is inconsistent with their use carbon prices in IRP and CPCN dockets. (*Id.*; Hearing Video at 17:03:23 - 17:03:34). The Companies distinguish their treatment of DSM/EE by asserting that there will be no carbon price “for the entire life of the Proposed DSM/EE Program Plan.” (Hornung Reb. at 2-3; *see also* Hearing Video at 17:05:13

- 17:05:29). Because the proposed DSM/EE Plan runs through 2018 and carbon pricing would not occur before then, the Companies argue that “[n]o net benefits are foregone by waiting.” (Hornung Reb. at 4) (emphasis in original).

The Companies’ flawed position reflects a fundamental misunderstanding of the value of DSM/EE resources. While the four-year term of the proposed DSM/EE Plan ends in 2018, many of the efficiency measures that are put in place during the next four years will last 10, 15, 20 or more years into the future. The Companies’ EE Potential Study makes this clear. Appendix F of the Study provides the “measure life”¹⁸ of each measure considered. (Exhibit MEH-3, Appendix F, F-1). The measure lives for residential and commercial electric measures appear to range from 2 – 40 years. (*Id.* at Appendix F). Just as a power plant has a life well beyond the year in which it begins operation, DSM/EE measures last well beyond the year in which they are installed, often saving customers energy and reducing system costs for decades to come. (*See* Hearing Video at 17:09:46 - 17:10:04) (Hornung testifying, “There are measures that we have incorporated within our programming that extend beyond 2018, yes. [Q.] And they can extend years beyond 2018, would you agree with me? [A.] That is correct, yes.”).¹⁹

The Companies assert that their DSM/EE analysis has been “affected by the potential for GHG emission costs” (Hornung Reb. at 2) because the avoided capacity cost reflects a natural gas unit that was selected in an analysis that included scenarios in which GHG emission costs were assumed. (*Id.*). This indirect impact is insufficient to capture the full value of avoided GHG emissions because it does not account for the avoided energy costs, and is inconsistent with the Companies’ methodology for accounting for avoided SO₂ and NO_x costs.

¹⁸ “Measure life” is the “[e]xpected life of [the] measure.” (Exhibit MEH-3, Appendix F, F-1).

¹⁹ The Companies’ attempt to distinguish DSM/EE resources from power plants on the basis of maintenance is unavailing. (Hearing Video at 17:10:30 - 17:11:47). Both resources require maintenance. That is not the point. Measure life captures the *expected* life of the measure. (*Id.* at 17:11:05 – 17:11:18).

For these reasons, the Commission should reject the Companies' "wait and see" approach to carbon regulation and direct the Companies to include an estimate of cost for carbon in the energy component of its cost effectiveness analysis for DSM/EE resources.

3. The Companies fail to account for the non-energy benefits that DSM/EE provides to their customers.

In addition to substantial energy benefits, DSM/EE resources provide a wide range of non-energy benefits to customers, utilities and society at large. (Woolf Dir. at 17-18). With respect to customers, for example, DSM/EE programs save water and other fuels (such as gas or oil), increase the comfort of homes or businesses, and improve productivity. (*Id.* at 18). These benefits are especially significant for low-income customers. (*Id.*). Utility non-energy benefits include indirect impacts savings, such as impacts associated with financial accounting, customer service, and safety. (*Id.*)

In his testimony, Mr. Woolf explained that accounting for participant non-energy benefits is especially important when using the TRC cost effectiveness test because this test is intended to measure the costs and benefits of a DSM/EE program to the utility and customer. (*Id.* at 19). If participant non-energy benefits are ignored, the TRC test will produce results that are skewed against energy efficiency resources. (*Id.*). Mr. Woolf further explained that while accounting for non-energy benefits currently is a minority position among the states, many energy efficiency experts recommend consideration of non-energy benefits. (Hearing Video at 14:54 – 14:55; *see also* Woolf Dir. at 19).

Despite their emphasis on the TRC test, the Companies did not include participant non-energy benefits in their cost-effectiveness analysis. (Woolf Dir. at Exhibit TW-2, LG&E and KU Response to Sierra Club DR 2- 3(d)). As the Companies noted, there is some uncertainty regarding the magnitude of the some of these benefits. However, as in the case of carbon

compliance costs, assuming a value of zero grossly undervalues energy efficiency. The Companies should incorporate non-energy benefits in their cost-effectiveness analysis.

- a. *The Commission has authority to consider non-energy benefits when evaluating the reasonableness of the provision of DSM/EE resources.*

The Companies contend that the Commission lacks authority to consider non-energy benefits or to require the Companies to do so. (Conroy Reb. at 2). The Commission should reject this flawed argument.

The DSM Statute authorizes the Commission to review and approve utility DSM/EE plans. The Commission “may determine the reasonableness of [the plan].” KRS. § 278.285(1). The statute outlines a non-exhaustive list of factors for the Commission to consider in making its reasonableness determination. *Id.* at § 278.285(1)(a)-(h). Although non-energy benefits are not expressly listed as a factor to consider, the statute provides that the Commission is not barred from considering additional factors. The statute provides that the “[f]actors to be considered in this determination include, *but are not limited to*, the following.” *Id.* (emphasis added). In discussing the legislation that created § 278.285, the Commission explained that “[t]he specified factors are not exclusive but may be supplemented by the Commission in its discretion to meet the facts and circumstances of particular proposals.” *In the Matter of: Investigation into the Feasibility of Implementing Demand-Side Management Cost Recovery and Incentive Mechanisms*, Administrative Case No. 341, Order at 6 (Ky. P.S.C. July 14, 1994).

Moreover, KRS. § 278.285(1)(b) requires the Commission to consider the “cost and benefit analysis and other justification for specific demand-side management programs and measures included in a utility’s proposed plan.” KRS § 278.285(1)(b). In addressing this factor, the Commission may consider the degree to which non-energy benefits are captured in a utility’s “cost and benefit analysis.”

In his rebuttal testimony, Mr. Conroy cites two cases in a footnote – *Enviro Power, LLC v. Public Service Commission of Kentucky*, 2007 WL 289328 (Ky. Ct. App. 2007) (unpublished opinion) and *South Central Bell Telephone Company v. Utility Regulatory Commission*, 637 S.W.2d 649 (Ky. 1982) – for the proposition that the Commission may not consider non-energy benefits because to do so would exceed its jurisdiction. However, these cases provide no such support.

In *Enviro Power*, the court upheld a Commission order denying an intervention motion. 2007 WL 289328, at 1-3. The court explained that the Commission’s discretion in deciding whether to grant permissive intervention is limited by the two subjects under the Commission’s jurisdiction, utility rates and service. *Id.* at 4. In *South Central Bell*, the court found that the Commission’s issuance of a utility penalty in a rate case exceeded its authority to regulate rates. 637 S.W.2d at 653. Taken together, these cases confirm that the Commission has only those powers conferred by statute.

As discussed above, the DSM Statute explicitly grants the Commission discretion to consider non-listed factors in determining the reasonableness of a DSM Plan and directs the Commission to consider cost-benefit analysis. Thus, the Commission’s authority to consider non-energy benefits is consistent with *EnviroPower* and *South Central Bell* because in the DSM Statute, the Kentucky Legislature granted the Commission the power to undertake such consideration.

Indeed, LG&E has argued for the continuation of a DSM program based solely on non-energy benefits. In Case No. 97-083, LG&E opposed a recommendation that it terminate its Energy Partners program. *In re Joint Application of the Members of the [LG&E DSM] Collaborative for the Review, Modification, and Continuation of the Collaborative, DSM*

Programs and Cost Recovery Mechanism, Case No. 97-083, Order at 11 (Ky. P.S.C. Apr. 27, 1998). In stark contrast to its current position, LG&E argued that the independent evaluation of the program was biased because “it focused on the program’s cost effectiveness rather than the non-quantifiable benefits such as safety and health improvements, reduced uncollectible accounts, and reduced arrearages.” *Id.*²⁰ LG&E maintained that the program was responsible for “important, non-quantifiable benefits and should be continued.” *Id.* at 11-12.²¹

For these reasons, the Companies’ claim that the Commission lacks jurisdiction to consider or require utility consideration of non-energy benefits is without merit and should be rejected.

C. Despite Substantial Customer Interest and Savings Opportunities, the Companies Fail to Offer or Even Study Industrial DSM/EE Programs.

The Companies unreasonably fail to offer any DSM/EE programs to industrial customers, despite evidence that there is substantial interest in such programs. Industrial customers represent nearly 30% of the Companies’ load, (LG&E and KU’s Response to Sierra Club DR 1-17(b)) and, on average, each industrial customer consumes far more energy than a residential customer, enabling the Companies to achieve large energy savings from a relatively small number of industrial customers. A 2007 study from the Governor’s office found opportunities to achieve significant energy savings in the industrial sector through cost-effective energy-efficiency programs. (Woolf Dir. at 36, Exhibit TW-4). Utilities offer energy efficiency programs to industrial customers in order to overcome the same kinds of barriers that exist in other sectors; Mr. Woolf noted, “[s]ome industrial customers may not have the technical expertise or the wherewithal to implement DSM measures on their own, but would be very interested in

²⁰ Available at http://psc.ky.gov/order_vault/orders_1998/199700083_04271998.pdf.

²¹ The Commission terminated the program “based on the lack of cost effectiveness as well as the data collection and organization problems.” *Id.* at 13.

obtaining assistance from the utilities to do so.” (Woolf Dir. at 34). As explained below, LG&E and KU’s 2012 survey confirmed Mr. Woolf’s statement that industrial customers are interested in obtaining financial and technical assistance to implement energy efficiency programs.

Yet in their application, the Companies propose no utility-sponsored efficiency programs to their industrial customers. (Hearing Video at 10:14:57) (“We do not and have not proposed any utility programs for the benefit of the industrial customers.”). The Companies offered three primary reasons for failing to offer efficiency programs to industrial customers: (1) the DSM statute allows industrial customers to opt out; (2) there is insufficient customer interest in industrial DSM programs; and (3) the Companies do not have the technical staff to provide such programs. (Hearing Video at 10:16-10:17). None of these reasons withstands scrutiny. The DSM statute indicates that the legislature intended to authorize utilities to offer efficiency programs to industrial customers, and the most recent survey of industrial customers demonstrates that a significant portion of LG&E and KU’s industrial customers want the Companies to provide efficiency programs.

1. Kentucky’s DSM Statute Contemplates, Rather than Precludes, Industrial Efficiency Programs.

The Companies justify their lack of industrial efficiency programs in part by explaining that KRS § 278.285 allows for certain industrial customers to opt out of utility-run DSM programs. The DSM Statute provides in relevant part that:

(3) The commission shall assign the cost of demand-side management programs only to the class or classes of customers which benefit from the programs. The commission shall allow individual industrial customers with energy intensive processes to implement cost-effective energy efficiency measures in lieu of measures approved as part of the utility's demand-side management programs if the alternative measures by these customers are not subsidized by other customer classes. Such individual industrial customers shall not be assigned the cost of demand-side management programs.

KRS § 278.285(3). Nothing in the statute bars a utility from offering DSM/EE programs to its industrial customers.

In fact, the statute suggests the opposite. An opt-out provision presumes there is something to opt out of. The legislature did not prohibit utilities from offering efficiency programs to industrial customers. Rather, it provided a way for individual energy-intensive industrial customers to implement their own cost-effective energy efficiency measures “in lieu of” measures offered as part of a utility’s DSM programs. The legislature clearly contemplated that utilities could offer energy efficiency programs to industrial customers.²²

LG&E and KU’s insistence that energy efficiency programs are not feasible for the industrial sector cannot be reconciled with the practice of other Kentucky utilities offering energy efficiency programs to industrial customers. For example, Duke Energy Kentucky offers its Smart Saver Custom Energy Efficiency Incentive and Commercial and Industrial High Efficiency Incentive program to both commercial and industrial customers. *See In re Application of Duke Energy Kentucky, Inc. for the Annual Cost Recovery Filing for [DSM]*, Cause No. 2012-00495, Order at 4-5 (Apr. 11, 2013); *see also In re Application of Duke Energy Kentucky, Inc. to Implement a Pilot Nonresidential Smart Saver Custom Energy Efficiency Program*, Cause No. 2011-00471, Order at 1-3 (Apr. 12, 2012). Big Rivers also has offered energy efficiency programs to industrial customers. *See, e.g., In re An Assessment of Kentucky’s Electric Generation, Transmission And Distribution Needs*, Cause No. 2005-00090, Order, Appendix B at 62, 63-64 (Sept. 15, 2005); (Woolf Dir. at 34, n.17).

²² Sierra Club agrees with the Companies that the DSM Statute does not provide for an opt out option for non-residential customers other than “individual industrial customers with energy intensive processes,” (*see* Conroy Reb. at 5) and urges the Commission to reject Wal-Mart Stores East, LP and Sam’s East, Inc.’s request to expand the opt out.

The Companies also contended that the opt-out provision would render program offerings uneconomic because once some customers opt out, others will opt out, leading to what the Companies term a “death spiral” of fewer and fewer customers left to cover the costs of the program. (*E.g.*, Hearing Video at 11:04:15 through 11:05:02). This fear does not reflect the reality of utility-sponsored DSM/EE programs. First, utilities typically do not achieve anywhere close to 100% participation among residential and commercial customers in DSM/EE programs. Efficiency programs may reach a fraction of residential and commercial customers, yet the programs are still cost-effective. (*See generally* Exhibit MEH-1). While the Companies should strive to increase participation rates, the existing residential and commercial programs are cost-effective at relatively low levels of participation. LG&E and KU have only a few thousand industrial customers, yet these few thousand customers represent 30% of the utilities’ entire load. (Sierra Club Hearing Exhibit 1, LG&E and KU Response to Sierra Club DR 1-17(b)). Given the large amount of energy industrial customers consume, participation of just a few industrial customers could be sufficient for offerings cost effective programs.

Second, the Companies correctly note that certain industrial customers have a right to opt out of DSM programs, KRS § 278.285(3), which would limit the total number of customers to whom the Companies could assign the costs of an energy efficiency program. However, the Companies fail to appreciate that the costs of a program go down in proportion to the number of customers it serves. While there are some fixed program costs, there are also variable costs that vary based on the number of customers served. Thus, if some industrial customers opt out of the program, there are fewer customers to pay the charges—but there are also lower costs, because there are fewer customers to serve. (*See* Hearing Video at 15:08:45 - 15:09:15).

2. The Results of the Companies' Own Survey Belie Their Claim of Insufficient Customer Interest.

In addition to using the DSM statute as a shield against calls for industrial efficiency, the Companies point to insufficient customer interest as justification for not offering programs to industrial customers. (Sierra Club Hearing Exhibit 1, LG&E and KU Response to Sierra Club DR 1-17(c)) (“The Companies currently have no plans to offer energy-efficiency programs to the industrial sector as sufficient interest is not present to make programming economical.”). However, the Companies’ most recent survey of industrial companies undermines this assertion.

In 2012, LG&E and KU surveyed more than 300 of their industrial customers, out of a total of slightly more than 3,000 industrial electric customers. (LG&E and KU Response to Sierra Club DR 2-7(d)). The survey described typical utility-sponsored energy efficiency programs for industrial customers, and then asked each respondent to “Please indicate your best estimate of your company's response to a program like this, should it become available.” (Sierra Club Hearing Exhibit 2, LG&E and KU Response to Sierra Club DR 2-8, Attachment at p. 2).

Table 2. Responses to 2012 LG&E and KU Survey of Industrial Customers’ Interest in Participating in Energy Efficiency Programs²³

	Definitely Would Participate	Probably Would Participate	Definitely Would Opt-out	Probably Would Opt-out	Might or Might not Participate
Responses	11	99	28	45	152
% of Responses	3%	30%	8%	13%	45%

Approximately 33% of respondents indicated they would or probably would participate in an energy efficiency program offered by LG&E and KU. A smaller percentage, 21%, indicated they would probably or definitely opt-out. An efficiency program targeting industrial

²³ Tabulation of Responses to Question 3 in Attachment to LG&E and KU’s Response to Sierra Club DR 2-8.

customers can be successful with much less than 33% participation rates. If only some of the undecided respondents decided to participate, 50% of respondents could wind up participating.

In rebuttal testimony, LG&E and KU witness Mr. David Huff grossly misinterpreted the survey results by referring to the “Companies’ survey results indicating that 60% of these customers might not participate in industrial-DSM/EE programs.” (Huff Reb. at 3). Mr. Huff reached this 60% figure by taking the roughly 20% who said they would definitely or probably opt out and adding all of the roughly 40% of respondents who said they might or might not participate. In other words, when faced with 152 respondents who said they were undecided, Mr. Huff simply assumed that all 152 respondents would ultimately decide not to participate in an efficiency program offered by the Companies. Mr. Huff’s assumption has no basis in the survey results or any other evidence. Rather, Mr. Huff’s misinterpretation of the survey results reflects the Companies’ overall approach to energy efficiency for industrial customers—an approach based on ignoring the evidence.

At the hearing, the Companies downplayed the significance of the survey by claiming that the survey is only one data point, and consistently referred to “discussions” with unnamed companies that allegedly support their decision to not offer efficiency programs to industrial customers. (Hearing Video at 10:31:00 - 10:31:12). However, the Companies never offered any record of those alleged conversations into evidence. And when asked at the hearing whether any other surveys of industrial customers exist, the Companies stated that a 2001 survey was apparently destroyed. (Hearing Video at 19:09). The Companies had ample opportunity to supplement the record with any evidence they believe supports their position, but they failed to do so. As a result, the 2012 survey is the only evidence in the record regarding the interest of LG&E and KU’s industrial customers in utility-sponsored energy efficiency programs, and it

shows sufficient customer interest to support a cost-effective program for industrial customers. (Hearing Video at 11:31).

3. The Companies' Current Lack of Technical Expertise Does Not Preclude Industrial Offerings.

At the hearing, the Companies asserted that they do not have staff with the technical expertise to support offering efficiency programs to industrial customers. (Hearing Video at 11:13:05 - 11:13:50). Presumably the Companies did not have the staff to support DSM programs for residential and commercial customers before they began offering such programs. Part of the cost of any DSM program is hiring the staff—directly, or through use of consultants—who can implement the program. In this respect, staffing an energy efficiency program for the industrial sector is no different than staffing it for the commercial or residential sector.

Mr. Woolf explained that the Companies could offer energy efficiency programs to industrial customers “by expanding the Commercial Conservation program to provide tailored services to industrial customers.” (Woolf Dir. at 36). Indeed, Duke Energy Kentucky follows this practice by offering several energy efficiency programs to both commercial and industrial customers. *In re Duke Energy Annual Cost Recovery Filing*, Cause No. 2012-00495 (Apr. 11, 2013) (noting that Duke offers a High Efficiency program and a Smart Saver Custom Energy Efficiency Incentive Program to both commercial and industrial customers). Moreover, the prior, 2011 review of LG&E and KU’s DSM program noted that a best practice utility program comprised a combined commercial and industrial energy efficiency program. (LG&E and KU Responses to KPSC DR 1-24, Attachment at 39).

4. The Companies' Rationale for Excluding Industrial Efficiency from the EE Potential Study Lead to a Self-Fulfilling Prophecy of No Industrial Efficiency.

The Companies did not explore the potential for industrial efficiency programs as part of their study of the potential for energy efficiency in LG&E and KU's service territory. (Sierra Club Hearing Exhibit 1, LG&E and KU's Response to Sierra Club DR 1-17(e)). ("The Companies have not carried out or reviewed any assessment regarding industrial energy-efficiency potential."). The Companies defend their failure to even study the potential for industrial energy efficiency on the grounds that they have no such programs in place. (Hearing Video at 10:15:51). This response is backwards. It assumes that the Companies should study the potential in sectors because they already have programs in that sector in place. On the contrary, potential studies are an important tool to help utilities expand the use of the efficiency resource. (Woolf Dir. at 39).

The Companies' failure to propose or even study any energy efficiency programs for the industrial sector is unreasonable. The Commission should direct the Companies to include the industrial sector in future energy efficiency potential studies. In light of the 2012 survey results and the substantial savings that accrue from industrial efficiency, the Companies should offer industrial customers energy efficiency services. As Mr. Woolf explained, this could be accomplished fairly easily during this period by expanding the Commercial Conservation program to provide tailored services to industrial customer sector in future energy efficiency potential studies. (*Id.* at 36).

D. The Companies' Conclusion That They Will Exhaust Their Achievable Energy Efficiency Savings Potential by 2018 is Flawed.

The Companies' proposal in this case is driven largely by the results of their EE Potential Study. The Study incorporates the Companies' cost effectiveness analysis (specifically TRC test

inputs) and excludes the entire industrial sector at the Companies' direction. (Exhibit MEH-3, p. 1). In addition to the undervaluing of DSM/EE and wholesale exclusion of industrial efficiency, the Companies' EE Potential Study is flawed in two ways that contribute to the erroneous conclusion that LG&E and KU will exhaust the achievable potential in their service territory by 2018 — (i) the cap on incentives improperly limits the achievable potential by ignoring the energy benefits of efficiency and (ii) the Study's use of current cost and technology assumptions for the entire twenty-year period underestimates the achievable potential.

1. The Companies' Cap on Incentives Illustrates a Fundamental Misunderstanding of the Value of Energy Efficiency by Ignoring the Energy Savings that the Programs Achieve.

The EE Potential Study analyzed three types of potential – technical, economic, and achievable – for electricity and natural gas in the residential and commercial sectors.

(Application at 7). Technical potential represents all technically-feasible measures regardless of economics. (Exhibit MEH-3 at 11). It is the largest category of potential. Cadmus derived the economic potential, a subset of technical potential, by screening the efficiency measures in the technical potential category using TRC test. (*Id.* at 20). That is, the economic potential consists of only those measures from the technical potential category that pass the TRC test.

To get to the final level of potential, Cadmus narrowed down the economic potential to what is called “the achievable potential.” Whereas the economic potential consists of all cost-effective measures (according to the TRC test), the achievable potential consists of only those cost effective measures that Cadmus determined to be “reasonably achievable” in the twenty-year study period. (*Id.* at 2, 42). To derive the achievable potential, Cadmus applied assumptions

about whether customers would adopt measures at various incentive levels (0, 50 and 75% of incremental cost²⁴) in an effort to reflect assumed market barriers. (*Id.* at 42).

Based on discussions with the Companies regarding the achievable potential calculation, Cadmus then used an additional screen to derive the achievable potential estimate – the incentives offered to customers were capped at the Companies’ avoided cost of capacity, or \$100-kW-year. (*Id.* at 43; Hearing Video at 17:35:33 – 17:36:42). For most economic measures (*i.e.* those that passed the TRC test), the \$100/kW-year incentive cap meant that the maximum incentive amount assumed covered less than 50% of the measures’ incremental cost. (Exhibit MEH-3, p. 44). This capacity-based cap, which was established for the Commercial Incentives program in Case No. 2007-319, does not “in any way incorporate avoided energy cost.” (Hearing Video at 17:41:26 – 17:41:32).

The cap improperly reduces the achievable potential. The Companies justify the avoided capacity cap on achievable potential on the basis that “[t]he primary, if not sole, savings realized by the Companies, and thus passed on to their customers, is the delay of constructing new facilities.” (Hornung Reb. at 12). However, in their effort to ensure that capacity costs are included in the determination of achievable potential, the Companies disregarded energy savings.

The Companies’ failure to recognize the energy benefits of its programs is especially troubling given that their own cost effectiveness modeling reveals that the largest benefit of efficiency programs is avoided energy costs. Appendix C of the Companies’ DSM/EE Plan contains the results of the cost-effectiveness screening, called the output reports of DSMore, a software package that runs the screening. (Exhibit MEH-1, p. 12). The outputs show that for every energy efficiency program, the largest benefit (in dollar terms) was the avoided electric

²⁴ “Incremental cost” refers to the cost premium for an energy efficiency measure as compared to a standard measure. (*See* Woolf Dir. at 37). For example if an incandescent light bulb costs \$2 and a similar CFL light bulb costs \$3, the incremental cost for the energy-efficiency CFL is \$1.

production, or avoided energy costs. (*See generally id.* at Appendix C). For example, the Commercial Conservation and Rebate program has avoided electric production benefits of \$116,505,022 and avoided electric capacity benefits of \$85,047,250. (*Id.* at Appendix C, C-1; Hearing Video at 17:43:29 – 14:44:06). The Residential Conservation program has avoided electric production benefits of \$10,887,586 and avoided electric capacity benefits of \$5,088,489. (Exhibit MEH-1 at Appendix C, C-2). This pattern holds for each energy efficiency program that produces savings. (*See generally* Hearing Video at 17:43:29 – 17:46:39).

This data makes clear that the Companies’ efficiency programs save energy. The Companies should ensure that they are factoring this substantial benefit into their analysis. The Companies’ in the potential study methodology led the Companies to undervalue the achievable potential and should be cured going forward.

2. The Potential Study Did Not Consider Any Technological Advancements or Market Cost Declines During the 20-Year Study Period.

Cadmus studied the energy efficiency potential in the Companies’ service territories over a twenty-year period, through 2033. (Exhibit MEH-3, p. 1). Yet, the potential analysis was “based solely on proven, commercially available technologies and current market costs.” (*Id.* at 8). As Mr. Woolf explained in his testimony, emerging technologies can make a substantial difference in the amount of future efficiency opportunities, and the costs of efficiency measures decline over time. (Woolf Dir. at 41). The Companies have acknowledged that “[d]eclines in technology costs, the development of new technologies, or the increase in the Companies’ avoided energy and demand costs could provide additional energy savings opportunities in the future,” (*id.* at 42, citing Exhibit TW-5), but the EE Potential Study does not include any adjustment to account for this possibility. Rather than using static technology and cost

assumptions over a twenty-year period, the Companies should incorporate technology advancements and for cost declines over time in their EE Potential Study.

3. The Companies' Flawed Assertion that it will Run Out of Achievable Efficiency Opportunities in the Next Four Years is Belied by the Experience of Industry Leaders.

The culmination of the various flaws in the potential study and underlying analysis – the failure to incorporate carbon in avoided energy costs and non-energy benefits in cost effectiveness testing; the failure to study industrial efficiency potential; the use of an incentive cap based solely on avoided capacity cost in setting the achievable potential; and the decision to limit the scope of the twenty-year study to technologies and market costs as they existed in 2013 – is the flawed conclusion that the Companies will exhaust their achievable potential by 2018.

At the hearing, Mr. Woolf explained that states with long histories of aggressive energy efficiency are still planning to continue savings. Vermont, for example, assumes reductions of 1.5% per year for the next twenty years in its most recently-approved DSM plan. (Hearing Video at 16:11:45 – 16:12:14). The Pacific Northwest region is another example. Although the region has saved roughly 30,000 GWh since 1991, which exceeded the potential estimates identified in the region's 1991 study, (Woolf Dir. at 39), the latest long-term plan concluded that there is the potential for additional efficiency savings of roughly 38,000 GWh. (*Id.*). These examples demonstrate that as technologies evolve and market prices decline, opportunities emerge for more efficiency. While the Companies have ramped up their DSM/EE efforts over the past few years, the notion that they will run out of achievable efficiency in four years should be rejected.

E. The Companies' Decisions to Let Cost-Effective Programs Expire and Implement Limited Modifications without Budget Expansions are Unreasonable.

The inevitable result of a Potential Study that underestimates energy efficiency potential is a proposed program that falls short of the full cost-effective, achievable potential. Rather than

proposing to increase the growth rate of energy savings, the Companies' proposed program would result in no growth in energy savings—at precisely the time when energy efficiency should be ramping up. The Companies' failure to submit a robust proposal that matches the cost-effective, achievable potential is due in part to their decision to end or modify several programs that should be continued.

1. The Commission Should Reject as Unreasonable the Companies' Proposal to Terminate the Residential High Efficiency Lighting and Residential New Construction Programs.

The Companies plan to let several programs expire, including the Residential High Efficiency Lighting Program and the Residential New Construction Program. (Application at 9). The Residential High Efficiency Lighting Program aims to increase the use of compact fluorescent light bulbs ("CFLs"), which are more efficient than traditional incandescent light bulbs. (Hornung Reb. at 7; Exhibit MEH-2 at 17). The program has been very cost-effective, with a TRC cost-benefit ratio of 3.4. (Woolf Dir. at 25). The Companies propose to let the program expire at the end of 2014 "because its goal has been met," and customers "are likely to purchase CFLs absent utility incentives." (Hornung Reb. at 7).

The evidence refutes the Companies' claim, since the overwhelming majority of residential light bulbs used in LG&E and KU's service territories are less efficient incandescent bulbs. Only 20% of light sockets in LG&E residential customers' homes use CFLs; only 15% of light sockets in KU residential customers' homes have CFLs. (LG&E and KU Response to Sierra Club DR 1-15(d)).²⁵ A program with a 15-20% success rate can hardly be described as a program whose "goal has been met." The Companies' proposed termination of this program is

²⁵ These socket saturation rates are for "homes with roughly 40 sockets." (LG&E and KU Response to Sierra Club DR 1-15(d)). The Companies did not provide Sierra Club with data on the socket saturation rate for homes with less than 40 sockets.

unreasonable in light of the ample opportunities that remain to cost-effectively increase the energy efficiency of residential lighting.

The Companies also propose to let the Residential New Construction Program expire at the end of 2014. The Residential New Construction Program offers incentives to build new single and multi-family homes that are more energy efficient. (Exhibit MEH-2 at 19-20). The Companies propose to allow the program to expire at the end of 2014 because “the original objective of the program has been achieved” and because a new state building code will make the program less cost-effective. (Hornung Reb. at 7-8).

Historically, the Residential New Construction Program has been highly cost-effective, with a TRC score of 2.8. (Woolf Direct at 27). Cadmus’s finding that the program can no longer be cost-effective in light of a more stringent building code, (Exhibit MEH-2 at 20), is flawed because Cadmus failed to account for avoided carbon costs and non-energy benefits, which resulted in lower cost-effectiveness scores. If Cadmus had properly accounted for the benefits of the Residential New Construction Program, it would have likely found that the program can continue to be cost-effective. Moreover, it is critical for the Companies to focus on improving the efficiency of new residential homes, since “it is much less expensive to make a building efficient at the time of construction than to retrofit it later.” (Woolf Dir. at 27). For these reasons, the Companies’ proposal to let the Residential New Construction Program expire is unreasonable.

2. The Companies’ Proposal to Modify the Commercial Load Management and Residential Conservation Programs Without Increasing the Budgets to Support the Changes is Unreasonable.

In addition to allowing certain programs to expire, the Companies propose to modify the Commercial Load Management Program and the Residential Conservation Program. The

Commercial Load Management Program offers incentives to commercial customers who agree to reduce their load during certain times, primarily during system peaks and/or when market prices are high. (Exhibit MEH-2 at 29-30). The Commercial Load Management Program scored well on the TRC cost-effectiveness test, with a benefit to cost ratio of 2.27. (Hornung Dir. at 12). For the Commercial Load Management Program, the Companies intend to shift the focus to large commercial customers (Hornung Dir. at 16). While the Companies maintain that “they are not eliminating small commercial customers from this program,” (Hornung Reb. at 9), they “are requesting that going forward in years 2015-2018 that the small commercial installations will be assumed as being zero.” (LG&E and KU Response to AG DR 2-9).

The Companies have not provided a rational basis for ending funding for small commercial customers in a load management program that is cost-effective and has been successful. The record contains no evidence that the Companies must choose between serving large and small commercial customers. Having failed to justify their claim that the program must choose between these customer segments, the Companies’ proposal to end funding for small commercial customers in the Commercial Load Management Program is unreasonable.

Similarly, the Companies propose to modify the Residential Conservation Program to focus on multi-family homes and decrease funding for single-family homes. (Hornung Dir. at 22-23). The Residential Conservation Program provides an energy audit and incentives to implement the recommendations that result from the audit. (*Id.* at 22). With a TRC cost-effectiveness test score of 1.93, the program is cost-effective. (Hornung Dir. at 12). The Companies will now expressly include multi-family units in the program, although the budget will remain the same, (Hornung Reb. at 10), which means that the budget allocated for single-family homes will necessarily decline.

Just as the Companies set up a false choice between large and small commercial customers in the Commercial Load Management Program, the Companies approach the Residential Conservation Program as if they must choose between serving multi-family and single-family homes. But the Companies provided no rational basis for decreasing the budget for single-family homes. The Residential Conservation Program has achieved cost-effective energy savings in single-family homes and those offerings should continue while the Companies add offerings for multi-family homes. (Woolf Dir. at 31). The Companies' proposal to decrease funding for the highly cost-effective portion of the Residential Conservation Program is unreasonable.

F. The Commission Should Direct the Companies to Correct the Deficiencies in their Cost-Effectiveness Analysis and Potential Study, and Approve the Companies' DSM/EE Plan Subject to Certain Conditions.

Based on the foregoing, the Commission should direct the Companies to cure the deficiencies in their analyses going forward. Specifically, the Commission should:

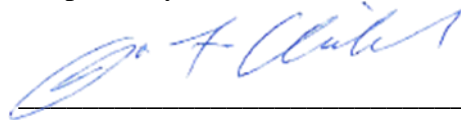
- Direct the Companies to include in their cost-effectiveness analysis: (i) the avoided cost of complying with current and future state and/or federal environmental regulations, including carbon; and (ii) non-energy benefits.
- Direct the Companies to consider the potential for energy efficiency in the industrial sector and emerging technologies, and apply more reasonable approaches to estimate the achievable potential in future potential studies.

The Commission should take the following action with respect to the Companies' proposed DSM/EE Plan to ensure that all components of the Plan as approved are reasonable pursuant to KRS § 275.285:

- Approve continuation of the Residential Load Management; Residential Refrigerator Removal; Smart Energy Profile; Residential Incentives; and Customer Education & Public Information; and Residential Low Income Weatherization / WeCare programs.
- Approve the modified Residential Incentives and Customer Education programs.
- Approve the modified Residential Conservation and Commercial Load Management Program Programs subject to program budgets increases so that:
 - The Residential Conservation Program can serve both multi-family and single-family residences; and
 - The Commercial Load Management Program can serve both large and small commercial customers.
- Reject the Companies' plan to let the Residential High Efficiency Lighting and Residential New Construction programs expire.
- Direct the Companies to consider expanding the budget of the Residential Low Income Weatherization / WeCare Program.
- Direct the Companies to expand the Commercial Conservation program to provide tailored measures and services to industrial customers and analyze industrial efficiency for future DSM/EE plans.

Dated: September 30, 2014

Respectfully submitted,



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CERTIFICATE OF SERVICE

I hereby certify that Sierra Club's September 30, 2014 electronic filing is a true and accurate copy of the Wallace McMullen and Sierra Club's Post-Hearing Brief, to be filed in paper medium; and that on September 30, 2014, the electronic filing has been transmitted to the Commission, and that one copy of the filing will be delivered to the Commission, that no participants have been excused from electronic filing at this time, and electronic mail notification of the electronic filing is provided to the following:

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