

**Department of Economic Development – Division of Energy:**

**Policy Recommendations to Address Electric Utility Regulatory Challenges**

**Table of Contents**

I. Overview .....	2
Background .....	2
Other States’ Initiatives .....	4
Grid Modernization .....	4
Broader Policy Initiatives .....	5
II. Response to Chairman’s Notice .....	7
Rate Case Timing .....	7
Grid Modernization and Performance Incentives .....	9
Low-Income Rates .....	10
III. Rate Cases and Revenue Requirement .....	12
Performance Based Rates .....	12
Test Years .....	13
Revenue Decoupling .....	14
IV. Additional Policy Considerations .....	15
Security and Diversity of Supply .....	15
Missouri Energy Efficiency Investment Act .....	16
Renewable Energy Standard .....	18
Net Metering and Easy Connection Act .....	19
Alternative Financial Instruments for Customers .....	20
Electric Vehicle Charging Stations .....	20
Microgrids .....	22
V. Conclusion .....	23

## **I. Overview**

### Background

The public utility regulatory model developed in the early 20<sup>th</sup> century was premised on the belief that a single vertically integrated electric utility was the most economic means of providing electricity to the public. Under this model, a natural monopoly investing in large, long-lived generation assets and selling as much electricity as possible to the greatest number of people was thought to minimize the per unit cost of electricity production and delivery. The relationship between a utility and its customers hinged on mitigating monopoly power through government oversight in the form of price regulation and strict accounting and operational oversight.

However, more recently, some of the economies of scale underlying the monopoly provision of production and distribution have eroded and growth in new customers has declined. Over the past few decades, significant technological advances and innovation have occurred in energy services and equipment. Rate increases outpacing wage growth, and an increased awareness of the health and environmental impacts associated with heavy reliance and dependence on fossil fuels, have led to customer demand for greater control over how much electricity they consume as well as cleaner and more autonomous sources of energy. Early adopters are already investing in energy efficiency and deploying distributed generation. The resulting stagnant load growth, coupled with increasing costs to the utility, has resulted in a continuing cycle of frequent rate case filings by electric utilities in order to preserve their opportunity to earn an adequate return on investment.

The Comprehensive State Energy Plan (CSEP) recognized that in order to ensure energy reliability and affordability, Missouri's energy supply must be diverse and secure, and its usage must be efficient. In addition to utility progress in these areas, customer access to reliable, clean and affordable energy from non-utility providers plays an important role in increasing diversity and security. However, to realize the full potential of energy efficiency, renewables, and distributed generation, the historical relationships between utilities, customers, and regulators must be reshaped. Under such circumstances, utility cost recovery should be based less on the level of sales and more on facilitating and strengthening consumers' access to, and participation

in, energy efficiency, renewable energy, and distributed generation deployment. The Missouri Division of Energy (“DE”) supports the Public Service Commission’s (“PSC” or “Commission”) effort to identify improvements to the regulatory structure and to consider the need for legislative change. In the absence of meaningful reform, customers will continue to reduce the amount of electricity which they buy from electric companies, requiring utility rates to increase to recover the fixed costs of providing electricity over a smaller volume of sales. In spite of these technological and economic changes, the electrical grid will remain a fundamental part of our state and national infrastructure that must be maintained.

Missouri’s investor-owned telecommunications utilities have been successful over time in adapting to emerging technologies and market change. From an end to end service provider, telecommunications companies experienced transitions related to virtually every aspect of service, including customer premises equipment, directory and information services, long-distance services, and custom calling features and ancillary services. DE anticipates significant changes in the provision of electrical and ancillary energy services over time. As was true for telecommunications, with market evolution comes opportunity. Facilitating electric utilities’ ability to offer new technologies and services will also allow the integrity of the electricity grid to be maintained, assuring its place as a reliable, fundamental piece of our national infrastructure and thereby spurring economic growth, creating jobs, and providing electricity to those who continue to rely on it for basic service.

While certain reforms may require legislative action, there are some actions that the Commission can take under its existing authority to help facilitate changes to the current regulatory model. Though regulators have made modest efforts to reform the regulatory model to align the interests of utilities and customers, utility regulation is not adequately facilitating public utilities’ ability to deliver the technology and service options desired by customers. As electric utility costs continue to rise and prices for technologies such as distributed energy and energy storage continue to fall, it is becoming more economically feasible for customers to produce a portion, if not all, of their own electricity needs. To retain value to such customers, utilities may need to offer new and more advanced services. This document will address both the actions that the Commission can take in the short term to facilitate regulatory reform and the actions that the

legislature can take to ensure that public utilities can continue to deliver what customers need and desire. Ultimately, customer benefits should be the focus of regulatory or legislative change.

### Other States' Initiatives

Best practices for addressing financial barriers to meeting customers' evolving needs are being investigated and addressed across the nation. States including Illinois, Arkansas, Massachusetts, Maryland, California, Minnesota, and New York have developed various approaches to addressing regulatory barriers to satisfying emerging customer demands.

#### *Grid Modernization*

- Illinois's Energy Infrastructure Modernization Act implements formula rates, supports smart grid deployment, and funds programs to support electricity system innovation. It is estimated that over \$2 billion in modern grid investments will be installed over the next four to six years, creating jobs, benefitting customers, and fixing aging infrastructure. Utilities which choose to participate must meet specific performance and investment mandates, with penalties for non-performance.
- Arkansas's Regulatory Reform Act of 2015 provides mechanisms for cost recovery of infrastructure investments. The act authorizes utilities to elect to implement a formula rate-review mechanism using a forward test year, and sets policies for determining a reasonable return on equity, recovery of the allowance for funds used during construction, and cost allocation and rate design. An annual review provides for revenue adjustments, with a cap of four percent.
- In 2014, the Massachusetts Department of Public Utilities issued the "Modernization of the Electric Grid" order. The order requires electric distribution companies to submit a ten-year grid modernization plan outlining how the companies propose to make measurable progress towards the following grid modernization objectives: 1) reducing the effects of outages; 2) optimizing demand, which includes reducing system and customer costs; 3) integrating distributed resources; and 4) improving workforce and asset management. Utilities' modernization plans must include infrastructure and performance

metrics to measure progress in achieving grid modernization objectives.

Approved costs during the first five years of the plan are available for pre-authorization.

- Between 2010 and 2013, the Maryland Public Service Commission approved the utility installation of advanced metering infrastructure (“AMI”) as a part of larger grid modernization efforts. As of 2013, there were approximately 1.6 million new electric and gas meters installed. Cost recovery of these efforts was contingent upon successful deployment and demonstrated cost effectiveness. Utilities were also required to develop customer education programs and cyber security plans associated with their AMI deployment, as well as monitor the costs and benefits of their investments.
- In 2003, the California Public Utility Commission (“CPUC”) adopted a policy that all electric customers should have advanced meters. Currently, advanced meters are in place for all customers whose demand is greater than 200 kW. California was the first state to pass a statewide grid modernization policy, which requires that unreasonable or unnecessary barriers to adoption of a modern grid must be identified and lowered. In September of 2009, the CPUC established an expedited review process for grid modernization funding, and since then the state has aggressively sought federal funding to support modernization efforts.

#### *Broader Policy Initiatives*

- Minnesota, through the “e21 Initiative,” is taking a comprehensive approach towards addressing electric utility regulation through the promotion of renewable energy standards, energy efficiency practices, and performance based ratemaking standards. Through the e21 Initiative, Minnesota prompts investor-owned utilities (“IOUs”) and the Minnesota Public Utilities Commission (“PUC”) to consider modernizing both the electric grid and the regulations that guide utility operations. The e21 Initiative tasks both utilities and the Minnesota PUC to address current and future demands on the grid by: aligning an economically viable utility model with state and federal public policy goals; providing universal access to electricity services (including low-income customers); providing just and competitive rates;

enabling delivery of services and options that customers value; promoting and fairly pricing grid services (including distributed energy resources); assuring system reliability, resiliency, and security while protecting customer privacy; encouraging investments that promote efficiency of the system as a whole; reducing regulatory administrative costs (e.g. fewer rate cases); and facilitating innovation and implementation of new technologies.<sup>1</sup>

- New York initiated a new set of initiatives under the banner “Reforming the Energy Vision” which are slated to have large impacts on the northeast region of the United States. Through public-private partnerships, New York is projected to create large-scale changes. A Clean Energy Fund is being established, aimed to attract private capital in order to reduce the cost of clean energy by accelerating adoption of energy efficiency goods, services, and renewables; the fund is estimated to save customers over \$39 billion dollars over the next decade. The Clean Energy Standard in New York is set to have at least 50 percent of the state’s electricity come from renewable sources. The “NY-Sun” initiative is helping to finance and promote 3,000 megawatts worth of solar energy with a \$13 million commitment targeting low- to moderate-income communities. The “K-Solar” program is designed to assist K-12 schools with investing in and utilizing solar power at reduced costs. The “NY Prize” program is awarding over \$40 million dollars to communities that build their own local energy systems, otherwise known as “microgrids.” “Buildsmart NY” is a state program that aims to cut energy use in state buildings 20 percent by 2020. Finally, the NY Green Bank is working with partners in the finance community to invest over \$1 billion in clean energy technology and projects.<sup>2</sup>

DE has attached files related to the e21 Initiative and the Reforming the Energy Vision initiative as a part of its submission in this docket.

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<sup>1</sup> E21 Working Group. December 2014. “e21 Initiative: Phase I Report – Charting a Path to a 21<sup>st</sup> Century Energy System in Minnesota.”

[http://www.betterenergy.org/sites/www.betterenergy.org/files/e21\\_Initiative\\_Phase\\_I\\_Report\\_2014.pdf](http://www.betterenergy.org/sites/www.betterenergy.org/files/e21_Initiative_Phase_I_Report_2014.pdf)

<sup>2</sup> New York State Energy Office. 2016. “Reforming the Energy Vision”

<https://www.ny.gov/sites/ny.gov/files/atoms/files/REV42616WHATYOUNEEDTOKNOW.pdf>

Current discussions occurring within regional and national organizations regarding these topics should also be noted. One discussion forum that DE has been participating in is the Midwestern Governors Association's ("MGA") series titled, "The New Utility Business Model." MGA has hosted a series of four webinar meetings discussing the current issues with the utility business model, specific state responses, and rate design options to address these issues.<sup>3</sup> The National Governors Association<sup>4,5</sup> and the National Association of State Energy Officials<sup>6,7</sup> have conducted similar discussions.

## **II. Response to Chairman's Notice**

On June 22, 2016, Chairman Hall filed notice of several policy documents ("Notice") related to discussions regarding electric rate case adjustment procedures, grid modernization, and low-income utility rates. DE provides the following comments in response to those policy documents. In principle, it may be reasonable to align the manner in which utilities are compensated in exchange for regulatory or policy initiatives which advance infrastructure updates, system optimization and modernization, energy efficiency, and the deployment of renewables and distributed generation. Such opportunities might include the availability of more predictable rate of return opportunities and adjustments that reduce regulatory lag.

### Rate Case Timing

Electric utility rate cases typically follow an extended timeline, taking as long as the statutory maximum of 11 months to resolve following filing. This leads to lag between the time when assets are placed in service and the time when the costs of those assets are reflected in rates. The farther out from filing that rates take effect, generally, the longer the amount of time over which utilities do not recover a portion of their investment. The extended rate case process

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<sup>3</sup> Midwestern Governors Association. 2016. "New Utility Business Model." <http://www.midwesterngovernors.org/UtilityModel.Htm>

<sup>4</sup> National Governors Association. 2014. "Utility Business Models That Align with State Clean Energy Goals." <http://www.nga.org/cms/home/nga-center-for-best-practices/meeting--webcast-materials/page-eet-meetings-webcasts/col2-content/main-content-list/utility-business-models-that-ali.html>

<sup>5</sup> National Governors Association. 2015. "Learning Lab on New Utility Business Models & Electricity Market Structures of the Future." <http://www.nga.org/cms/home/nga-center-for-best-practices/meeting--webcast-materials/page-eet-meetings-webcasts/col2-content/main-content-list/learning-lab-on-new-utility-busi.html>

<sup>6</sup> National Association of State Energy Officials. 2016. "States Launch Energy System Modernization Roadmapping through NASEO Initiative." <http://www.naseo.org/news-article?NewsID=875>

<sup>7</sup> National Association of State Energy Officials. 2016. "2016 NASEO Energy Policy Outlook Conference: Agenda." <http://energyoutlook.naseo.org/agenda>

also results in significant expenditures of money and employee time by intervenors. However, the PSC must also balance the need for expeditious, low-cost rate case processing with due process needs (such appropriate timelines for intervention, discovery, and testimony) and prudence reviews. The Commission already has broad discretion to grant interim rate relief.<sup>8</sup> However, no electric utility has sought interim rate relief since 2010.<sup>9</sup> As one alternative the Commission could consider setting standards for the processing and evaluation of interim rate relief cases to provide utilities and other stakeholders additional transparency and certainty on how those requests would be processed and evaluated.

While the Notice attachment regarding the timing and scope of issues involved in rate cases addresses these issues, it should be considered whether the process outlined may restrict stakeholders' abilities to participate in cases and to receive full consideration of their issues before the Commission. As another alternative, timelines for processing traditional rate cases could be shortened and targeted mechanisms could be developed for achieving specific policy goals. The Commission already has the authority to shorten the intervals between rounds of testimony and discovery responses, and has done so in Kansas City Power and Light Greater Missouri Operations Company's current general rate proceeding (ER-2016-0156). In limiting the time for a hearing, the hearing schedule should still allow a fair allocation of time to all parties interested in cross-examination. Expediting the traditional rate case process in these manners should not limit the contested issues and would allow parties to provide evidence on all factors they believe are relevant in every case, not only in cases every three years. Additionally, the traditional rate case process already allows flexibility to address targeted incentives, an opportunity which should be preserved. For example, the Commission has considered and approved the sharing of off-system sales and capacity release revenues, as well as hedging plans, in past utility cases.

If rate caps are adopted as part of a change to the regulatory process, there should be limited exceptions to the rate caps by excluding only items over which utilities have no meaningful control. Additionally, the "customer class" definition contemplated by the Notice attachment is too strict. In addition to usage characteristics, the definition should allow for the

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<sup>8</sup> In the Matter of Union Elec. Co., d/b/a AmerenUE's Tariffs to Increase Its Annual Revenues for Elec. Serv., ER-2010-0036, 2010 WL 342483, at \*6 (Mo. P.S.C. Jan. 23, 2010).

<sup>9</sup> The Commission denied Ameren Missouri's request for interim rate relief in case ER-2010-0036.



inclusion of other factors determined relevant by the Commission, such as affordability in the case of low-income customers. The definition should also be flexible to allow for other special circumstances, such as instances where customers that might otherwise qualify for a particular customer class are not similarly situated due to by-pass opportunities.

#### Grid Modernization and Performance Incentives

Rate of return regulation provides for the recovery of costs associated with grid modernization projects, primarily targeted towards improving reliability and operating efficiencies in centralized generation and delivery infrastructure. Traditional rate regulation is less focused on meeting customer demand for emerging technologies and leveraging demand-side resources as a beneficial and cost-effective alternative for offsetting future needs for supply-side resources. Due to the lag that occurs between the time that investments are made and the time at which recovery through rates begins, rate of return regulation also has limitations in providing full and timely cost recovery of large investments in new technologies, creating a significant barrier to modernization and diversification of grid resources.

Providing a targeted mechanism for accelerated modernization and diversification of grid resources can enhance the ability to meet customer demand for emerging technologies, promote energy services sector growth, transition to more decentralized and cleaner forms of energy, and leverage demand-side resources as beneficial and cost-effective alternatives to supply-side resources. Additionally, improved two-way communication across the grid would benefit customers by empowering them to make or opt into cost savings decisions and benefit utilities and energy services providers by generating opportunities for growth.

MEEIA provides a targeted mechanism to encourage the development of beneficial demand-side resources on the customer side of the electric meter, but does not adequately facilitate accelerated investment in the utility-owned infrastructure required to fully leverage demand-side opportunities. A properly designed program to encourage grid development can benefit all stakeholders. Missouri's citizens will benefit from improved health associated with emissions reductions and economic growth spurred by increased development of demand-side energy resources. Lower long-run energy costs and increased availability of enhanced energy services can result in lower future bills for all rate-payers. Utilities will benefit by aligning their

interests with customers' interests through improved incentives for accelerated grid modernization. Utilities also benefit through reduced cost of meeting future energy needs and environmental compliance. Participants in the energy services sector, including contractors, third-party service providers, ancillary product providers, researchers, and emerging technology developers can benefit from new markets in energy management tools and solutions, energy efficiency products, distributed generation, and renewable energy resource development.

The Notice included an attachment addressing a proposed grid modernization investment mechanism. The targeted mechanism, which would require legislative authority, would interact with rate of return regulation in a manner similar to the ISRS mechanism available to natural gas and certain water utilities. Authorization and approval for such a mechanism would be consistent with recommendation 3.12 of the Comprehensive State Energy Plan ("CSEP").<sup>10</sup> The needs for infrastructure upgrades and increased development of demand-side resources were key initiatives discussed in steering committee meetings, stakeholder working group meetings, and in public comments received during CSEP development.<sup>11</sup> Financial barriers to system upgrades and the need for incentives to expand demand-side resource development have been addressed by stakeholders in proceedings before the PSC as well.

In order to more fully consider issues relating to infrastructure, discussions should also include the potential benefit of offsetting a portion of line extension and interconnection costs in order to promote the spread of non-intermittent resource and system deployment for distributed generation over 500 kW of capacity. Additionally, there should be consideration of explicitly including workforce asset utilization and cost-effective advanced metering deployment as performance measures.

### Low-Income Rates

The Notice included an attachment addressing low-income rates for gas, electrical, water, and sewer corporations. This proposal would allow the Commission to reduce customer charges

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<sup>10</sup> Missouri Department of Economic Development – Division of Energy. 2015. "Missouri Comprehensive State Energy Plan – Executive Summary" ("CSEP ES"). Page 9.  
[https://energy.mo.gov/energy/docs/Executive%20Summary\\_FINAL\\_10.05.2015.pdf](https://energy.mo.gov/energy/docs/Executive%20Summary_FINAL_10.05.2015.pdf). DE has attached this document as a part of its submission, along with a summary chart of CSEP recommendations.

<sup>11</sup> See, for example, Missouri Department of Economic Development – Division of Energy. 2015. "Missouri Comprehensive State Energy Plan – Public Meetings Report." Pages 5-7.  
[https://energy.mo.gov/energy/docs/Public%20Meetings%20Summary%20Report\\_v2.pdf](https://energy.mo.gov/energy/docs/Public%20Meetings%20Summary%20Report_v2.pdf)

for low-income customers through a statutory change. In its opening statement for Case No. ER-2016-0023,<sup>12</sup> DE explained that, while the Commission already has the authority to order low-income rates, this authority should be made explicit in statute consistent with CSEP recommendation 2.4.<sup>13</sup>

In designing a low income rate, to more fully address the challenges facing low-income energy consumers, the Commission may wish to consider the terms of service affecting a low-income rate class. Such authority could address additional measures to improve affordability and to promote service retention and the efficient use of energy, such as affordable repayment plans, arrearage reduction plans, and waivers of miscellaneous fees. Low-income rate participants should also be encouraged to sign up for any available weatherization assistance.<sup>14</sup>

The Commission has already authorized investor-owned electric utilities to offer low-income relief, including: Kansas City Power and Light Company's ("KCP&L") Economic Relief Pilot Program ("ERPP"), Union Electric Company d/b/a Ameren Missouri's ("Ameren Missouri") Keeping Current Low-Income Pilot Program, and The Empire District Gas Company's Experimental Low-Income Program ("ELIP").

KCP&L offers the ERPP<sup>15</sup> to relieve the hardship of 1,500 eligible customers with an annual household income of less than 200 percent of the Federal Poverty Level ("FPL") guidelines. The ERPP provides a fixed credit, not to exceed \$65, on the monthly bill. Customer participation in the ERPP beyond the initial 12-month period requires an additional application. Funding for the ERPP is \$1,260,000.

Ameren Missouri offers customers a Keeping Current Low-Income Pilot Program.<sup>16</sup> Funding for Keeping Current is \$1,081,000. Keeping Current provides participants with incomes up to 125 percent of the FPL with arrearage bill credit and/or heating/cooling bill credit.

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<sup>12</sup> Missouri Public Service Commission Case No. ER-2016-0023, *In the Matter of The Empire District Electric Company for Authority to File Tariffs Increasing Rates for Electric Service Provided to Customers in The Company's Missouri Service Area*, Hearing transcript Volume 5, June 2, 2016, pg. 28.

<sup>13</sup> CSEP ES, 2015, page 6.

<sup>14</sup> Missouri Department of Economic Development – Division of Energy. 2015. "Missouri Comprehensive State Energy Plan." Page 223. <https://energy.mo.gov/energy/docs/MCSEP.pdf>

<sup>15</sup> Missouri Public Service Commission Tariff No. YE-2016-0078, Kansas City Power and Light Company, Promotional Practices, Sheets Nos. 43Z – 43Z.3.

<sup>16</sup> Missouri Public Service Commission Tariff No. JE-20013-0582, Union Electric Company d/b/a Ameren Missouri, Pilots, Variances, and Promotional Practices, Sheets Nos. 160 – 160.2.

The Empire District Gas Company offers the ELIP<sup>17</sup> to no more than 120 natural gas customers in Sedalia with a verified income of 125 percent or less of the FPL guidelines. Eligible customers may receive a credit, up to \$60 per month, during the months of November through March. ELIP funding is \$25,000. The Empire District Electric Company offers the “Empire’s Action to Support the Elderly” (“EASE”)<sup>18</sup> tariff to electric customers who are either age 60 and older or handicapped. EASE is not income-qualifying.

The Commission has also authorized low-income credits for investor-owned natural gas providers. For example, Laclede Gas Company (now a part of Spire) includes a bill credit and arrearage reduction component.<sup>19</sup> Very recently, the Commission approved an experimental low-income rate for a portion of American Water’s service area. In WR-2015-0301, the Commission approved the implementation of an 80 percent discount on the customer charge for qualifying low-income customers who are eligible to participate in the Low-Income Energy Assistance Program (“LIHEAP”).

### **III. Rate Cases and Revenue Requirement**

#### Performance Based Rates

Although not addressed in the June 22, 2016, Notice, DE is aware of recent legislative consideration of performance based ratemaking (“PBR”) as an avenue to address certain concerns with the current regulatory process. Exploring the potential impact of PBR through this stakeholder process is consistent with Recommendation 4.1 of the CSEP.<sup>20</sup> DE feels strongly that any movement to PBR should be accompanied by meaningful development of customer-benefiting advances in the areas of grid modernization, system optimization, energy efficiency, renewable resource development, and distributed generation deployment. Key considerations should include predictable mechanisms to ensure continuation of Missouri’s historically low rates and reliable service, while also providing reasonable rate recovery for utilities to meet evolving customer needs by modernizing our electric infrastructure. Specifically, discussion

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<sup>17</sup> Missouri Public Service Commission Tariff No. YG-2010-0568, The Empire District Gas Company, Rules and Regulations, Sheets Nos. R-51a, R-51b, and R-51c.

<sup>18</sup> Missouri Public Service Commission Tariff No. YE-2007-0448, The Empire District Electric Company, Empire’s Action to Support the Elderly – Rider EASE, Sheet No. 20.

<sup>19</sup> Missouri Public Service Commission Case Nos. GR-2005-0284 and GR-2013-0171, Laclede Gas Company, Rules and Regulations, Low-Income Energy Affordability Program, Sheet No. R-1.

<sup>20</sup> CSEP ES, 2015, page 10.

should focus on identifying meaningful and comprehensive performance metrics and milestones across a broad spectrum of quantitative measures to gauge achievement of the state's energy goals and to ensure utility accountability related to reliability, plant performance, environmental goals, renewable energy standards, customer satisfaction and engagement, energy efficiency, public and employee safety, and security. Synapse Energy Economics' "Utility Performance Incentive Mechanisms: A Handbook for Regulators," written for the Western Interstate Energy Board, makes numerous recommendations for designing and implementing performance metrics, including lists of potential metrics. These recommendations could be considered in identifying best practices applicable to Missouri. The paper, attached as a part of DE's submission in this docket, recommends tying performance metrics to areas which have not historically been well-addressed by utilities, while keeping the regulatory context in mind during metric development. Synapse also recommends the ability for metrics to change with newly acquired information. Consideration of PBR should also evaluate the opportunities and challenges faced by other states that have employed PBR with return on equity ("ROE") adjustments based on meeting performance milestones, as well as adoption of earnings caps to protect ratepayers from unanticipated rate increases. The Synapse paper includes case studies which can provide examples for review.<sup>21</sup>

### Test Years

As previously discussed, the PSC has authority to shorten rate case timelines as a relatively short-term solution to address regulatory lag in a way which promotes customer-benefiting investment. A potential longer-term option, which would require legislative action, would be to explore the use of "forward-looking" test years. Currently, utilities use "historical" test years with adjustments for known and measureable changes; however, in an increasing cost environment, historical test years exacerbate regulatory lag. CSEP Recommendation 4.1 suggested that the use of future test years could be explored in a stakeholder process.<sup>22</sup> The use of forward-looking test years would allow utilities to base their revenue recovery on projections of future expenses.

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<sup>21</sup> Whited, Melissa, Woolf, Tim, and Napoleon, Alice. 2015. "Utility Performance Incentive Mechanisms: A Handbook for Regulators." Synapse Energy Economics, Inc. [http://www.synapse-energy.com/sites/default/files/Utility%20Performance%20Incentive%20Mechanisms%2014-098\\_0.pdf](http://www.synapse-energy.com/sites/default/files/Utility%20Performance%20Incentive%20Mechanisms%2014-098_0.pdf)

<sup>22</sup> CSEP ES, 2015, page 10.

## Revenue Decoupling

Revenue decoupling is a rate adjustment mechanism by which utilities are allowed to recover all or a portion of their Commission-approved revenue requirement irrespective of changes in customer usage.<sup>23</sup> Typically, decoupling involves examining revenues per customer,<sup>24</sup> with periodic “true-ups” of rates to account for revenue under- or over-collection. Notably, this is not the same as “straight-fixed variable” (“SFV”) rate design, which simply raises customer charges by incorporating non-customer-related costs in fixed charges; such a rate design discourages additional energy efficiency investments by customers<sup>25</sup> and adversely impacts low-income, low use customers. Decoupling is designed to make utilities indifferent to energy efficiency,<sup>26</sup> distributed generation, and other reductions in customer usage by allowing utility shareholders to continue earning a return on their investments regardless of usage changes. Numerous states already allow some form of decoupling.<sup>27</sup> Rate adjustments in these states have typically been within two percent above or below the retail rate.<sup>28</sup>

Limited decoupling is already authorized to an extent under MEEIA, which allows utilities to recoup revenues lost from the implementation of demand-side programs (see in particular §393.1075.5, RSMo.). Natural gas utilities are allowed to use decoupling mechanisms to account for weather variations and energy efficiency, though the statutory provision authorizing these mechanisms (§386.266.1.3, RSMo.) has not been used to date. Additional forms of revenue decoupling for electric utilities (e.g., full decoupling or decoupling to account for weather) would require statutory authorization.

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<sup>23</sup> Lazar et al., 2011 (pages 11-13) describes three categories of decoupling: full decoupling (which includes all changes in sales volumes); limited decoupling (which only includes some changes in sales, for example, those due to weather); and partial decoupling (which limits the amount of revenue under consideration). See Lazar, Jim, Weston, Frederick, and Shirley, Wayne. 2011. “Revenue Regulation and Decoupling: A Guide to Theory and Application.” The Regulatory Assistance Project. <http://www.raponline.org/document/download/id/861>

<sup>24</sup> Lazar et al., 2011, page 11.

<sup>25</sup> Molina, Maggie and Kushler, Marty. 2015 “Policies Matter: Creating a Foundation for an Energy-Efficient Utility of the Future.” American Council for an Energy-Efficient Economy. Page 12.

<http://aceee.org/sites/default/files/policies-matter.pdf>

<sup>26</sup> Lazar et al., 2011, page 12.

<sup>27</sup> See Molina and Kushler (2015, page 9, footnote 11) for a discussion of the disadvantages of SFV rate design.

<sup>28</sup> Morgan, Pamela. 2012. “A Decade of Decoupling for U.S. Energy Utilities: Rate Impacts, Designs, and Observations.” Graceful Systems LLC. Page 3. <http://aceee.org/files/pdf/collaborative-reports/decade-of-decoupling.pdf>

However, it should be noted that policies such as PBR (see above) and decoupling may not be sufficient enough policies alone to effectively encourage efficiency investments. The ACEEE has found that a combination of incentive mechanisms (e.g., decoupling) and requirements to meet efficiency targets leads to the achievement of higher levels of efficiency savings.<sup>29</sup> Any appropriately designed policies allowing for decoupling or PBR should be accompanied by a requirement for utilities to achieve all cost-effective demand-side savings, as well as other robust assurances of benefits to customers, prudence reviews, and (if needed) customer refunds for over-collections.

#### **IV. Additional Policy Considerations**

Based on discussions and recommendations included in the CSEP and prevailing energy issues more broadly, DE also submits additional customer-aligned policies for consideration which should accompany utility-benefitting regulatory or legislative changes, such that benefits to customers and the state are assured. As described below, such policies include assuring the security and diversity of Missouri's energy supply, changes to the Net Metering and Easy Connection Act and increased portfolio standards under the Renewable Energy Standard ("RES").

##### Security and Diversity of Supply

The CSEP addresses diversity and the security of energy supply in recommendation 3.10. The CSEP highlights the significance of cyber-attacks on energy infrastructure, as well as the importance of, and need to protect, the energy industry from cyber-attacks due to the potential economic impacts.<sup>30</sup> The Commission is the primary state agency responsible for ensuring that regulated utilities provide safe and reliable service at just and reasonable rates. Cyber-attacks threaten safe and reliable service, and the costs of implementing cybersecurity measures affect utility rates; to that end, the Commission established two working cases<sup>31</sup> to obtain information

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<sup>29</sup> Molina and Kushler, 2015, page 15.

<sup>30</sup> CSEP ES, 2015, page 9.

<sup>31</sup> In July 2012, the Commission opened a working case, File No. EW-2013-0011, to address concerns regarding effective cybersecurity practices for protecting essential electric utility infrastructure. On February 19, 2015, Commission Staff filed a motion in that case asking the Commission to close that working docket and open a new expanded working case to include all utilities and to include physical security threats as well as cybersecurity threats.

from Missouri's regulated electric utilities about their cybersecurity activities and what steps, if any, had been implemented to protect their systems in the event of cyber-attacks.<sup>32</sup>

From the responses received by the Commission, for the most part, Missouri utilities have taken a proactive role in cybersecurity and infrastructure security preparedness. For the few survey questions where utilities responded "no," the lack of action is due to the size of the utility, limitations on technology, or the monitoring of federal action on related activities. Since the utilities are actively engaged in cybersecurity and infrastructure security issues, Commission Staff did not recommend that the Commission promulgate rules related to cybersecurity or infrastructure security.<sup>33</sup> However, Commission Staff recommended expanding the process for all non-telecommunications utilities to include verbal reporting of cybersecurity or infrastructure security events or breaches that affect many customers, involve the release of customer-proprietary information, or pose a threat to the general public. Reports will be provided to a Staff member directly involved with emergency management functions. Commission Staff will verbally inform the Chairman/Commissioners as deemed appropriate. While written records will not be retained regarding individual contacts, the information may result in Staff or the Commission requesting an investigation into any potentially larger issues.

An accounting mechanism could be considered as an option for Missouri's IOUs to recover the cost of expenses and investments related to cyber-security for potential cost recovery in future rate cases. Energy supply diversity opportunities should also be addressed in order to improve the reliability and security of Missouri's energy supply infrastructure.

#### Missouri Energy Efficiency Investment Act

MEEIA represented a landmark achievement in promoting energy efficiency in Missouri. However, over time, numerous issues with the statute's design have emerged, such as the statute's voluntary nature, and implementation has been hindered by a lack of explicit guidance on issues such as evaluation, measurement, and verification ("EM&V"), the use of a technical

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<sup>32</sup> Missouri Public Service Commission File No. AW-2015-0206 was opened on March 4, 2015. A Commission workshop was held on March 23, 2015 to discuss issues related to cybersecurity and physical infrastructure security. On June 8, 2015 and July 17, 2015, Staff filed requests asking the Commission to direct utilities to respond to a number of questions related to infrastructure and cybersecurity. On August 5, 2015, the Commission issued an order directing utilities to respond to a series of questions by September 11, 2015.

<sup>33</sup> Missouri Public Service Commission File No. AW-2015-0206, *In the Matter of a Working Case to Address Security Practices for Protecting Essential Utility Infrastructure*, Staff Memorandum, October 23, 2015.



reference manual (“TRM”), the eligibility of combined heat and power (“CHP”) and conservation voltage reduction (“CVR”), the use of cost-effectiveness tests, verification of “opt-out” customer eligibility, and the prevention of participation by customers who use low-income housing tax credits. Instead of determining appropriate program designs, parties to MEEIA cases continually argue over cost-effectiveness and EM&V requirements, measure eligibility, and the need for demand-side programs generally.

As of May 2016, 25 states had either “standalone” energy efficiency mandates or allow energy efficiency as part of their renewable portfolio standards.<sup>34</sup> Missouri ranked 31<sup>st</sup> in per capita spending on electric energy efficiency programs in 2014,<sup>35</sup> outranked by many states which currently have electric energy efficiency mandates; per capita spending in Missouri was well below the US median.<sup>36</sup> Of the states without an “Energy Efficiency Resource Standard,” only six scored four or more points (out of a possible 20) in the American Council for an Energy-Efficient Economy’s 2015 evaluation of utility and public benefits programs and policies.<sup>37</sup> The CSEP notes that while MEEIA serves as a good first step in the platform for achieving significant levels of energy efficiency, there are opportunities for policy modifications that would encourage more aggressive and mandatory targets (see CSEP recommendation 1.1) and exploring the inclusion of social and environmental benefits in cost-effectiveness testing (see CSEP recommendation 1.2<sup>38</sup> and 2011 guidance from the Regulatory Assistance Project<sup>39</sup>). DE has recommended in other venues: that cost-effectiveness testing not be used to limit the achievement of all cost-effective savings at the portfolio level (i.e., through requiring test scores greater than 1.0) because of the exclusion of low-income and educational programs from cost-effectiveness testing in the MEEIA statute; the eligibility of a fuller list of measures, such as

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<sup>34</sup> American Council for an Energy-Efficient Economy. 2016. “State Energy Efficiency Resource Standards (EERS).” Page 1. <http://aceee.org/sites/default/files/eers-052016.pdf>

<sup>35</sup> Gilleo, Annie, Nowak, Seth, Kelly, Meegan, Vaidyanathan, Shruti, Shoemaker, Mary, Chittum, Anna, and Bailey, Tyler. 2015. “The 2015 State Energy Efficiency Scorecard.” American Council for an Energy-Efficient Economy. Report U1509. Page 122. <http://aceee.org/sites/default/files/publications/researchreports/u1509.pdf>

<sup>36</sup> *Ibid.*

<sup>37</sup> *Ibid.*, pages 20-21.

<sup>38</sup> CSEP ES, 2015, page 3.

<sup>39</sup> Lazar, Jim. 2011. “Electricity Regulation in the US: A Guide.” The Regulatory Assistance Project. Page 82. [http://www.raponline.org/docs/RAP\\_Lazar\\_ElectricityRegulationInTheUS\\_Guide\\_2011\\_03.pdf](http://www.raponline.org/docs/RAP_Lazar_ElectricityRegulationInTheUS_Guide_2011_03.pdf). A footnote on the same page states, “Where costs or benefits are excluded, the value of the analysis is impaired.”

CHP and CVR; and that customers who utilize low-income housing tax credits should be allowed to participate.<sup>40</sup>

### Renewable Energy Standard

Much like MEEIA, the RES represented a significant accomplishment following its ratification by voters. Renewable energy costs have also declined significantly in recent years, and public interest in renewable energy – along with regulatory drivers – has continued to increase. While Missouri utilities are beginning to embrace the transition to renewable energy, some parties oppose this development. These parties contend that renewable energy is not the least-cost resource, that it is not needed for capacity or regulatory needs, or that the energy or renewable attributes can be purchased elsewhere. Parties have cited the RES compliance requirements as evidence that renewable energy is only needed in limited amounts. However, the cost of renewable energy resources continues to decline making them more cost-effective, increased diversity contributes to reliability and security, transitioning to a cleaner energy portfolio positions Missouri well for future environmental goals, and there are economic development benefits from the in-state development of renewable resources to replace aging fossil fuel-fired generation assets.

In order for utilities to fully benefit from maturing markets, the PSC would need to recognize the value of renewable energy resources beyond considerations of the current cost and compliance requirements, such as the benefit in learning by doing as well as avoidance of future regulatory requirements and various other co- benefits. Additionally, renewable energy-fueled CHP systems may not currently be used for compliance, although as system costs decline, CHP potential in Missouri will increase. To allow for renewable energy-fueled CHP systems to qualify towards RES compliance, the PSC's rules (and DE's rules) would need to be modified (as per CSEP recommendation 3.5).<sup>41</sup>

In addition to the implementation issues noted above, the current RES portfolio requirements lag behind the requirements in other states, which often mandate procurement of 20 percent or greater of utility sales from renewable energy resources.<sup>42</sup> The statute is also

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<sup>40</sup> Missouri Comprehensive State Energy Plan, 2015, Page 213.

<sup>41</sup> CSEP ES, 2015, page 8.

<sup>42</sup> Missouri Comprehensive State Energy Plan, 2015, page 228.

ambiguous with regards to the calculation of the “retail rate impact,” a measure which limits utility compliance with the RES based on a retail rate increase of one percent. The calculation of this impact has led to varying utility approaches, may not properly account for all benefits from renewable energy resources, and may ultimately inhibit compliance by utilities. Utilities have also used out-of-state renewable energy credits (“RECs”) for compliance, while in-state development could promote economic development. The CSEP recommends that the RES statute be revised to: strengthen the portfolio requirements to 20 percent of annual retail sales by 2025; clarify the retail rate impact calculation; add renewable energy-fueled CHP systems as eligible resources; and impose reasonable limits on the use of RECs. The CSEP also recommends establishing voluntary RES goals for utilities not currently covered under the law, with the opportunity to demonstrate goal achievement and receive investment credits.<sup>43</sup>

#### Net Metering and Easy Connection Act

Missouri’s net metering act sets limits for the capacities of customer-owned renewable distributed energy resources which may be connected to utility grids. This limit can act as a barrier to the adoption of larger systems, such as those of corporate customers, by requiring the separate negotiation of interconnection terms for those systems. The statute also does not explicitly allow for virtual net metering, aggregated net metering, and third-party resource ownership, which represent opportunities to better leverage additional projects and financing. Additionally, the statute does not describe how CHP and microgrids should be treated, as it is specific to renewable distributed energy resources; this leaves ambiguity in the treatment of CHP, and does not answer questions about interconnecting microgrids with multiple distributed energy resources. Additional eligible resources could be included, specifically, biogas and landfill gas renewable energy systems. Finally, the statute requires compensation through net metering at utility avoided costs or higher for excess monthly energy supplied; the annual accumulation of credits or debits (rather than monthly accumulation)<sup>44</sup> would better encourage the growth of renewable DERs in the state, as would the evaluation of the “value of solar” and other distributed energy resources. Modifications to the law could be made to address these issues.

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<sup>43</sup> See recommendation 3.1 of CSEP ES, 2015, page 7.

<sup>44</sup> CSEP ES, 2015, page 7.

### Alternative Financial Instruments for Customers

Per CSEP recommendation 4.4,<sup>45</sup> regulated utilities should be encouraged to offer on-bill financing programs, which provide a convenient way for consumers to obtain financing for energy efficient improvements that provide cost-effective energy savings. On-bill financing would benefit consumers by reducing their immediate energy burdens and increasing their disposable incomes and utilities would benefit from demand reductions associated with energy efficiency savings. It would be appropriate to reflect energy savings associated with such programs under the MEEIA lost revenue and earnings opportunity mechanisms. On-bill financing could also spur economic development in areas served by regulated utilities through job creation and consumer savings.

In Missouri, Laclede Gas has demonstrated that on-bill financing can be deployed for efficient insulation and furnaces at interest rates favorable to utilities.<sup>46</sup> Kansas has authorized financing interest rates of 5.05 percent for residential and 6.6 percent for commercial customers. There have also been successful examples of on-bill financing in Connecticut, Hawaii, Illinois, and New Hampshire.<sup>47</sup>

### Electric Vehicle Charging Stations

The role of EVs and their related service equipment (“EVSE”) in addressing electric utility regulation policies should also be considered. At present, the introduction of EVs to Missouri’s electrical grid has caused anxiety among some parties with regards to infrastructure needs, increased demand, and rate design. While these concerns may be valid, various states and utilities are already moving forward with EV adoption by being proactive about their grid needs. For example, Alabama Power provides rebates for both residential customers’ purchases of EVs and commercial customers’ installation of ESVE infrastructure.<sup>48</sup> Illinois provides rebates for ESVE infrastructure development while simultaneously mandating that a charging station must

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<sup>45</sup> CSEP ES, 2015, page 10.

<sup>46</sup> Laclede Gas. 2016. “Furnace Financing.” <http://www.savewithnaturalgas.com/laclede/residential/rebates-and-financing/financing/furnace-financing>

<sup>47</sup> Local Clean Energy Alliance. 2016. “States With On-Bill Financing and PAYS programs.” <http://www.localcleanenergy.org/State%20On-Bill%20Financing>

<sup>48</sup> U.S. Department of Energy. 2016. “State Laws and Incentives.” Alternative Fuels Data Center. <http://www.afdc.energy.gov/laws/state>

be installed at each interstate highway rest stop.<sup>49</sup> Additionally, more and more municipalities are looking towards EVs to reach federal air quality standards, which will necessitate EVSE infrastructure development.<sup>50</sup>

Greater deployment of EVs on Missouri roads will lead to greater reductions in greenhouse gas emissions both in-state and in surrounding states, increasing the non-energy benefits of EV adoption. As identified in a recent study, a diversified electrical grid will provide an EV with 100 miles of range with roughly six pounds of carbon dioxide emitted due to charging, while a conventional gasoline-powered vehicle will produce roughly 50 pounds of carbon dioxide at the tailpipe for the same trip.<sup>51</sup> Even with Missouri's current generation portfolio (i.e., 80 percent coal-generated electricity), purely battery-powered EVs result in the emission of over 3,000 pounds less carbon dioxide per year than conventional vehicles.<sup>52</sup>

In order to support infrastructure development, EV adoption should be recognized as a way to increase utility revenues (decreasing utility rates across all customer classes) and provide suppliers with an avenue to develop more charging infrastructure. Furthermore, with EV owners primarily charging at home,<sup>53</sup> charging can be programmed to occur when the grid is underutilized based on time-differentiated rates that reflect the lower cost of off-peak energy use. Utilities could also partner with multifamily buildings to install charging stations at their locations, as over half of all U.S. vehicles are parked along a street or in a parking lot while the owner is at home.<sup>54</sup> Such initiatives would create not only a new revenue stream from which utility companies could recover infrastructure costs, but unlock the ability for a diverse consumer base to enter the EV market as well. Any rates charged by electric utilities for EVSE use should be cost-based. Finally, the batteries in EVs, which now reach double-digit GW-hours of

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<sup>49</sup> *Ibid.*

<sup>50</sup> M. Baumhefner, Max, Hwang, Ronald, and Bull, Pierre. 2016. "Driving Out Pollution: How Utilities Can Accelerate the Market for Electric Vehicles." National Resources Defense Council. <https://www.nrdc.org/sites/default/files/driving-out-pollution-report.pdf>

<sup>51</sup> McLaren, Joyce, Miller, John, O'Shaughnessy, Eric, Wood, Eric, and Shapiro, Evan. 2016. "Emissions Associated with Electric Vehicle Charging: Impact of Electricity Generation Mix, Charging Infrastructure Availability, and Vehicle Type." National Renewable Energy Laboratory. [http://www.afdc.energy.gov/uploads/publication/ev\\_emissions\\_impact.pdf](http://www.afdc.energy.gov/uploads/publication/ev_emissions_impact.pdf)

<sup>52</sup> U.S. Department of Energy. 2016. "Emissions from Hybrid and Plug-In Electric Vehicles." Alternative Fuels Data Center. [http://www.afdc.energy.gov/vehicles/electric\\_emissions.php](http://www.afdc.energy.gov/vehicles/electric_emissions.php)

<sup>53</sup> Baumhefner et al., 2016.

<sup>54</sup> *Ibid.*

storage,<sup>55</sup> may eventually have the capability to be programmed to not only draw power from the grid but to put power back into the grid, helping to diversify energy supplies and decrease grid strain; however, this process is still in the pilot stage with the U.S. Army and U.S. Air Force<sup>56</sup>.

The difficulty of establishing EV infrastructure is that the market in Missouri may currently be too small to allow cost recovery in a short-range timeline. However, infrastructure cost recovery could occur over the lifetime of EVSE assets as EV adoption rates increase. Since recent market research shows that consumers' hesitation in purchasing an EV is most closely associated with lack of infrastructure (commonly referred to as "range anxiety"),<sup>57</sup> the development of more charging infrastructure can alleviate this concern. It is possible that EV charging suppliers should not be regulated as heavily as traditional electric utilities so as to encourage free market development, though this would require an explicit statutory exemption (as has been made in other states)<sup>58</sup> since Missouri's laws currently give the Commission jurisdiction over the sale of electricity to the public by any provider. Non-utility ESVE providers may, with Commission approval, also be allowed to take service under a separate tariff to allow resale of electricity at a marketable rate, since utility tariffs currently prohibit the resale of electricity.

### Microgrids

A microgrid is a system in which a small-scale electrical grid exists with its own power system that can operate separate from, or alongside, the central utility power station and manage the flow of generated and consumed electricity. Microgrids provide increased reliability, sustainability, and resiliency in emergency situations and can integrate management of thermal and electrical load for increased efficiency. Microgrids also contribute to local economies by utilizing local energy sources, including renewables (wind, solar, geothermal, and biomass). Additionally, microgrids satisfy increasing customer demand for a greater role in how and where their energy is generated.

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<sup>55</sup> *Ibid.*

<sup>56</sup> U.S. Army and U.S. Air Force. 2015. "What is Plug-In Electric Vehicle – Vehicle to Grid (PEV-V2G)?" [http://www.transform.af.mil/Portals/18/documents/PEV/PEV-V2G\\_Posters.pdf](http://www.transform.af.mil/Portals/18/documents/PEV/PEV-V2G_Posters.pdf)

<sup>57</sup> Baumhefner et al., 2016.

<sup>58</sup> U.S. Department of Energy, "State Laws and Incentives," 2016.

CSEP recommendation 3.7 promotes the adoption of standardized microgrid interconnection requirements and clear rules for how microgrid owners interact with utilities. Utilities should be required to develop tariff structures applicable to microgrids. These tariffs should 1) not be punitive or discriminating, 2) appropriately price various types of standby power, and 3) encourage microgrid development with an initial focus on areas of the grid that are congested or experiencing rapid demand growth. Microgrid owners and operators should also be required to provide utilities with information that could affect planning, including information about capacity, system design, and location. In support of these recommendations, DE is attaching best practices documents created with help from the Missouri University of Science and Technology's Microgrid Industrial Consortium.

## **V. Conclusion**

The electric utility industry is rapidly changing as a result of new technologies, cost increases, and consumer demands. To maintain the availability of the electric grid, DE supports regulatory and legislative reforms which meaningfully benefit customers. This working docket represents an important opportunity to look at necessary regulatory changes more holistically and allows for a planning process to address future needs across the entire utility system. Along with the policies contemplated in the Notice, DE submits the policies and documents described above for further consideration. DE remains available to provide additional information.