STATE OF MINNESOTA
BEFORE THE PUBLIC UTILITIES COMMISSION

Nancy Lange	Chair
Dan Lipschultz	Commissioner
Matt Schuerger	Commissioner
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In the Matter of a Commission Investigation To Identify and Develop Performance Metrics and, Potentially, Incentives for Xcel Energy's Electric Utility Operations

DOCKET NO. E-002/CI-17-401

COMMENTS OF THE OFFICE OF THE ATTORNEY GENERAL

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The Office of the Attorney General—Residential Utilities and Antitrust Division ("OAG") submits the following Comments in response to the Minnesota Public Utilities Commission's ("Commission") September 22, 2017 Notice of Comment Period.

Performance metrics have the potential to make utilities better and its ratepayers better off. But this promise can only be fulfilled within a deliberate, collaborative process that addresses fundamental issues in utility regulation. To that end, these Comments will proceed in three parts, with the following recommendations.[1]

The first section begins with a discussion of the fundamentals of utility regulation to underscore that the cost-of-service regulatory structure creates powerful incentives that drive utility behavior. These powerful incentives continue to drive utility decision-making today. Recent, potentially disruptive changes to the electricity industry pose new challenges to utilities and the regulatory structure. Other states have addressed these issues in similar proceedings to the current docket and there are important lessons to be learned from these experiences. In particular, the complexity and scale of similar proceedings supports the establishment of a deliberate process in Minnesota. This docket could be enhanced further by early consideration of a clear objective for this process.

The second section introduces a performance incentive mechanism ("PIM") design process that will allow the Commission to take high-level regulatory goals and transform them into actionable performance metrics that are tied to desired regulatory outcomes. The first three steps of this process form a hierarchy of concepts that will be used in this proceeding to organize concepts and also report future selected metrics. This hierarchy starts broadly with regulatory

[1] This introduction includes summaries of the OAG's recommendations in this docket; each section contains a list of recommendations found in that section and a full compilation of recommendations is included after the conclusion of these Comments.

goals, then moves to the identification of desired regulatory outcomes, and finally the identification of performance metrics. The OAG recommends that the Commission adopt the PIM Design Process and the goals-outcomes-metrics hierarchy embedded within the process as it considers the implementation of PIMs for Xcel Energy. The OAG also recommends that the Commission limit this phase of the investigation to the first four steps of the PIM Design Process, which includes the articulation of state energy goals, identification of desired outcomes, the identification of performance metrics, and the establishment of reporting requirements for chosen metrics. The Commission should decline to adopt a financial incentive mechanism during this phase of the docket given the benefits and low risk associated with a metrics-only approach and the potential costs and higher risk associated with a financial incentive mechanism.

The third section applies the initial steps of this design process to Xcel and includes recommendations for regulatory goals, outcomes, and performance metrics the Commission should consider. In particular, the OAG recommends that the Commission establish the regulatory policy goals of: customer focus; operational effectiveness; public policy responsiveness; and financial performance. The OAG recommends that the Commission also adopt fourteen regulatory outcomes that relate to these policy goals. The outcomes are intended to ensure that the existing regulatory structure functions properly during a multiyear rate plan while also ensuring that the state is prepared to accommodate emerging technologies and services in the future. The Commission should also consider performance metrics in three categories: the modification of existing performance metrics, metrics related to performance under a multiyear rate plan, and metrics related to emerging products and services. Finally, the Commission should begin work on development of a reporting "scorecard," which will promote accountability through transparency.

I. REGULATION AND THE HARNESSING OF INCENTIVES

These Comments begin by addressing a broad topic: regulation. It may seem a banal starting point, but an investigation into performance metrics and incentives must begin at this high level before diving into the technical details. Early consideration of the bigger picture will help define the scope of this investigation, which remains unclear. This section will describe how incentives inform the past and present regulatory structure and why there is reason for optimism and caution as this investigation into performance metrics commences.

A. INCENTIVES IN REGULATION.

To begin, a truism: all regulation is incentive regulation. Regulation is an attempt to correct market failures caused by wayward incentives by attempting to align incentives with the public interest. The regulation of public utilities is no different in this regard.

There were a number of market failures that public utility regulation was originally intended to correct. For example, resources would be wasted if competing electric companies built redundant infrastructure to serve the same customer. There are also market failures that could result from a single, unregulated electric company that exerts monopoly power. Such a company could refuse to serve high-cost areas, thus depriving these areas of electric service or it could extract exorbitant or discriminatory prices from its customers.

The cost-of-service regulatory structure that has arisen over time reflects an attempt by policymakers to avoid these undesirable outcomes. To avoid duplicative infrastructure, public utilities are granted legal monopoly status within a service territory. Cost-of-service ratemaking allows utilities to recover prudently-incurred costs and earn a return on assets. In exchange, utilities are obligated to provide adequate service to all ratepayers at a reasonable, non-discriminatory rate. This arrangement corrected a number of market failures and allowed utilities operating in this system to flourish during the first half of the twentieth century.

The establishment of the cost-of-service regulatory structure, however, also creates powerful implicit and explicit incentives that act upon regulated utilities.

Implicit incentives relate to the underlying structural financial incentives that act upon the regulated utility. These powerful incentives fundamentally drive a regulated entity's decisions and are difficult, if not impossible, to change without altering the regulatory structure itself. For example, the current regulatory structure provides electric utilities with a strong implicit incentive to sell more units of energy, commonly called the throughput incentive. For much of the twentieth century, this incentive was encouraged because of the public interest in electrification.[2] The throughput incentive is related to another powerful incentive to build capital-intensive generation and related assets. Since cost-of-service regulation allows a utility to earn a return on capital investments, utilities have a strong incentive to build as much capital as possible.[3] These incentives encourage utilities to promote electricity use and then build power plants to meet the resulting demand growth. Over time, this singular focus began to conflict with emerging concerns like energy efficiency and conservation, as well as other state policy goals. Regulators were forced to re-align the utility's incentives with the public interest.

This realignment was achieved by the use of explicit incentives. Explicit incentives are attempts by regulators and policymakers to correct implicit incentives that come into conflict with emerging public goals. For example, the financial incentive for energy conservation is an

[2] Richard F. Hirsh, *Power Loss* 50–51 (1999) (describing the prevailing notion—amongst utility managers, regulators, and the public—of electricity as a public good that resulted in regulatory policies that encouraged the growth of electricity). During the first half of the 20th Century, demand for electricity skyrocketed while unit costs (and rates) plummeted, which provided the type of non-zero-sum scenario that solidified support for the existing regulatory structure amongst stakeholders. *Id.* at 46–50.

[3] The throughput and capital incentives form the core business model of a regulated, vertically-integrated electric utility. Higher energy sales are used to justify additional capital investments, which creates excess capacity that is then marketed to ratepayers in order to promote higher sales. This "grow-and-build" strategy was successfully adopted by the utility pioneer Samuel Insull in the early twentieth century. Richard F. Hirsh, *Power Loss* 46–51 (1999).

attempt to override the throughput incentive, by offering utilities a financial payout in exchange for utility efforts in energy conservation.[4] This incentive is just one example of the many explicit incentives and other regulatory tools that have been employed to alter utilities' implicit incentives. The tremendous cost and uncertainty associated with these incentives will be discussed throughout these Comments.

The resulting regulatory structure reflects attempts by regulators to harness and direct the incentives working upon a regulated entity in order to benefit the public good and achieve particular state goals. The structure also reflects the efforts of the utility to bend the arc of regulation toward outcomes that suit its needs, which may not always be in alignment with the public interest.[5] The result of this push-pull dynamic is a regulatory structure that is a work-in-progress, with features that reflect past efforts to strengthen and mitigate certain underlying incentives to achieve a particular goal. Each new explicit incentive is a regulatory tool that is layered onto existing policies and incentives. Because of this layering, it is important to acknowledge the impact that each proposed incentive or policy will have on the tangle of existing incentives. This consideration will become even more important as the electric industry heads into a period of change.

This brief history of public utility regulation and implicit and explicit incentives informs a number of ongoing discussions in Minnesota and elsewhere regarding the future of electric

[4] Energy efficiency and conservation tools that are available to regulators have been likened to a three-legged stool, with revenue decoupling, complete cost recovery, and a financial incentive used to encourage a utility to meet its energy savings goal. *In the Matter of Commission Review of Utility Performance Incentives for Energy Conservation*, Docket No. E,G999/CI-08-133, Initial Comments of the OAG at 6 (Jan. 19, 2016).

[5] It is difficult to overstate the impact that utility managers have had on shaping the existing regulatory structure. For decades, particularly during the period of tremendous growth in the mid-20th Century, utility managers successfully shaped the regulatory structure in a manner that best-suited the firm's financial needs. Richard F. Hirsh, *Power Loss* 52 (1999) ("For the next fifty years [following 1920], [utility] managers and their allies in manufacturing firms sought to stifle radical innovations that could upset the central [generating] station paradigm and threaten established financial interests."). Attempts by utility managers to shape the regulatory system continues today.

utility regulation. A small number of states have recently declared the existing regulatory model broken and have begun efforts to re-shape utility regulation. The next section will briefly describe some of the drivers behind these efforts.

B. RECENT DISRUPTIONS TO THE ELECTRIC INDUSTRY AND RESPONSES.

Utilities have long-thrived within a closed-loop business strategy where they create, transport, and deliver their product directly to customers. Such a strategy emphasizes the closing of the utility system to prevent upstart companies and technologies from upsetting the centralized hub-and-spoke concept of power generation, transmission, and distribution.[6] More than a century ago, utility pioneer Samuel Insull remarked that "there is one great advantage that must follow regulation, and that advantage is protection."[7] This protection from competition has allowed utilities to exert dominance throughout all levels of its business.

Rapid changes to the electricity industry over the past decade have begun to threaten utilities' hegemony. A recent MIT study identified three drivers that are forcing change in the electric industry.[8] First, technological innovation has resulted in dramatic cost declines for wind and solar. Second, a number of policies have promoted renewable energy sources. And third, customer choice and preferences are resulting in more active participation by customers in their energy usage and even generation.

Emerging products and services, especially at the distribution level, represent a direct threat to the utility's preferred closed-loop system. Distributed generation, a greater ability to control energy usage, and the rise of communication and data products are being driven by disruptive entities, not traditional utilities. Many of these disruptive energy service providers are

[6] Richard F. Hirsh, *Power Loss* 51–54 (1999).
[7] *Id.* at 30 (1999).
[8] Mass. Inst. Tech., MIT Energy Initiative, *Utility of the Future* 10–12 (2016).

eager to provide customers with value-added services.[9] One possible worst-case scenario for utilities is to enter into a "death spiral," whereby increasing defections from the grid cause increases in rates, which in turn motivates additional ratepayers to defect from the grid—and so on. Such a scenario, however unlikely, would cause harm to many ratepayers who could not afford to defect from the grid and would spell the end for electric utilities as they are now known.

In response to a number of these concerns, several states have embarked upon expansive efforts to reform the regulatory structure and the utility business model. A number of these efforts are premised upon a perceived failure of traditional cost-of-service ratemaking.[10] One solution that has been proposed is to begin to use performance-based compensation—some combination of performance metrics and incentives—to wean utilities off of cost-of-service rates and the attendant incentives created by that structure. For example, New York has sought to establish explicit financial incentive mechanisms based on utilities' performance in meeting new objectives set by New York regulators.[11] These initiatives seek to utilize performance-based

[9] For a discussion of value-added services and the differing perspectives of utilities, third-party providers, and consumer advocates, see Jonathan Blansfield, Lisa Wood, Ryan Katofsky, Benjamin Stafford, Danny Waggoner, and the Nat'l Ass'n of State Utility Consumer Advocates, Future of Electricity Regulation Report No. 9, *Value-Added Electricity Services: New Roles for Utilities and Third-Party Providers* (Oct. 2017).

[10] *See, e.g. Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. D.P.S. Docket No. 14-M-0101, Staff White Paper on Ratemaking and Utility Business Models 21 (Jul. 28, 2015) (noting that the "cost-of-service approach is insufficient in the face of accelerating technology and market trends"); Rhode Island Div. of Pub. Util., Office of Energy Resources, & Pub. Util. Comm'n, *Rhode Island Power Sector Transformation* 13 (Nov. 2017) (noting that the assumptions of the past fifty years with respect to utility regulation are no longer valid and that "it is appropriate for state policymakers to ask whether the traditional regulatory framework and utility business model continues to advance the public interest and state objectives"); Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 13 (Jan. 2016) (describing an Alberta Utility Commission declaration that "this initiative proceeds from the assumption that [cost-of-service ratemaking] offers few incentives to improve efficiency, and produces incentives for regulated companies to maximize costs and inefficiently allocate resources . . . .").

[11] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. D.P.S. Docket No. 14-M-0101, Order Adopting a Ratemaking and Utility Revenue Model Policy Framework 53–74 (May 19, 2016) (noting that the earnings adjustment mechanisms ("EAMs") would help utilities in transitioning to revenues generated by platform services).

compensation to alter a utility's implicit incentives by creating new revenue streams based on performance, not assets.

There have been efforts in Minnesota, this docket included, to address changes to the industry. For example, a multiyear rate plan can—in theory—provide utilities with additional flexibility to react to changing business conditions. A more formal move toward performance-based compensation has also been raised by some as a way for utilities to reorient its business model to accommodate emerging industry trends.[12]

Directly addressing these changes to the electricity sector now has the potential to provide ratepayers with benefits of these new products and services offer in the future. This will also provide stakeholders with clarity. In addition, learning from other states' experiences will prepare Minnesota regulators, stakeholders, and utilities with valuable lessons for the future. Performance metrics and possibly penalty/incentive mechanisms are likely to play a prominent role in future electric utility regulation. But there are many potential pitfalls along this path that could result in harm to ratepayers. Because of these concerns, which are discussed below, the Commission should proceed deliberately toward this future.

C. THE COMMISSION SHOULD PROCEED WITH DELIBERATE PACE TO MINIMIZE RATEPAYER RISK.

It is tempting, when studying the trends in the electricity sector and other jurisdictions' responses to the changes, to feel the need to "catch up" to early adopters. But there is a real benefit to be gained by learning from these jurisdictions, applying the lessons to Minnesota, and then moving in a deliberate manner toward implementation, if such a path is deemed reasonable by the Commission. There are compelling reasons for adopting this measured pace.

[12] *See generally* e21 Initiative, *Phase I Report: Charting a Path to a 21st Century Energy System in Minnesota* (Dec. 2014).

First, a significant amount of time and resources will be necessary if the Commission desires to move toward performance-based compensation, as evidenced by the experiences of other jurisdictions. In the United Kingdom, which transitioned from an innovative multiyear rate plan model to a fundamentally different regulatory structure called RIIO, its staff more than doubled, from about 300 full-time employees to more than 750 in five years.[13] New York first addressed performance metrics and reporting scorecards in 2014, when staff proposed a list of outcomes for its Reforming the Energy Vision ("REV") proceeding.[14] Performance metrics related to REV were refined in a 2015 staff white paper and again in a 2016 commission order. The 2016 order established a collaborative process for the development of metrics to track and identified a "non-exhaustive" list of ten areas to potentially develop metrics, which would be reported using a utility "scorecard."[15] A 2017 progress report on this collaborative process indicated that metrics development would not begin until 2018.[16] Even with "wide support among parties" for its preferred approach to metrics, it is likely to take nearly a half-decade before the first metric is reported in New York.[17] Finally, the Ontario Energy Board began an initiative in 2010 to develop a new regulatory approach for its distribution utilities.[18] In 2012,

[13] Melissa Whited, Tim Woolf, & Alice Napoleon, Synapse Energy Economics, Inc., *Utility Performance Incentive Mechanisms: A Handbook for Regulators* 79 (2015) [hereinafter "*Synapse Handbook*"]. The UK had its multiyear rate plan regulatory regime for a quarter-century prior to this change, ever since it underwent deregulation of its electric utilities. *Id.* at 70–71.

[14] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. D.P.S. Docket No. 14-M-0101, Ruling Posing Questions on Selected Policy Issues and Potential Outcomes, Establishing Comment Process, and Revising Schedule (Jun. 4, 2014).

[15] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. D.P.S. Docket No. 14-M-0101, Order Adopting a Ratemaking and Utility Revenue Model Policy Framework 155 (May 19, 2016). A scorecard is a publicly-facing reporting tool that will be discussed in greater detail in Section X.

[16] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. D.P.S. Docket No. 14-M-0101, D.P.S. Status Report on Scorecard Metrics Collaborative Processes 2 (May 1, 2017).

[17] *Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision*, N.Y. D.P.S. Docket No. 14-M-0101, Order Adopting a Ratemaking and Utility Revenue Model Policy Framework 95 (May 19, 2016).

[18] Ontario Energy Board, Renewed Regulatory Framework for Utilities, Docket No. EB-2010-0377–79, Letter from the Ontario Energy Board (Oct. 27, 2010) (noting that "it is now time for the Board to further investigate its

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after a stakeholder process that included a series of comments and workshops, the Board indicated that the measurement of performance would play an increased role in the proposed regulatory framework.[19] Two years later—and four years after the initiation of the docket—the Board released its proposed performance metric approach.[20]

Second, other jurisdictions have opened similar proceedings by establishing clear objectives, even if at a high level. These objectives can help to define the scope of the proceeding and, ultimately, the performance metrics selected for tracking. For instance, Rhode Island recently initiated a proceeding to "develop[] a more dynamic regulatory framework" that could unleash the potential found in technological advances "by reforming regulatory frameworks that today inhibit the utility from pursuing new technologies and limit the ability of third-party businesses from selling their innovative technologies and services to customers.[21] After a stakeholder process that included representatives from 65 organizations, the Rhode Island energy regulatory agencies established specific goals, regulatory tools, and recommended actions to accomplish the far-reaching objective. Such a process has not yet occurred in this docket.

The third reason to proceed at a deliberate pace is because of the information asymmetry at work between the utility and regulators. There is always a risk of gaming and manipulation of incentive mechanisms by utilities.[22] This risk increases with a rushed process. Although this asymmetry is present throughout traditional cost-of-service ratemaking, it is especially

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(Footnote Continued from Previous Page)
objectives into a renewed regulatory framework which reflects the significant role network investment will have in the years to come.").

[19] Ontario Energy Board, Renewed Regulatory Framework for Utilities, Docket No. EB-2010-0377–79, Report of the Board 55–65 (Oct. 18, 2012).

[20] Ontario Energy Board, Renewed Regulatory Framework for Utilities, Docket No. EB-2010-0377–79, Report of the Board (Mar. 5, 2014).

[21] Rhode Island Div. of Pub. Util., Office of Energy Resources, & Pub. Util. Comm'n, *Rhode Island Power Sector Transformation* 7–9 (Nov. 2017).

[22] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 50 (Jan. 2016).

pronounced when the Commission is considering the adoption of more novel concepts such as performance metrics and performance-based compensation. Although utilities may not traditionally possess expertise in these areas, they have the resources to acquire that expertise.[23] Regulators and consumer advocates generally do not. The beneficiary of a hurried process is the utility, not ratepayers.

D. THE COMMISSION MAY WISH TO ADDRESS THRESHOLD ISSUES IN THIS DOCKET.

OAG Recommendation 1: The Commission may wish to address threshold questions regarding performance metrics and their place in the current regulatory framework that could give shape to a clear objective in this docket.

The experiences of other jurisdictions and the recommendations of experts suggest that Minnesota is at the beginning of a potentially lengthy process. Given the time, resources, and importance of this topic, it is important to set off upon the path that will yield the most benefits to ratepayers. There are several to choose from.

This particular junction, at which the Commission now stands, is directly related to the tension between the traditional regulatory structure and the potentially disruptive future changes to the industry. Down one path is a recommitment to the traditional utility regulatory structure, where performance metrics are tailored toward traditional regulatory outcomes such as service quality and affordability. Another path leads toward a more fundamental rethinking of modern regulation. On this path, performance metrics would focus on emerging regulatory outcomes, such as the promotion of distributed energy resources and grid modernization. The Commission could also choose a path that merges the traditional and modern regulatory outcomes if it so chooses. At this point, the Commission does not necessarily have to envision each twist or turn along the path it ultimately selects. But the definition of a clear objective for what it seeks from

[23] *Id.* at 42–43 (noting that utilities can easily obtain expertise on novel or technical issues).

the establishment of performance metrics in this docket would help stakeholders demarcate a path that ultimately benefit the public.

One way to clearly define objectives in a proceeding like this is to consider a number of threshold questions that "help inform [regulators'] decisions on whether and how to proceed with performance metrics and incentives."[24] These questions prompt discussion of the existing regulatory structure, available policy tools to improve performance, expected changes to the industry, and regulators' preferences as to how to measure performance.[25] Consideration of these issues "will help regulators determine what level of performance regulation is appropriate for their jurisdiction, and what type of performance metrics and incentives to implement."[26]

Another approach to establish clear objectives is to look at the compatibility of the conventional regulatory structure with the desired objectives of the proceeding. "An honest assessment is needed and is not trivial since it is a self-assessment by the regulator of its process."[27] In particular, if the reallocation of risk between ratepayers and utilities is being considered, then the regulator must understand who bears the risk now and what the implications of shifting that risk might be.[28] It may be useful to address the bigger picture questions and goals of a performance metrics proceeding in a more formal manner before the docket proceeds further. A failure to do so risks the creation of solutions to an ill-defined problem.

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[24] *Synapse Handbook* at 51.

[25] The six threshold questions are:

1. How well does the existing regulatory framework support utility performance?
2. How well does the existing regulatory framework support state energy goals?
3. What are the policy options available to improve utility performance?
4. Is the industry, market, or regulatory context expected to change?
5. Does the commission prefer to oversee investments, or to guide outcomes?
6. Does the commission wish to specify the outcomes in advance?

Id.

[26] *Id.* at 52–53.

[27] David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* 36 (Sep. 2017).

[28] *Id.*

These Comments will attempt to address these threshold questions throughout, while also addressing the questions posed by the Commission's Notice. In addition, the design process described below builds in opportunities for discussion of these broader issues. The Commission may, however, wish to address the threshold questions separately in order to clarify the objective or objectives of this proceeding.

To this point, these Comments have been backward-looking, with a goal of establishing some of the big-picture concepts that have animated discussions about utility regulation for more than a century. From this, it should be clear that utilities and many aspects of the regulatory model are purpose-built and endowed with incredibly powerful incentives. The looming disruptive changes to the industry threaten the very existence of utilities. As a result, some jurisdictions are beginning to address future utility regulation. A number of the proposed solutions include a move toward performance-based compensation, which includes performance metrics. Before Minnesota adopts a similar approach, there are important considerations to be addressed which argue for a more deliberate approach.

The next part of these Comments will be forward-looking and will provide recommendations for next steps to be taken by the Commission. This discussion will address concepts included in the Notice and also the threshold issues discussed above. In addition, the following three concepts will be presented for the Commission's consideration: a process the Commission should follow to design and implement performance metrics; a hierarchy to organize possible performance metrics by topic; and a recommendation to adopt a scorecard approach to report metrics once they are selected.

II. A FRAMEWORK APPROACH USING A PERFORMANCE METRICS PROCESS AND HIERARCHY.

There are a number of complicated concepts at issue in this docket. Everything from the broad, overarching goals of utility regulation to the definition of "event" used in the System Average Interruption Duration Index are likely to be addressed. It is thus important that the Commission and stakeholders carefully consider a wide variety of issues in this docket to ensure the best outcome for ratepayers. There are two analytical frameworks that can help to focus discussion at each step along the way and also serve to organize the findings in a logical manner.

First, a deliberative process for the design of performance incentive mechanisms should be adopted by the Commission. This PIM Design Process is a seven-step analysis that regulators can use to first transform broad regulatory goals into robust performance metrics and then add, if necessary, performance targets and incentive (penalty/reward) mechanisms. Second, a hierarchy of performance metrics is a way to organize broad regulatory goals into desired regulatory outcomes into metrics. The first three steps of the PIM Design Process fill in the three levels of the hierarchy. These concepts are described in greater detail below.

A. THE PIM DESIGN PROCESS AND PERFORMANCE METRICS HIERARCHY.

OAG Recommendation 2: The Commission should adopt a deliberative process, described in these Comments as the PIM Design Process, to follow as it considers the implementation of performance incentive mechanisms for Xcel Energy.

Creating a new regulatory tool from scratch is a daunting task. The design and implementation of performance incentive mechanisms, or PIMs,[29] is a complex process with innumerable decision points along the way that can take years to fully implement. It is thus important to have a robust, yet flexible process in place in order to sharpen objectives and move

[29] A number of terms will be used throughout these Comments. A glossary is provided in Appendix I.

the process along to a defined endpoint. Accordingly, the Commission should adopt the PIM Design Process described below.

Figure 1. The PIM Design Process[30]

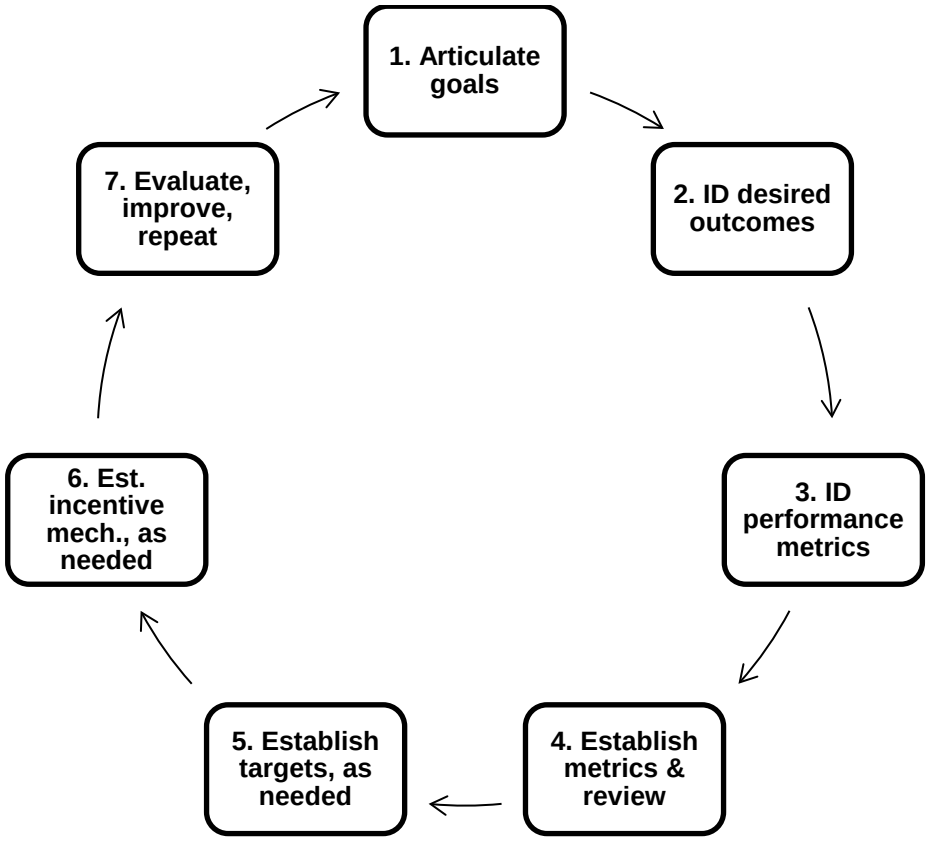


Figure 1 lays out this process, which has been adapted from an essential resource: *Utility Performance Incentive Mechanisms: A Handbook for Regulators*. This general process has also been presented in a number of other resources as well.[31] Each step of the PIM Design Process is described below.

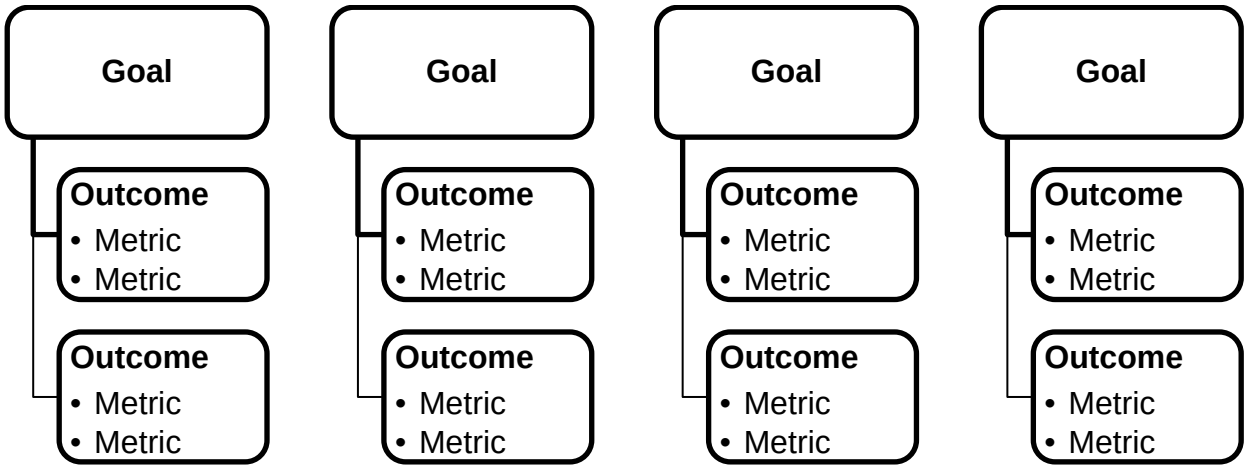
[30] Adapted from *Synapse Handbook* at 5, 52.

[31] *See, e.g.*, Ken Costello, Nat'l Regulatory Research Inst., *How Performance Measures Can Improve Regulation* (Jun. 2010); Sonia Aggarwal & Eddie Burgess, *New Regulatory Models* (Mar. 2014); David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* (Sep. 2017).

1. Steps One through Three: Building a Performance Metrics Hierarchy

The first three steps of the PIM Design Process establish a hierarchy that can be used as a framework for the analysis itself. This three-level hierarchy begins at broad regulatory goals, which inform desired regulatory outcomes, which in turn inform possible performance metrics. This organization is visualized in Figure 2, below.

Figure 2. Goals-Outcomes-Metrics Hierarchy



The metrics hierarchy helps to transform broad regulatory goals, which are by nature aspirational and broad, into actionable performance metrics. This structure clarifies the relationships in the path from regulatory goal, to desired outcome, to metric—and back again. These first three steps are described in greater detail below.

a) Step One: Articulate regulatory policy goals.

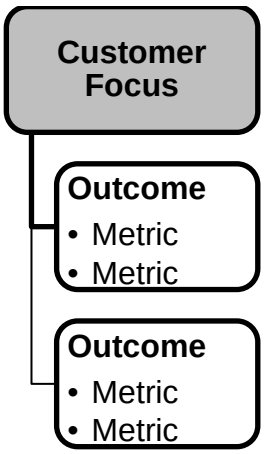
The first step of the process is to identify and articulate regulatory policy goals that the state wishes to achieve.[32] Once identified, these goals can ultimately help to focus the identification and selection of potential metrics to track. These regulatory policy goals should be broadly defined to provide certainty and flexibility to stakeholders over time.

[32] *Synapse Handbook* at 5, 17–27.

Regulatory policy goals should be responsive to the fundamental reasons for utility regulation. Regulatory policy goals should thus be informed by a utility's core obligations of service. In other words, in exchange for the protection of monopoly power and cost-of-service ratemaking, utilities are obligated to meet certain goals that are important to regulators, who are a proxy for ratepayers. These aspirational goals form the top portion of the metrics hierarchy.

For illustration purposes, a hypothetical branch of the metrics hierarchy will be filled in as the first three steps of the PIM Design Process are introduced, beginning with a regulatory policy goal here: Customer Focus. This regulatory policy goal will be described in greater detail below, but it is drawn from the utility's obligation to provide electricity service that responds to its customers' needs and preferences. Specific recommendations for regulatory policy goals that should be adopted by the Commission in this docket are found in Section III.A.

Figure 3. Goals-Outcomes-Metrics Hierarchy with customer focus regulatory goal.



This important first step in the PIM Design Process allows regulators to give holistic consideration to the fundamental goals of regulation and then to affirmatively declare the goals. After this step, the next task is to identify the desired regulatory outcomes.

b) Step Two: Identify desired regulatory outcomes.

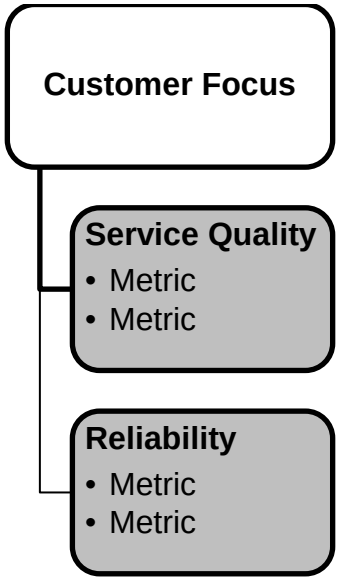
Once the regulatory goals have been identified, the next step is to determine the desired outcomes of regulation.[33] Outcomes describe "how utility services affect ratepayers and society."[34] These outcomes add specificity to the broader, aspirational regulatory goals. The Commission noted a number of regulatory outcomes in its Notice by listing affordability, reliability, customer satisfaction, and environmental performance.[35]

Identifying desired outcomes requires an assessment of the existing regulatory structure and the incentives that are bound up in it. This can lead to deep insights into the core motivations of utilities. In particular, this assessment can identify functions that a utility should

[33] Other resources have used the term "performance areas/dimension" (Synapse) or "guiding incentive" (NREL) when referring to desired regulatory outcomes. *Synapse Handbook* at 19; David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* 37–38 (Sep. 2017).
[34] David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* 37 (Sep. 2017).
[35] There is a difference in nomenclature; the Commission's Notice called these topics "regulatory goals," but under the hierarchy described in these Comments, they are more accurately called desired regulatory outcomes.

perform at a high level, and those that it may find difficult to accomplish. For example, a utility under cost-of-service regulation is incentivized to cut costs between rate cases.[36] In general, an incentive to contain costs is beneficial. But utilities may be incentivized to cut costs in areas such as service quality and reliability, which would be harmful to ratepayers.[37] To avoid this harm, regulators have long-focused on a utility's service quality and reliability. Put another way, regulators have identified service quality and reliability as desirable outcomes of regulation. Figure 4 illustrates the relationship between these outcomes and the broader regulatory goal of focus on the customer.

Figure 4. Goals-Outcomes-Metrics Hierarchy with service quality and reliability outcomes.



Service quality and reliability are well-established regulatory outcomes, but there are a number of new outcomes that may also be considered in this proceeding. Regulators across jurisdictions are beginning to focus attention on new aspects of utility performance, such as

[36] Since rates are based in part upon a utility's test year expenses, once final rates are implemented, a utility will be incentivized to cut costs to increase earnings.
[37] Since many of its ratepayers are captive, a utility has an incentive to cut costs in service quality and reliability during this time.

overall system efficiency, use per customer, customer engagement, network support services, and environmental and energy goals.[38] The metrics hierarchy is designed to accommodate these emerging and innovative regulatory outcomes, as they are compatible with the broader regulatory goals established in the previous step. For example, customer engagement is an outcome related to the regulatory goal of customer focus (and possibly others).

There should also be a reassessment of existing regulatory tools and/or metrics, especially those related to the desired regulatory outcomes. For instance, there are a number of existing metrics for service quality and reliability. Gathering this information can yield insight into current utility performance and it can help regulators and stakeholders take stock of how the metrics themselves are performing. This cataloging and assessment process occurs in step three of the PIM Design Process.

c) Step Three: Identify possible performance metrics.

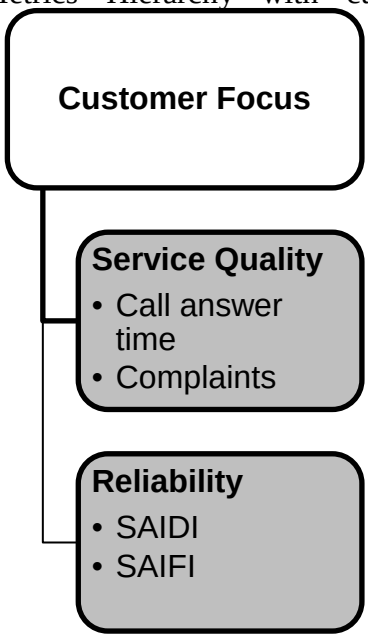
Step three of the PIM Design Process continues the transformation of broad regulatory goals, to desired outcomes, and finally to ways of measuring performance. If an outcome describes the topic of regulatory interest, then a metric is the way to measure a utility's performance in achieving that particular outcome. A metric is simply a standard of measurement that can allow regulators to determine how well a utility is performing in an area of interest.[39] A metric should be "quantifiable, verifiable, and consistent with state energy policies,"[40] among other qualities.[41]

Metrics are grouped according to the corresponding regulatory outcome. For example, call answer time and customer complaints are traditional performance metrics related to the

[38] *Synapse Handbook* at 19.
[39] *Id.*
[40] Minn. Stat. § 216B.16, subd. 19(a) (2017).
[41] Additional metric design principles are listed below, in Section X.X.

regulatory outcome of service quality. Similarly, metrics like SAIDI and SAIFI are traditional metrics used to measure performance of the desired regulatory outcome of reliability. See Figure 5, below, for a visualization of this concept.

Figure 5. Goals-Outcomes-Metrics Hierarchy with customer focus regulatory goal.



There are numerous performance metrics available to measure more traditional aspects of utility service, like service quality and reliability. Performance metrics related to emerging regulatory outcomes, such as grid modernization, distributed energy resources ("DERs"), and environmental issues exist, but are still developing in many cases. Section III.C.1, below, will provide several design principles to apply to the selection of performance metrics. Once the difficult task of selecting performance metrics has been completed, the next step is to determine how the metrics will be reported.

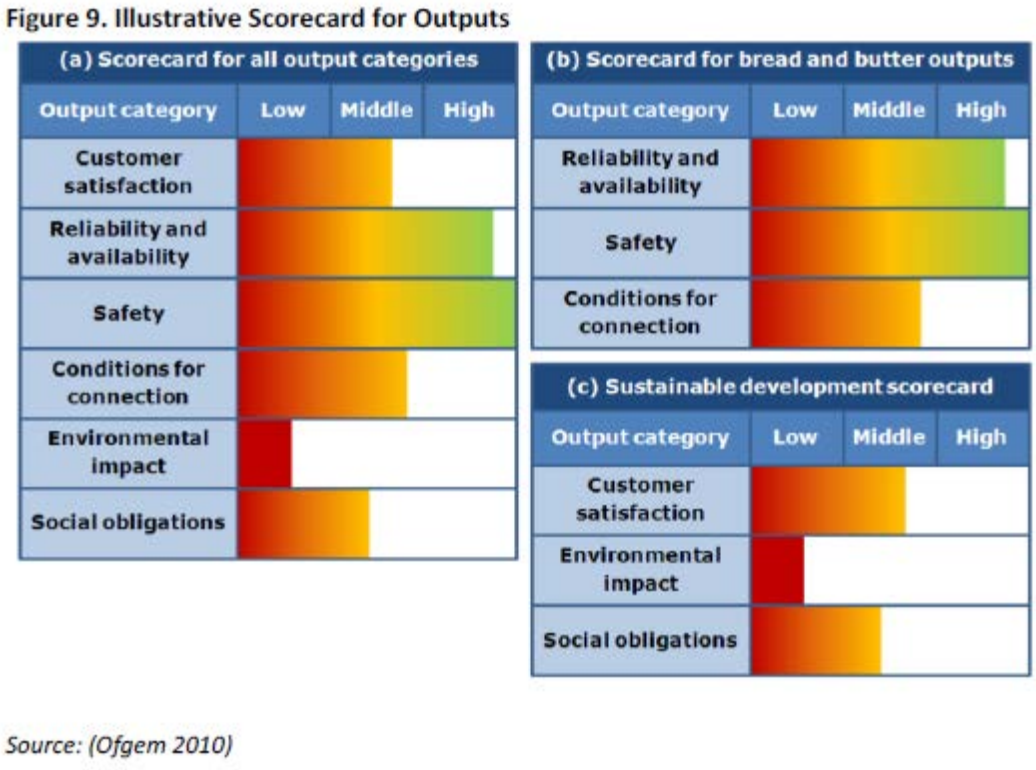
2. Step Four: Establish performance metrics and reporting requirements.

Once appropriate metrics are identified, the fourth step is to implement reporting requirements for the suite of metrics selected by the Commission. This is an important step because it can be used to increase the accountability of utilities, which should also increase the power of metrics in changing a utility's behavior and incentives.

Reporting can be accomplished in traditional docketed filings or, in addition, via a public-facing "scorecard,"[42] which a number of other jurisdictions have adopted.[43] "Scorecards, with clear metrics and mandated formats approved by regulatory authorities, and designed with broad utility and stakeholder input, may become a hallmark of 21st century power sector regulation."[44] A successfully designed and implemented scorecard will present information in an accessible, clear, comprehensive, and up-to-date manner.[45] Scorecards are often presented on a designated website and present both interactive graphs and downloadable data.[46] A viewer should be able to quickly interpret a utility's high-level performance by utilizing only the information contained on the scorecard. Below, an illustrative example of a scorecard from the Synapse Handbook shows how a scorecard can facilitate a quick assessment of utility performance.

[42] Another term used to describe this reporting method is "dashboard," which can also imply that more customization and interaction is available to interested users than a static scorecard.
[43] Illinois, REV, Ontario, RIIO.
[44] David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* 80 (Sep. 2017).
[45] *Synapse Handbook* at 32.
[46] *Id.*

Figure 6. Illustrative scorecard for UK RIIO.[47]



Source: (Ofgem 2010)

There are a number of benefits associated with the use of scorecards for reporting. For one, they can help to contextualize recent performance via comparisons to historical performance or by peer benchmarking.[48] Scorecards can also ease the regulatory burden by compiling performance statistics from a number of various filings made in separate dockets.[49] Finally, the act of tracking and reporting performance metrics alone can provide utilities with significant performance incentives through the use of transparency as a regulatory tool.

[47] *Id.* at 78.
[48] *Id.* at 31.
[49] *Id.*

3. Steps Five through Seven: Performance targets, financial incentives, and evaluation.

Steps five to seven of the PIM Design Process, which addresses performance targets and financial mechanisms as well as program evaluation, are outside of the scope of these Comments and will be addressed in a future phase.[50] These steps are also covered in detail in chapters four and five of the *Synapse Handbook*. Given the complexity of these topics, and the potential for significant change to the regulatory structure that could occur as a result, each of these steps should be addressed in a separate phase of this investigation. Recommendations for next steps are found in Section IV. At the present time, the Commission should limit its focus to the first four steps of the PIM Design Process, for reasons described below.

B. THE COMMISSION SHOULD ADDRESS THE FIRST FOUR STEPS IN THIS PHASE OF THE DOCKET AND DECLINE TO MOVE FORWARD WITH A FINANCIAL INCENTIVE AT THIS TIME.

OAG Recommendation 3: Phase 1 of this investigation, which the Commission can move forward with immediately, should be restricted to the first four steps of the PIM Design Process: articulation of state energy goals, identification of desired outcomes, identification of possible metrics, and the establishment of metrics reporting requirements.

OAG Recommendation 4: The Commission should decline to adopt a financial incentive mechanism during this phase of the docket because performance metrics alone can provide benefits to the public, adding a financial incentive during the MYRP would distort the assessment of the MYRP, and it is unclear how performance-based compensation could work with a vertically-integrated utility like Xcel.

There is an understandable excitement generated by the notion of a more performance-oriented approach to utility regulation. Advances to technology and evolving customer preferences may be driving a new era in the electricity sector, which could unlock tremendous societal benefits is properly implemented. In addition, there appears to be a sentiment by some

[50] Commission's Notice of Comment Period at 2 (noting that a "second phase will focus on how performance measurements and standards developed in the first phase may be used or applied by the Commission, including possible standards or performance targets and the potential for using financial incentives to drive Xcel's performance.").

commentators that the traditional utility regulatory structure may not be suitable to accommodate these potentially disruptive changes on the horizon.

But there is also significant risk to marching toward a performance-based compensation approach, especially without a clear objective. These Comments have already addressed why the Commission should proceed at a deliberate pace in this docket. This section will explain why it is necessary to limit discussion in this phase of the docket to the first four steps of the process and to avoid implementation of any financial incentives at this time.

First, working through the first four steps of the process would itself be a significant accomplishment. This docket presents a rare opportunity for the Commission, utilities, and other stakeholders to take stock of the existing regulatory system and to chart a path forward. If the Commission, with the help of stakeholders, can transform broad regulatory objectives into robust performance metrics and also develop a reporting mechanism that increases transparency and accountability, the docket will have yielded significant benefits to the public.

Second, the Commission recently approved Xcel's four-year multiyear rate plan ("MYRP") with a structure that was the result of a settlement agreement amongst several parties. As will be discussed in greater detail below, MYRPs can provide benefits to the public, but only if they are carefully designed and implemented. The Commission should take the time remaining in the current MYRP to establish metrics to track the outcomes of the plan as it was approved in the settlement. The results may indicate that a more robust MYRP framework may be necessary before the Company files its next rate case. The addition of an incentive mechanism carries with it the risk of unintended consequences regardless of the context. The addition of an incentive mechanism during a first-of-its-kind MYRP would almost certainly lead to harmful results for ratepayers.

Finally, the fact is that a number of the states described herein regulate distribution-only utilities, not vertically-integrated utilities. As a result of this structure, it may be difficult to provide an alternative financial incentive that is strong enough to discourage a vertically-integrated utility from its capital bias without failing a cost-benefit analysis. In addition, the structure of vertically-integrated utilities, and the complex structure of incentives that creates, could make it difficult to separate the signal coming from performance metrics from the unrelated noise. Before turning to the design of financial incentives, the Commission must first consider whether a financial incentive is even feasible. Because of these risks, the OAG recommends that the Commission decline to adopt any performance-based financial incentive at this time.

The first two sections of these Comments have covered the broad concepts that underlie utility regulation and a process for designing performance metrics. The next section will apply the first four steps of the PIM Design Process to the present docket.

III. ANALYSIS OF THE PIM DESIGN PROCESS STEPS

This section will analyze each of the first four steps of the PIM Design Process. First, what regulatory policy goals should be adopted by the Commission in this proceeding? Second, what desired outcomes should the Commission adopt? Third, what performance metrics should be adopted to measure performance in meeting the desired outcomes? And fourth, how should performance metrics results be reported?

A. STEP ONE: CONSIDERATION OF STATE ENERGY REGULATORY POLICY GOALS.

OAG Recommendation 5: The Commission should establish the following four regulatory policy goals: customer focus; operational effectiveness; public policy responsiveness; and financial performance.

The first step in the PIM Design Process is the consideration of state energy regulatory policy goals. Recall that these regulatory policy goals are the broad, overarching goals that

relate to utility regulation. It thus follows that the regulatory goals for Minnesota can be found codified in the statute establishing modern public utility regulation in the state. The statute, in pertinent part, reads:

> It is hereby declared to be in the public interest that public utilities be regulated as hereinafter provided in order to provide the retail consumers of natural gas and electric service in this state with **adequate and reliable services at reasonable rates**, **consistent with the financial and economic requirements of public utilities** and their need to construct facilities to provide such services or to otherwise obtain energy supplies, **to avoid unnecessary duplication of facilities which increase the cost of service to the consumer** and to minimize disputes between public utilities which may result in inconvenience or diminish efficiency in service to the consumers.[51]

There are a number of key concepts embedded within this declaration. These concepts form the basis for four overarching regulatory policy goals: customer focus; operational effectiveness; public policy responsiveness; and financial performance.

First, there is a focus on the customer, by requiring utilities to furnish "adequate and reliable services at reasonable rates."[52] These requirements form the core of the utility's obligations under the regulatory compact.[53] This regulatory goal leads to many of the traditional regulatory outcomes and related metrics.

Second, operational effectiveness is emphasized by the need to "avoid unnecessary duplication of facilities which increase the cost of service" to ratepayers.[54] The regulatory goal of operational effectiveness requires utilities to deliver obligations of service in a least-cost

[51] Minn Stat. § 216B.01 (2017) (emphasis added); *see also* Minn. Stat. § 216B.16, subd. 6.
[52] Minn Stat. § 216B.01 (2017); *see also* Minn. Stat. § 216B.03 (requiring just and reasonable rates).
[53] The regulatory compact describes the implicit agreement between the state and utilities, which are granted monopoly power in exchange for fulfilling certain ratepayer obligations.
[54] Minn Stat. § 216B.01 (2017).

manner to ratepayers. A number of regulatory tools, including integrated resource plans, MYRPs, and prudency reviews are intended to promote operational effectiveness.

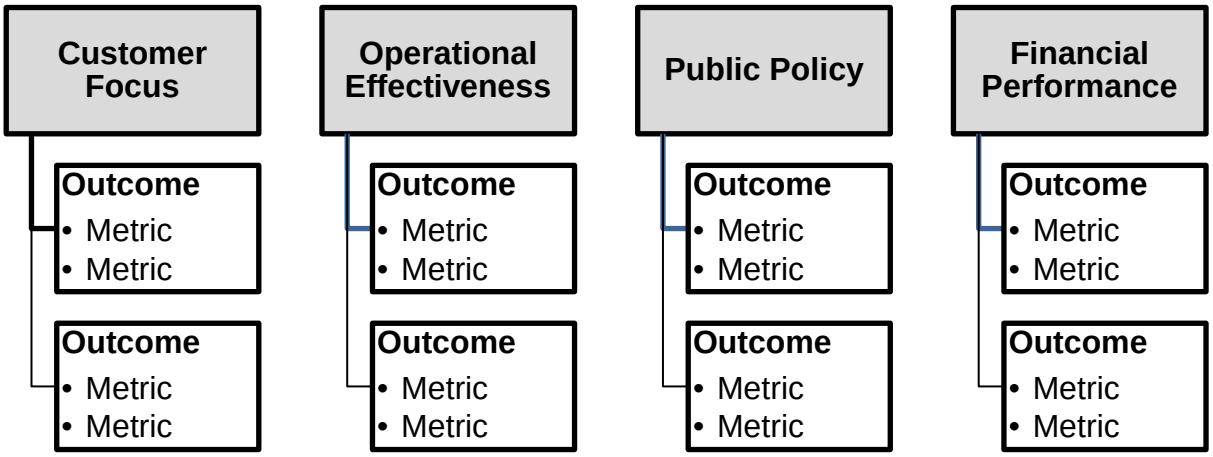
A third goal is embodied elsewhere in the public utilities statute, which requires utilities to be responsive to emerging public policy concerns such as energy efficiency and renewable energy procurement.[55] As new policy concerns arise, utilities are obligated to be responsive to those changes. But because a number of new policy concerns may cut against a utility's implicit incentives, regulators are often faced with the challenge of layering on new incentives to achieve utility performance.

Fourth, the need to ensure that utilities' "financial and economic requirements" are met by regulators.[56] This regulatory goal is most clearly applied during return-on-equity disputes during utility rate cases and rider proceedings. Under Minnesota's cost-of-service structure, utilities are allowed to earn a return on capital expenditures.

Together, these form the core regulatory policy goals in Minnesota: customer focus, operational effectiveness, public policy responsiveness, and financial performance. Below, Figure 7 shows these regulatory policy goals in the metrics hierarchy.

[55] *See* Minn. Stat. § 216B.03 (2017) ("To the maximum reasonable extent, the commission shall set rates to encourage energy conservation and renewable energy use and to further the goals [of other energy conservation-related statutes].").
[56] Minn Stat. § 216B.01 (2017).

Figure 7. Recommended regulatory policy goals: customer focus, operational effectiveness, public policy responsiveness, and financial performance.



These policy goals have deep roots in the history of public utility regulation. Cost-of-service ratemaking arose from these concepts to form present-day utilities. As the changes to the industry lead to possible changes in the regulatory structure itself, these regulatory goals can adapt to meet the needs of future utilities, regulators, and ratepayers.

1. **Traditional utility regulatory goals can be effectively applied to a rapidly-changing electricity industry.**

The regulatory policy goals of customer focus, operational effectiveness, financial performance, and public policy responsiveness can be applied to modern utility regulation.[57] This is one of the primary benefits of establishing broad, yet flexible regulatory goals: they allow regulators to be nimble while also adhering to foundational principles of utility regulation.

For example, a focus on the customer in the mid-twentieth century meant that utilities were obligated to deliver safe, reliable, and affordable electricity service to its ratepayers. These same expectations remain in today's changing electricity industry, but there are additional

[57] As evidence of this modern applicability, these regulatory policy goals were adopted by the Ontario Energy Board in its ongoing proceeding to revise its regulatory framework. Ontario Energy Board, Renewed Regulatory Framework for Utilities, Docket No. EB-2010-0377–79, Report of the Board 2 (Oct. 18, 2012).

requirements as well. For instance, some customers today prefer to exert more control over their electricity usage. Whether through self-generation, smart appliances, or by charging an electric vehicle, these consumers require more than "plain old electric service." Meeting the needs of these ratepayers while treating all ratepayers equitably will be a central challenge for regulators in the coming years.

The other three regulatory goals will undergo similar changes, each with their own challenges, as the industry continues to evolve. Any attempt by regulators, stakeholders, and utilities to confront these challenges should begin with these core regulatory goals. Starting at this point will help to ensure that the resulting policy tool, whether it is performance metrics or something else, will be animated in design and implementation by these goals.

This section focused on broad, foundational concepts and goals of utility regulation. The next section will begin the transformation of these goals into actionable, specific performance metrics by identifying desired regulatory outcomes.

B. STEP TWO: IDENTIFICATION OF DESIRED REGULATORY OUTCOMES.

OAG Recommendation 6: The Commission should find that the current regulatory system in Minnesota is rooted in cost-of-service ratemaking, which incentivizes utilities to pursue capital expenditures, increase sales, and cut costs between rate cases.

OAG Recommendation 7: The Commission should establish near-term regulatory outcomes intended on making the existing regulatory structure function more efficiently and equitably, while also establishing desired outcomes to ensure that Minnesota ratepayers benefit from emerging technologies and services in the long-term.

The next step toward the development of PIMs is to identify the desired regulatory outcomes. Regulatory outcomes, or performance areas, are related to the regulatory policy goals. The regulatory outcomes could describe traditional areas such as service quality, affordability, and reliability or more modern areas such as grid modernization, distributed energy resources, or social equity.

The selected regulatory outcomes are organized under a regulatory policy goal in the metrics hierarchy. There may be some outcomes that could fit under multiple goals, but it is important that they fit under at least one. An ill-fitting outcome is a likely symptom that the desired outcome itself is incompatible with the overarching goals of utility regulation.

The selection of desired regulatory outcomes has a direct impact on the list of available performance metrics. This can help to filter the possible performance metrics, but it also means that the selection of regulatory outcomes is a critical step in the PIM Design Process. A potential metric cannot be considered if it is not tied to a regulatory outcome.[58] The Commission has already begun the work of establishing the desired outcomes.

In its Notice, the Commission listed "[k]ey goals of utility regulation, traditional or performance-based, include reasonable, affordable rates, reliable service, customer service and satisfaction, and environmental performance."[59] This is a good start to a list of desired regulatory outcomes. Before adding to this list, however, it is useful to first consider how the current regulatory structure in Minnesota, in particular as it is applied to Xcel, creates implicit and explicit incentives that give rise to a more expansive list of desired regulatory outcomes.

1. The current regulatory structure in Minnesota affects the desired regulatory outcomes.

Desired regulatory outcomes should be tied to broad regulatory goals, but also tailored to conditions present in the existing regulatory structure. In other words, consideration of the underlying regulatory structure and any regulatory tools currently in use could yield insight into appropriate regulatory outcomes. For example, a utility with a pass-through fuel clause does not

[58] This ensures that metrics are effective and prevents metrics that report information without conveying useful information about a utility's performance in achieving a desired regulatory outcome.
[59] Notice of Comment Period. Note that the under the metrics hierarchy, the Commission's "goals" become desired outcomes.

have as strong of an incentive to limit fuel-related costs as a utility without a fuel clause. Therefore, one desired regulatory outcome could be cost control. This section will briefly explain the existing regulatory structure in Minnesota, including a host of regulatory tools, such as a fuel clause, that have been added over time. This discussion will help fill out the list of desired regulatory outcomes.

a) Traditional cost-of-service regulation.

First, the traditional regulatory regime, cost-of-service ratemaking, has long been the standard for state utility regulation. This particular model rose to prominence in the U.S. during a time—the first half of the 20th Century—of increasing sales and decreasing costs. Proliferation of electricity service was itself the premier investment driver and state policy goal.[60] In this traditional cost-of-service regulatory model, review and expertise relies heavily on accounting principles and rates are based on test years with known and measureable costs.

There are powerful incentives built into this model of regulation, as described above. Utilities have a strong financial incentive to: maximize capital expenditures, which increase rate base and thus increase profits;[61] increase profits by increasing sales;[62] and cut costs between rate cases.[63] Under this model, utilities have a weak incentive to: control and reduce risk;[64] allow

[60] Utility pioneers like Samuel Insull developed a "grow-and-build" strategy in the early 20th Century, whereby the aggressive promotion of the sale of electricity provided justification for new electricity generation. This strategy, which led to proliferation of electricity and reduced costs (and rates) helped to drive electricity regulatory policy for nearly a half-century. Richard F. Hirsh, *Power Loss* 33–54 (1999).

[61] *Synapse Handbook* at 11 (noting that prudency reviews can be "rare, burdensome, and mostly applied to large capital expenditures.").

[62] *Id.* "Whenever a utility's short-term marginal costs are lower than its average costs (i.e., the costs embedded in rates), then it can increase profits by increasing sales." *Id.*

[63] This incentive can cut both ways; if a utility can reduce its costs between rate cases, it profits, but when its costs increase, then it must wait for relief until after a rate case is filed, litigated, and final rates are approved. *Id.*

[64] "Under traditional cost-of-service regulation, utilities are generally permitted to recover all capital costs, with a profit. This certainty of cost recovery provides little incentive to reduce risks associated with major capital expenditures . . . ." *Id.* at 12.

and efficiently utilize distributed energy resources (DER);[65] or innovate.[66] This model persisted from the early twentieth century and into the 1970s.

b) Modern cost-of-service regulation.

In the 1970s, as utilities and ratepayers faced increasing energy prices, declining productivity, and a growing awareness of energy conservation, regulators began to implement new tools designed to change utility incentives.[67] The changes to traditional cost-of-service regulation have developed in a piecemeal fashion since then, in response to discrete policy issues. For example, the utility's incentive to increase sales is misaligned with the state policy goal of energy efficiency. In response, the state created a demand side management financial incentive intended to correct, in part, the strong incentive to sell energy. In another example, the utility's incentive to spend capital on generation assets is controlled by integrated resource planning. Table 8 lists and describes several of these tools and the implicit incentive or market failure that gave rise to the tool.

[65] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 13 (Jan. 2016) (noting that DERs "pose special incentive issues" under cost-of-service regulation because they decrease revenue from usage charges in the short-term and reduce opportunities for utilities to grow rate base).

[66] Once utilities had established the basic infrastructure and technology of the hub-and-spoke electricity grid, the industry spent the next fifty years stifling "radical inventions that could upset the central station paradigm and threaten established financial interests." Richard Hirsh, *Power Loss* 52 (1999). "Utilities . . . fall short in their R&D activities and deployment of new technologies." Ken Costello, Nat'l Regulatory Research Inst., *Multiyear Rate Plans and the Public Interest* 10 (Oct. 2016).

[67] *See* Richard F. Hirsh, *Power Loss* 133–189 (1999) (describing this period of change in the U.S. electricity sector).

Table 8. Regulatory tools and the implicit incentives they address.

Regulatory Tool	Description/Rationale	Implicit Incentive
DSM Financial Incentive	A PIM that encourages utility spending on energy efficiency and conservation through financial payouts.	Increasing sales
Fuel Clause	Reduces the frequency of rate cases due to fluctuating fuel costs.	Rate case frequency
Revenue Regulation (Decoupling)	Provides a utility with revenue stability and weakens the "throughput incentive."	Increasing sales
Integrated Resource Planning	A process to encourage least-cost future utility investments.	Capital spending
Riders/cost trackers	Allows for out-of-rate case recovery of specific expenses.	Regulatory lag
Future test years	Allows utilities to establish rates based on projected revenue requirements, as opposed to historical expenses.	Regulatory lag
Multiyear Rate Plan (MYRP)	Allows utilities to receive regular rate increases over a set period of time.	Regulatory lag, cost control

These regulatory tools have been added over the years with an impact that is difficult to quantify, but undoubtedly significant. To better understand the impact of these changes on utility drivers, it is perhaps more instructive to consider what has not changed, instead of what has changed. For instance, modern cost-of-service regulation still features a strong incentive for utilities to invest in capital projects, as rates (and earnings) are still reliant upon additions to rate base. And although decoupling diminishes the throughput incentive, utilities still have an incentive to increase sales in order to justify investments based upon peak demand. In addition, utilities still have a strong incentive to cut costs between rate cases. The additional regulatory tools as well as emergent (since the 1970s) policy goals of regulators have not necessarily altered a vertically-integrated utilities' incentives so much as they have diverted attention to new areas.[68]

[68] This is not meant as an editorial on state policy goals; rather, as a testament to the complexity of the drivers that now act upon regulated utilities.

Of particular note to this proceeding is the emergence of MYRPs in Minnesota in recent years.[69] MYRPs are the most common approach to PBR across the world.[70] The most definitive attributes of this model are a fixed, multiyear period between rate cases, a productivity factor to incentivize increased productivity during the rate plan period,[71] efficiency carryover mechanisms to encourage long-term productivity,[72] and PIMs to prevent service quality degradation, among other outcomes.[73] Xcel Energy's current multiyear rate plan does not formally contain any of these features.

In general, MYRPs can represent another step away from traditional cost-of-service regulation because revenue (or price) increases can be designed to reflect cost pressures as opposed to actual changes to costs-of-service; the magnitude of the step depends upon the jurisdiction.[74] One potentially positive outcome of increasing the duration of time between rate cases can be an increased productivity demonstrated by the utility.[75] This should result in increased productivity—and lower costs—over the plan years, but the design of certain aspects of the MYRP, such as the attrition relief mechanism and the efficiency carryover mechanism,

[69] The Minnesota Legislature enacted the first version of the multiyear rate plan in 2011. CH. 97 S.F. No. 1197 (codified in 216B.16, subd. 19).
[70] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 24 (Jan. 2016).
[71] This concept is often included in attrition relief mechanisms ("ARMs") as a way to index future productivity growth based upon peer group indexing. *Id.* at 27–28.
[72] An efficiency carryover mechanism limits true-ups of a utility's revenue to cost once a multiyear rate plan concludes. Mark Newton Lowry, J. Deason, M. Makos, & L. Schwartz, U.S. Dep't of Energy Grid Modernization Laboratory Consortium, *State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities* 4.8 (Jul. 2017)
[73] *Id.* at 13–14.
[74] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 24 (Jan. 2016). The report uses an example from the northeastern U.S., where distribution electric utilities were paid a set fee to provide electricity service with revenue that was independent of their own cost of service. *Id.* Minnesota law requires a multiyear rate plan to be based upon "the utility's reasonable and prudent costs of service over the term of the plan." Minn. Stat. § 216B.16 subd. 19(d) (2017).
[75] Mark Newton Lowry, J. Deason, M. Makos, & L. Schwartz, U.S. Dep't of Energy Grid Modernization Laboratory Consortium, *State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities* 5.1–2 (Jul. 2017) (finding that significant costs savings can be realized under certain scenarios).

must be carefully considered to provide utilities with the right balance of incentives. Another potential outcome of a MYRP is an increased incentive to contain costs using distributed energy resources and other strategies;[76] although again, the design details matter.

c) Minnesota's regulatory structure: modern cost-of-service.

The current regulatory structure in Minnesota is firmly rooted in cost-of-service ratemaking, which incentivizes utilities to pursue capital expenditures, increase sales, and cut costs between rate cases. Even the recent move toward MYRPs retains core elements of traditional cost-of-service ratemaking.[77] Vertical integration of utilities in Minnesota also serves to amplify several of these incentives, particularly the incentive to spend on capital investments, and to prefer capital investments over operations-side solutions.[78]

The takeaway from this step in the PIM Design Process may be that the more things change, the more they stay the same. In other words, despite recent changes to the electricity system and to utility regulation in recent decades, the implicit incentives rooted in traditional cost-of-service regulation still remain a potent force. This conclusion matters because it clarifies the existing structural utility financial incentives and it places bounds on the extent that add-on PIMs alone can achieve transformational change. Absent a fundamental shift in the utility

[76] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 24 (Jan. 2016); Mark Newton Lowry, J. Deason, M. Makos, & L. Schwartz, U.S. Dep't of Energy Grid Modernization Laboratory Consortium, *State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities* 3.8 (Jul. 2017) (finding that significant costs savings can be realized under certain scenarios).

[77] Minn. Stat. § 216B.16, subd. 19(d) ("Rates charged under the multiyear rate plan must be based only upon the utility's reasonable and prudent costs of service over the term of the plan, as determined by the commission, provided that the costs are not recovered elsewhere in rates."); *In the Matter of the Minnesota Office of the Attorney General—Antitrust and Utilities Division's Petition for a Commission Investigation Regarding Criteria and Standards for Multiyear Rate Plans under Minn. Stat. § 216B.16, subd. 19*, Docket No. E,G,-999/M-12-587, Order Establishing Terms, Conditions, and Procedures for Multiyear Rate Plans at 13–15 (Jun. 17, 2013) ("Application Requirements").

[78] Xcel Energy's generation-related rate base is much larger than its distribution-related rate base.

regulatory structure in Minnesota, short-term regulatory outcomes should be focused on desired regulatory outcomes related to the existing regulatory structure.

If, in this docket, there emerges a particular area where consensus seems elusive, or where the magnitude of the proposed financial incentive appears out-sized, it may be a symptom not of poor PIM design, but rather of a regulatory system that is simply unfit to achieve the particular goal. This does not mean that a new regulatory structure is required at this time,[79] but rather to caution the Commission that it may encounter "square pegs" in this proceeding. Near-term attention should instead focus on making the existing regulatory structure function more efficiently and equitably, with a long-term focus on ensuring the state regulatory apparatus is ready to tackle the significant challenges ahead.

The current regulatory structure in Minnesota retains many of the structure utility financial incentives inherent in the traditional cost-of-service regime: the existing structural incentives encourage utilities to pursue capital spending, increase sales, and cut costs between rate cases. The Commission should thus ensure that its desired regulatory outcomes focus on ensuring that these implicit utility incentives do not result in ratepayer harm.

2. The current regulatory structure informs the selection of desired regulatory outcomes.

As the previous discussion demonstrates, the current regulatory structure in Minnesota contains incentives that continue to be driven by cost-of-service ratemaking. Because of this, the desired regulatory outcomes chosen by the Commission should be tied to issues that arise from cost-of-service ratemaking. In addition to these more traditional regulatory outcomes, however there may also be emerging, modern regulatory outcomes the Commission may wish to consider.

[79] Although the OAG recommends, as it has in the past, that the Commission conduct a more complete analysis of what the regulatory structure should look like in the future.

These modern regulatory outcomes reflect the significant changes to the industry and to emerging policy issues. Tracking a utility's performance could help regulators identify areas where utility underperformance may warrant further discussion about incentives and the regulatory structure. This section will utilize the metrics hierarchy and the regulatory goals described earlier to identify desired regulatory outcomes that are both traditional and modern.

a) Customer Focus: desired regulatory outcomes.

There are four desired regulatory outcomes related to the Customer Focus regulatory goal: service quality, customer satisfaction, affordability, and empowered customers.

OAG Recommendation 8: The Commission should adopt four desired regulatory outcomes related to the Customer Focus regulatory goal: service quality, customer satisfaction, affordability, and empowered customers.

Figure 9. Desired regulatory outcomes related to the Customer Focus regulatory goal.

Service quality is a traditional regulatory outcome that has roots in the notion that electricity service should be adequate, reliable, and affordable. Minnesota has been using

metrics to measure utility performance for decades. Its longstanding use is related to the incentive to cut costs between rate cases. In order to prevent utilities from offering a service that falls below a certain level, the Commission has established a suite of metrics to measure utilities' service quality.

There are elements of customer satisfaction built into service quality reporting, namely in the metrics like number of complaints and disconnections. As the Commission considers its regulatory outcomes anew here, it should consider customer satisfaction separately from service quality.[80] Changing consumer preferences regarding electricity service and methods of communication may not be captured by traditional customer satisfaction metrics. For example, if a utility does not offer an innovative product or service that a consumer is interested in, that consumer is unlikely to file a complaint with a regulatory body to express his or her displeasure. Nevertheless, the consumer may be unsatisfied with the utility's service.

Affordability has long been an important regulatory outcome, especially as the Commission considers rate design issues in rate cases. Historically, the proliferation of electricity service was powered by growing economies of scale related to generation. This resulted in declining utility costs and, therefore, rates. For example, the cost of a kWh of electricity for a residential customer was the equivalent of about 453 cents in 1892.[81] By 1969, residential customers paid the equivalent of only 9 cents per kWh.[82] For many decades, utilities delivered on the promise of providing cheap electricity. Today, however, these assumptions no longer hold in an increasing number of jurisdictions. In this period of frequent rate cases, surges in capital spending, and flattening sales, there is a growing need to emphasize affordability.

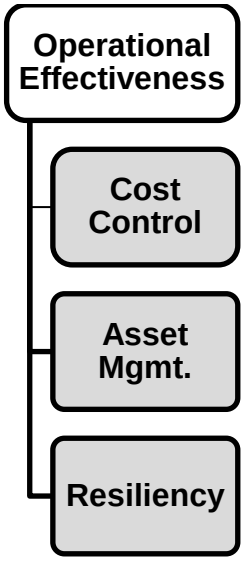
[80] The Commission should, at this time, continue to require traditional customer satisfaction metrics like disconnections and complaints.
[81] In 1996-adjusted dollars. Richard Hirsh, *Power Loss* 47 (1999).
[82] *Id.*

Finally, the Commission should adopt customer empowerment as a desired regulatory outcome. Customer empowerment is related to the new type of ratepayer who wishes to exert more control over his or her electricity usage. Customer empowerment is also related to non-participants in these new value-added services. These non-participants should not be harmed if they choose not to partake in value-added services. This is especially true for ratepayers for whom affordability remains a barrier to participation. They should not bear additional costs related to the provision of value-added services.

b) Operational Effectiveness: desired regulatory outcomes.

OAG Recommendation 9: The Commission should adopt three desired regulatory outcomes related to the Operational Effectiveness regulatory goal: cost control, asset management, and resiliency.

Figure 10. Desired regulatory outcomes related to the regulatory goal of Operational Effectiveness.



The second regulatory goal is operational effectiveness. Like the customer focus goal, operational effectiveness has its roots in the origins of utility regulation. In exchange for monopoly power, utilities are expected to prioritize operational effectiveness and eliminate

waste. In reality, the cost-of-service structure provides mixed incentives toward this goal.[83] Because of this, the Commission should track outcomes related to cost control and asset management. The Commission should also track outcomes related to grid resiliency.

Cost control and asset management become even more important when a utility remains out of a rate case proceeding for a period of years, such as during a MYRP. Cost control relates to a utility's expenditures of both capital and O&M expenses. Tracking this outcome could yield insights at both a global and a granular level, depending upon the metrics employed. It may be useful to monitor both perspectives. Asset management is an outcome that is focused on measuring whether utilities are making efficient long-term investments. Measures to track this could include metrics related to the IRP process or potential distribution-level planning, and/or an evaluation of these processes by a third-party evaluator.[84]

Xcel's MYRP elevates concern about both cost control and asset management outcomes. Multiyear rate plans are "more complex than what first meets the eye," and experts acknowledge that utilities' arguments, "from a regulatory perspective . . . seem to fall short of making a compelling case for how their customers would benefit."[85] One potentially potent aspect of MYRPs, from a public interest perspective, is that MYRPs can enhance internal utility performance under the right conditions.[86] Cost control and asset management outcomes should

[83] Utilities are incentivized to cut costs between rate cases, but do not have a long-term incentive to contain costs that firms operating in competitive markets have. This is because competitive firms are able to keep all of the incremental, after-tax profit from cost-reduction efforts. Regulated utilities have a weak cost containment incentive, especially when revenue tracks its own costs closely, as it would in periods of frequent rate cases or with the use of cost trackers. Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 12 (Jan. 2016); s*ee also* Ken Costello, Nat'l Regulatory Research Inst., *Multiyear Rate Plans and the Public Interest* 9–10 (Oct. 2016) (noting that utilities "lack the strong incentives of non-regulated firms to control costs on a sustainable basis.").

[84] *See Synapse Handbook* at 98 (noting that effective resource planning metrics could be assessed by an third party evaluator).

[85] Ken Costello, Nat'l Regulatory Research Inst., *Multiyear Rate Plans and the Public Interest* iv (Oct. 2016)

[86] *Id.* at 17.

thus be prioritized in order to develop metrics to track utility performance under multiyear rate plans. In other words, utilities should be held accountable for delivery of the touted benefits of multiyear rate plans.

The final regulatory outcome related to the Operational Effectiveness goal is resiliency. The dictionary definition of resiliency is "the capability of a strained body to recover its size and shape after deformation caused especially by compressive stress."[87] From a utility's perspective, threats to the grid can take many forms. Today, threats can be both external—physical- and cyber-related attacks from adversaries—and internal—including aging infrastructure and the increasing penetration of intermittent generators.[88] Utilities have to be prepared to respond quickly to these threats as they emerge and evolve. Grid resiliency is an attempt to encapsulate these various threats. It is related, but broader than the traditional outcome of reliability.[89]

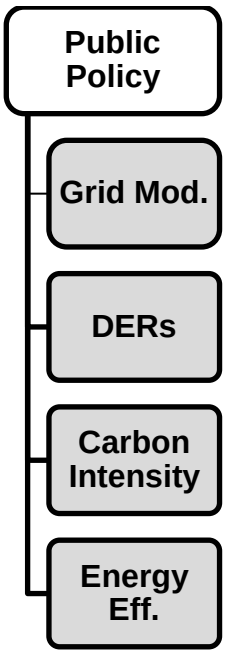
c) Public Policy Responsiveness: desired regulatory outcomes.

The third category of desired outcomes relate to the regulatory goal of Public Policy Responsiveness: grid modernization, distributed energy resources ("DERs"), reducing the carbon intensity of generation, and energy efficiency and conservation.

OAG Recommendation 10: The Commission should consider adopting four desired regulatory outcomes related to the Public Policy Responsiveness regulatory goal: grid modernization, distributed energy resources, reducing carbon intensity of generation, and energy efficiency and conservation.

[87] Merrian-Webster, https://www.merriam-webster.com/dictionary/resilience (last accessed Dec. 12, 2017).
[88] *See generally* Benjamin L. Preston et al., *Resilience of the U.S. Electricity System: A Multi-Hazard Perspective*, prepared for the U.S. Dep't of Energy (Aug. 18, 2016).
[89] Resiliency has been associated with the following characteristics: resourcefulness, redundancy, and restoration. *Id.* at 8.

Figure 11. Desired regulatory outcomes related to the regulatory goal of Public Policy Responsiveness.



Recent developments in energy policy have created new potential regulatory outcomes. Here, the input of other parties to identify desired regulatory outcomes may be especially useful. Accordingly, these Comments do not explicitly recommend adoption of these specific regulatory outcomes, but will instead present the four regulatory outcomes for discussion purposes.

First, a traditional regulatory outcome is energy efficiency and conservation. Since at least the 1970s, policymakers have emphasized this outcome for regulated utilities. Energy efficiency and conservation measures strike against one of the fundamental implicit incentives of cost-of-service regulation, which is the throughput incentive.[90] As a result of this regulatory outcome, regulators and policymakers have devised a number of regulatory tools to encourage utilities to turn to conservation. For example, energy savings goals, revenue decoupling, cost

[90] The throughput incentive is also related to another fundamental utility incentive to invest capital resources in generation assets, which can be justified by increasing sales.

recovery trackers, and a financial incentive mechanism are all utilized by Minnesota utilities to encourage utilities to invest in energy conservation.

The rest of the regulatory outcomes listed here—grid modernization, DERs, and a reduction in carbon intensity—are similarly situated from a policy context. They each represent relatively emerging concepts in the electricity sector. And each has potentially far-reaching implications for the future of utilities.

It is worthwhile to briefly discuss these far-reaching implications. These emerging policy outcomes could be employed as a form of early-warning system for regulators. For example, if the Commission desires to increase the penetration (and/or utilization) of DERs on the system, it could adopt the DER outcome and develop metrics to track Xcel's performance. Utilities "under traditional regulation have a material disincentive to accommodate DERs, even when DERs meet customer needs at lower cost than traditional grid service."[91] If the Commission thus finds Xcel's performance in meeting DER goals lacking, this could be interpreted as an early-warning sign that something in the regulatory structure needs to be addressed.

If the Commission finds sub-par utility performance in a given regulatory outcome, it has several options. It could develop a financial incentive, similar to the one used for energy conservation, to further incentivize a utility to adopt a practice for which it currently lacks an incentive. Or it could also signal the need to institute a comprehensive re-thinking of the utility regulatory structure itself, and the utility's role within that structure, similar to what other states have recently undertaken. Finally, if the costs of either alternative are deemed to be too high compared to the benefits, the Commission could simply take no action. At this time, the OAG does not take a position on which path would be desirable; there are too many unknowns. But

[91] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 14 (Jan. 2016).

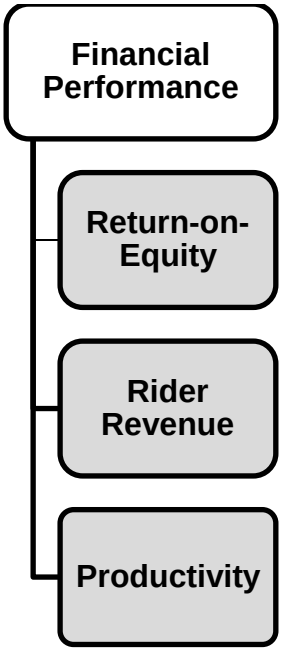
establishment of these emerging regulatory outcomes today could result in more useful information for the Commission in the future, as it addresses these far-reaching concerns. More information should lead to more informed decision-making and, thus, better outcomes for ratepayers.

d) Financial Performance: desired regulatory outcomes.

The fourth category of outcomes relate to the regulatory goal of Financial Performance: return-on-equity, rider revenue, and productivity.

OAG Recommendation 11: The Commission should adopt three desired regulatory outcomes related to the Financial Performance regulatory goal: return-on-equity, rider revenue, and productivity.

Figure 12. Desired regulatory outcomes related to the regulatory policy goal of Financial Performance.



The fourth regulatory goal, Financial Performance, relates to the public interest in a financially healthy utility. It also relates to the public interest in ensuring that utilities are not reaping excess earnings from ratepayer revenue. There are three regulatory outputs described here that are tied to these concerns.

First, the return-on-equity is one possible regulatory outcome to emphasize. In traditional cost-of-service regulation, utilities are allowed to earn a return on its rate base, or assets. This is typically a heavily-litigated issue in rate cases, but the methods and legal arguments will not be addressed here. In Xcel's most recent rate case, the Company was allowed to "represent its authorized ROE as nine and two-tenths percent (9.20%) for settlement purposes in this rate case . . . ."[92] An outcome related to ROE is even more important for situations like these, where the authorized number is a fiction from a revenue requirement perspective. Tracking the earned ROE on a regular basis will thus allow for more transparency during the multiyear rate plan period.

Rider revenue is a second regulatory outcome the Commission may want to track. The Company's approved settlement placed restrictions on the introduction of new riders during the plan years, but did not limit the Company's ability to include additional costs in any of its 26 existing riders.[93] Xcel has also requested a higher ROE in subsequent rider dockets than the representational ROE it received in its rate case, thus negating any regulatory savings associated with constant litigation of ROE.[94] In general, riders "can compromise a utility's incentive to control" its costs.[95] Since one of the primary purported benefits of a multiyear rate plan is the ability to control costs, costs recovered through riders during the plan should be carefully monitored.

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[92] *In the Matter of the Application of Northern States Power Company, d/b/a Xcel Energy, for Authority to Increase Rates for Electric Service in the State of Minnesota*, Docket No. E-002/GR-15-826, Stipulation of Settlement 6 (Aug. 16, 2016).
[93] *Id*. at 3.
[94] *See, e.g. In the Matter of the Petition of Northern States Power Company for Approval of the Transmissio Cost Recovery Rider Revenue Requirements for 2017 and 20189, and Revised Adjustment Factors*, Docket No. E002/M-17-797, Petition 9–10 (Nov. 8, 2017) (requesting a 10.00 percent ROE in a recent rider filing).
[95] Ken Costello, Nat'l Regulatory Research Inst., *Multiyear Rate Plans and the Public Interest* 29 (Oct. 2016).

Finally, the Commission should consider tracking the regulatory outcome of productivity. Utility productivity is defined as the "difference between growth in its operating scale and growth in quantities of inputs that it uses."[96] Productivity is typically measured using an index.[97] Productivity may be one way to measure the efficacy of multiyear rate plans, since—under one theory of multiyear rate plans—utilities will be more productive the longer they can stay out of a rate case.[98] Focus on a productivity outcome, and related metrics, could hold the utility accountable for delivering the productivity gains during the term of a multiyear rate plan.[99]

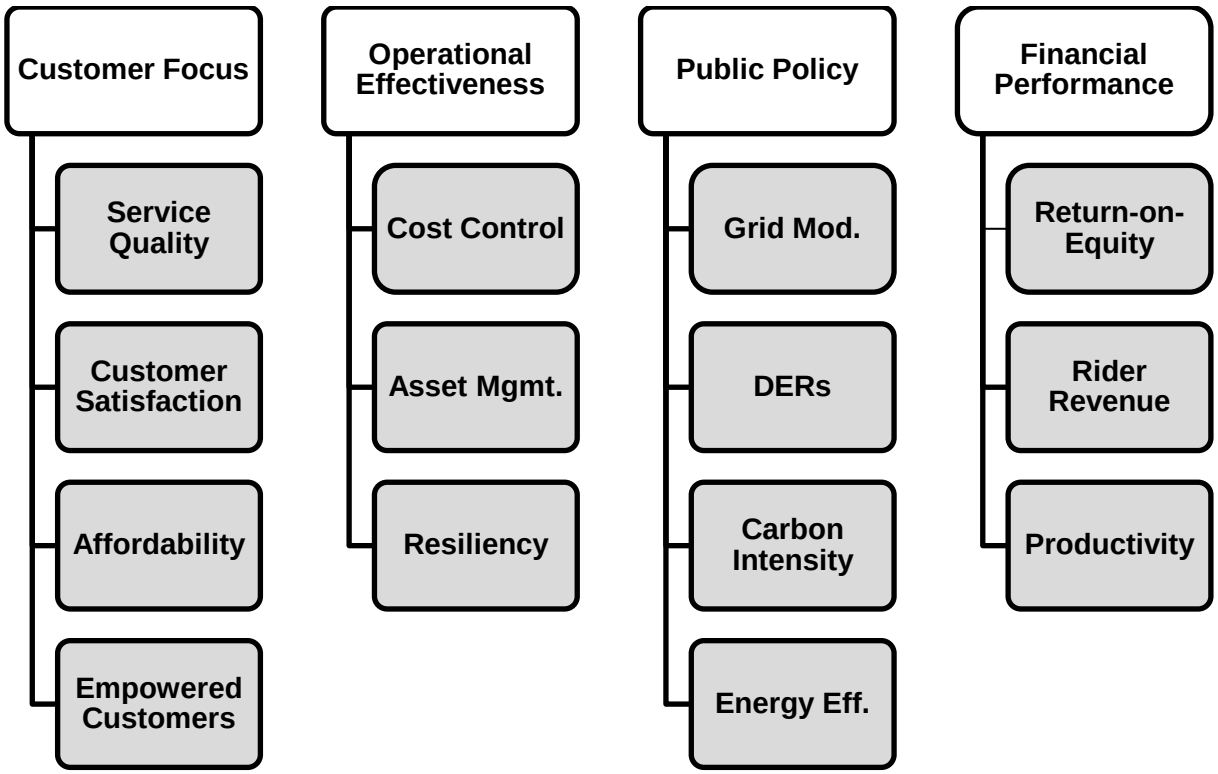
3. The Commission should adopt regulatory outcomes that are related to regulatory policy goals and both traditional and modern issues of concern.

OAG Recommendation 12: The Commission should consider adopting the fourteen regulatory outcomes that correspond to the regulatory policy goals of Customer Focus, Operational Effectiveness, Public Policy Responsiveness, and Financial Performance.

The identification of desired regulatory outcomes is the second step in the PIM Design Process. The list of regulatory outcomes listed below, in Figure 13, is the next step in transforming broad regulatory goals into specific, measureable performance metrics. These outcomes touch upon both established, foundational areas of concern like service quality and affordability and emerging areas of concern like grid modernization and resiliency.

[96] Mark Newton Lowry, J. Deason, M. Makos, & L. Schwartz, U.S. Dep't of Energy Grid Modernization Laboratory Consortium, *State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities* 3.3 (Jul. 2017)
[97] *Id.*
[98] During periods of sustained high capex, utilities need frequent escalations in rates, especially when the capex does not produce additional revenue. *Id.* at 3.9. Multiyear rate plans are one way to alleviate pressure on utilities facing these conditions.
[99] The focus on productivity could likewise uncover flaws in the multiyear rate plan design that allow Xcel to game aspects of the plan design to the benefit of shareholders, not ratepayers. Multiyear rate plans tend to invite strategic behavior in utilities. *Id.* at v.

Figure 13. Potential desired regulatory outcomes in this docket.



Together, a focus on these outcomes will help to ensure the Commission holds Xcel accountable during the multiyear rate plan. These outcomes will also allow the Commission to monitor the utility's response to significant changes to its business in the coming years. This ability to monitor the utility's performance will only be possible, however, with the establishment of robust performance metrics.

C. STEP 3: PERFORMANCE METRICS FOR XCEL ENERGY.

OAG Recommendation 13: The Commission should adopt metrics design principles to ensure that metrics are tied to policy goals and outcomes, quantifiable, verifiable, clearly defined, and subject to utility control.

OAG Recommendation 14: The Commission should consider increasing the granularity of reliability metrics to increase the efficiency and equity of distribution-side investments.

OAG Recommendation 15: The Commission should revisit technical metrics to ensure uniformity in methods and assumptions and clarity in the meaning of the metrics.

OAG Recommendation 16: The Commission should begin to develop a customer survey to measure customer satisfaction and preferences across a wide variety of media platforms that better-reflect the way in which ratepayers interact with the Company today.

OAG Recommendation 17: The Commission should investigate metrics tied to the regulatory outcome of productivity to ensure that utility productivity gains due to multiyear rate plans are occurring. This metric or metrics, in particular, may benefit from an independent third party to design and implement.

OAG Recommendation 18: The Commission should investigate metrics related to other outcomes impacted by multiyear rate plans, including the desired regulatory outcomes of affordability, cost control, ROE, and rider revenue.

OAG Recommendation 19: The Commission should develop performance metrics tied to the regulatory outcomes of customer empowerment and DER because the data generated by these metrics will assist the Commission as it considers whether future changes to utility regulation would be appropriate.

The first two steps of the PIMs Design Process have established regulatory policy goals and corresponding desired regulatory outcomes. The next step in the process is to identify potential metrics that could be used to measure the utility's performance in achieving these outcomes. Selecting specific metrics from the dozens of established utility performance metrics can be a daunting task. This section will begin by introducing design principles for performance metrics. This is followed by discussion of a number of metrics which correspond to the regulatory outcomes identified earlier.

At the outset, it is important to note that the discussion of particular metrics in this section is not intended to be an endorsement or full-fledged proposal of the metrics, but rather a starting point for discussion. This discussion is proof of concept for the goals-outcomes-metrics hierarchy. If one could distill the main theme of these Comments, it would be that full consideration of each step of the PIM Design Process is critical. A full analysis of all metrics that could be used to track progress on regulatory outcomes may be premature at this point in the proceeding. As such, this section on performance metrics is intended to be a beginning of a

discussion amongst stakeholders, with discussion limited to a non-exhaustive list of potential performance metrics.[100]

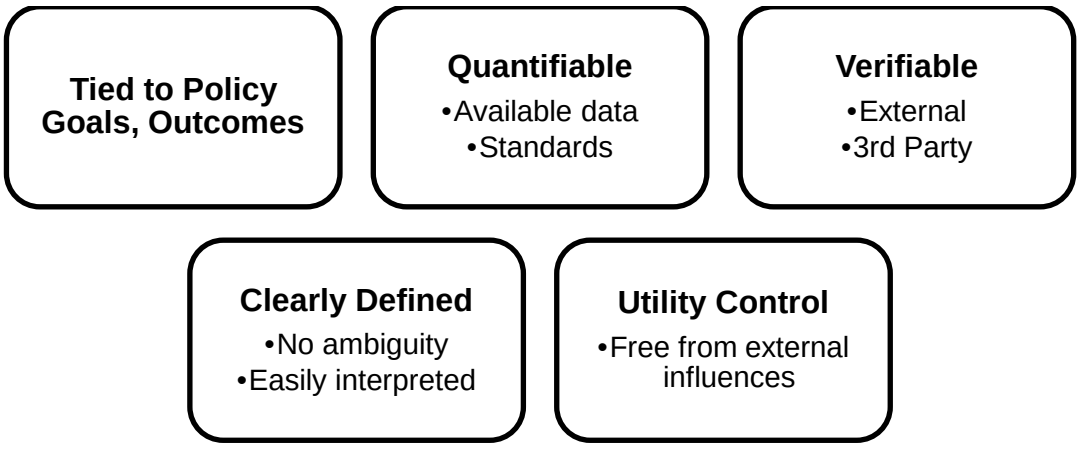
1. The Commission should analyze potential metrics using established design principles.

Identifying and selecting rom the universe of potential performance metrics is a complex undertaking. Care must be taken to avoid a result where metrics are reported without actually conferring useful information.[101] This could be an indication that the metric was improperly designed. Establishment of a set of design principles helps avoid the establishment ill-defined metrics.

The law requires performance metrics to be "quantifiable, verifiable, and consistent with state energy policies."[102] In addition, experts recommend that metrics be clearly defined[103] and controllable by the utility.[104] These design principles are summarized below, in Figure 14, and in greater detail below. No metric is likely to check all of these boxes, but the establishment of design principles creates an analytical framework for the assessment of proposed metrics. Such an analytical framework adds a robustness to the process that an *ad hoc* approach to individual metrics cannot offer.

[100] A more comprehensive collection of established performance metrics is included in Appendix II.
[101] *Synapse Handbook* at 28. For example, if a desired regulatory outcome is to improve system load factor by reducing peak demand, a metric that tracks the number of ratepayers enrolled in a demand response program provides no information about whether the utility is actually achieving the desired outcome. *Id.*
[102] Minn. Stat. § 216B.16, subd. 19(a) (2017).
[103] *Synapse Handbook* at 28; Ken Costello, Nat'l Regulatory Research Inst., *How Performance Measures Can Improve Regulation* 14 (Jun. 2010); Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* (Jan. 2016); David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* (Sep. 2017).
[104] Ken Costello, Nat'l Regulatory Research Inst., *How Performance Measures Can Improve Regulation* 14 (Jun. 2010).

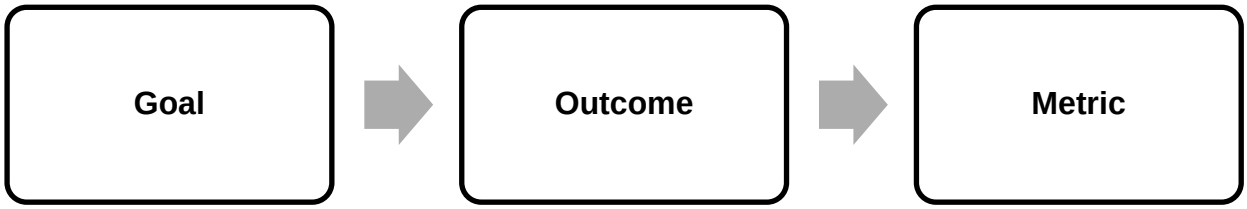
Figure 14. Metrics Design Principles.[105]



First, a metric should be tied to overarching regulatory policy goals and desired regulatory outcomes. Analysis of a proposed metric under this principle requires, as a threshold matter, that the metric is tied to a specific regulatory outcome, which is, in turn, tied to an overarching policy goal, as shown below in Figure 15. It is important to remember that the purpose of performance metrics is to make utilities better and its ratepayers better off. Metrics must be directly tied to a particular regulatory outcome, not simply something interesting to measure and report. No direct connection between a potential metric and a desired regulatory outcome means one of two things—either the metric cannot be used or the Commission must consider whether adding a desired outcome that is tied to the potential metric would fulfil one of its regulatory policy goals. In this way, the selection of performance metrics within the hierarchy construct builds in a continual assessment of the broader concepts embodied in regulatory goals and outcomes.

[105] Adapted from *Synapse Handbook* at 28–31.

Figure 15. Regulatory policy goal, desired outcome, performance metric hierarchy.



Second, a metric should be quantifiable. This means that a metric should be calculated using existing industry standards and publically-available data.[106] There are a number of sources of public data, including data that is already reported to federal and state agencies.

Third, a metric should be verifiable. A verifiable metric should use public data and "sound analytical techniques that anyone can replicate."[107] For example, state-based energy efficiency programs calculate the savings related to specific measures, such as the replacement of incandescent lightbulbs for more efficient bulbs. A number of studies have found "staggering" differences in the methodologies and assumptions used to calculate the energy savings from this relatively straightforward measure.[108] Another approach the Commission may wish to employ in the future is benchmarking. This approach would measure Xcel's performance against the performance of similar utilities across the country. The selection of verifiable metrics and the use of third-party evaluators can help to prevent the gaming of performance metrics by utilities.[109]

Fourth, a metric should be clearly defined. This principle is also related to the quantifiable and verifiable principles, but it is broader. A clearly defined metric will be instantly

[106] *Synapse Handbook* at 29.
[107] Ken Costello, Nat'l Regulatory Research Inst., *How Performance Measures Can Improve Regulation* 14 (Jun. 2010).
[108] *In the Matter of Commission Review of Utility Performance Incentives for Energy Conservation*, Docket No. E,G999/CI-08-133, Initial Comments of the OAG at 17–18 (Jan. 19, 2016) (noting that one study found that total annual energy savings for a CFL lightbulb ranged from 27 kWh to 49 kWh).
[109] *Synapse Handbook* at 31.

understandable to both regulators and utility ratepayers. This principle does not mean that a technical metric cannot be used; rather, the selection of such a metric would require careful naming conventions. For instance, SAIDI, or the System Average Interruption Duration Index does not lend itself to easy interpretation if only the acronym is used. But by describing SAIDI as Annual Minutes Without Power Per Customer, or something similar, the metric is more easily understood by the public at large.[110]

Fifth, a metric should be controllable by the utility, without unreasonable influence from external forces. If the regulator's goal is to use performance metrics to assess a utility's performance, then metrics should be limited to performance areas within the utility's control. This is especially important when considering targets and financial incentives, as the reward or punishment should be tied to utility performance, not external factors.

Together, these five design principles should be used to establish an analytical framework for regulators and other stakeholders to use in the assessment of potential performance metrics. There are, however, limitations to the design principles. They are not a substitute for a more rigorous analysis; simply checking a majority of boxes does not mean, necessarily, that a metric should be utilized. The design principles should be used to guide the analysis of metrics in a consistent way, but as an example below will demonstrate, the principles may not carry equal weight. For illustrative purposes, several metrics will be analyzed below, to demonstrate the potential uses and limitations of adoption of the principles.

[110] SAIDI itself is also an example of a metric that is almost universally used, but whose input assumptions vary across utilities and across states. *Synapse Handbook* at 20. Verification and a clear definition are thus important principles for this metric.

a) Xcel's proposed Customer Choice Pilot Program metric.

First, Xcel proposed several performance metrics in its 2015 rate case, including a "Customer Choice Pilot Program" metric. Its proposal, in full, is reproduced below:

> Q. What does the Company propose with respect to enabling customer choices?
> A. We understand that customers seek increased access to new services, products, and technologies. With this in mind, we propose a Customer Choice Pilot Program metric that sets a new baseline for the number of new pilot programs we will release per year. We are proposing to develop and release two new pilots each year during the MYRP [multi-year rate plan].[111]

In response to an information request sent by another party, which sought additional information about this Customer Choice Pilot Program metric, the Company stated that the existence of two pilot programs in itself would be a sign of success, separate from the question of whether the pilots themselves were successful.[112] The OAG witness recommended that the Commission reject this particular metric and instead pursue a metric from a list of over 20 customer engagement-related metrics listed in the *Synapse Handbook*.[113]

Approaching the assessment of this metric using the metric design principles articulated above finds that some design principles are met. For example, the number of pilots created is verifiable and controllable by the utility. Certainly, a regulator could verify that the Company did indeed create a pilot program in a given reporting period.

But this proposed metric fails in every other regard. First, creation of two pilots per year is not directly tied to a regulatory policy goal or outcome. The existence of a pilot, without

[111] *In the Matter of the Application of Northern States Power Company, d/b/a Xcel Energy, for Authority to Increase Rates for Electric Service in the State of Minnesota*, Docket No. E-002/GR-15-826, Direct Testimony of Akash Chandarana 56 (Nov. 2, 2015).
[112] *In the Matter of the Application of Northern States Power Company, d/b/a Xcel Energy, for Authority to Increase Rates for Electric Service in the State of Minnesota*, Docket No. E-002/GR-15-826, Direct Testimony of Ron Nelson REN-2 (Jun. 14, 2016).
[113] *Id.* at 9.

regard to its design or success is not tied directly to the outcome of customer empowerment. Customer value is not created simply by adding more choices. Value is created by adding choices that customers want, and that are successful. Second, this metric is not a standard method of measuring customer empowerment. The Company did not cite to any jurisdictions that track this metric, nor is the OAG aware of any analogous metric. Finally, although it is simple to understand, it is not clearly defined; there is no intuitive link between the existence of two pilots in a given year and a utility's successful performance toward the achievement of desired regulatory outcomes.

b) System Average Interruption Duration Index.

In contrast to the "pilots" metric, one common industry-wide metric is System Average Interruption Duration Index, or SAIDI. SAIDI is a reliability metric that reports the average number of minutes a customer is without power annually (only sustained outages are included).[114] SAIDI is one of several core reliability metrics that are widely reported by electric utilities, including Xcel.[115]

SAIDI scores well under the five design principles. First, SAIDI, being a measure of reliability, is closely tied to overarching regulatory policy goals and outcomes. It is also quantifiable and verifiable, as there are standards for calculating the metric. Finally, the utility has a measure of control over SAIDI through proper maintenance and prudent replacement of infrastructure. It should also be noted that major events like storms that interrupt power to a large number of customers can be excluded from the SAIDI calculations (although definitions

[114] Joseph H. Eto & Kristina Hamachi LaCommare, Lawrence Berkeley Nat'l Lab., *Tracking the Reliability of the U.S. Electric Power System: An Assessment of Publicly Available Information Reported to State Public Utility Commissions* (2008).

[115] Utilities also report the related SAIFI metric (an indicator of frequency), CAIDI (a derivation of SAIDI and SAIFI that indicates the average time to restore service), and the less frequently-reported MAIFI, which indicates frequency of shorter-duration interruptions. *Id.* at Appendix A.

can vary). Finally, SAIDI is clearly defined: there are existing standards for reporting the metric that some utilities have adopted.[116]

Like all metrics, there are limitations to SAIDI. For example, although there are standards that define key aspects of reliability metrics, their application is voluntary and varies amongst states and even within a state.[117] This inconsistency can make tracking utility performance and nationwide benchmarking efforts more difficult. The potential problem is not unlike the inconsistencies found amongst states for the reporting of common energy efficiency measures.[118] In addition, its common usage in acronym form, especially when accompanied by its relatives SAIFI, CAIDI, MAIFI, and CAIFI, does not lend itself to instant recognition of the underlying concepts, especially to members of the public or non-technical regulators. This shortcoming can be addressed by adopting clear reporting practices.

Following this discussion of metrics design principles and several examples of their application, the next part of this section will highlight several performance metrics the Commission should consider for future development in this docket. These metrics will be related to both traditional and emerging regulatory policy goals and desired outcomes.

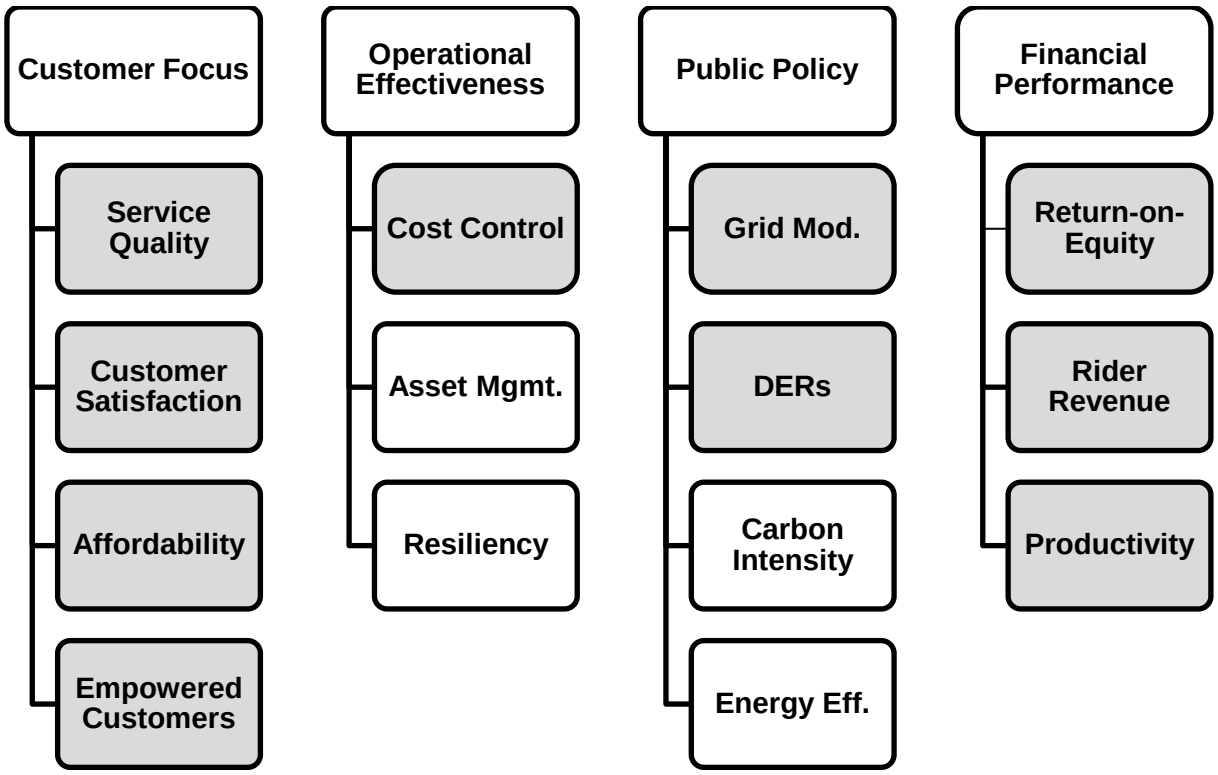
2. The Commission should consider performance metrics that re-visit existing metrics, metrics related to the MYRP, and metrics that are related to emerging changes in the electricity sector.

This section will provide a non-exhaustive list of performance metrics the Commission should consider developing in this docket. These metrics fall into three general categories. The first category recommends changes to existing metrics to increase clarity and to modernize the

[116] While each utility has pre-determined procedures for calculating SAIDI, there are differences across utilities in regards to what outages are included. The differences can make comparing SAIDI across utilities difficult.
[117] *Synapse Handbook* at 29.
[118] *See In the Matter of Commission Review of Utility Performance Incentives for Energy Conservation*, Docket No. E,G999/CI-08-133, Initial Comments of the OAG at 17–18 (Jan. 19, 2016).

metrics. The second category focuses on metrics that will monitor Xcel's performance during the multiyear rate plan. The third category addresses emerging regulatory policy outcomes such as DERs and describes how metrics can be used to track utility performance and gather information for future decisions. Figure 16, below, shows the specific regulatory outcomes (shaded) that will be highlighted by discussion of these three categories.[119]

Figure 16. Potential desired regulatory outcomes and performance metrics to be developed.



a) Potential modifications to existing metrics.

Xcel Energy reports a number of metrics already, as required by state and federal regulators.[120] This proceeding does not affect the continued reporting of these metrics in those

[119] The non-shading of a particular regulatory outcome in Figure 16 does not indicate a recommendation for lower priority.
[120] A list of the existing metrics that Xcel track for Minnesota regulators can be found in Appendix II.

respective dockets, but there are likely to be a number of existing metrics that should be reported in a future performance metrics structure. In particular, the Company has reported service quality metrics for a number of years. Its service quality metrics range from the number of complaints and call answer time to reliability metrics like SAIDI and SAIFI. More information is needed to assess the quality of these existing metrics, but there are several potential modifications to the metrics that the Commission should consider, in conjunction to an independent assessment of the quality of Xcel's existing metrics.

The first consideration is the granularity of reliability metrics. Data and communications technologies have changed rapidly in the utility sector over the last five years. Many of these changes could enable the utility to provide more granular reporting on reliability metrics. Reliability metrics are becoming a more important data point to track and refine because of the spending increases related to reliability through grid modernization investments. Having more granular data will ensure the company is making grid modernization and other reliability investments in an efficient and equitable way. Increasing the granularity of reliability metrics may also, in the future, allow for future tailoring of products and services.[121]

The second consideration is to revisit technical metrics such as SAIDI and SAIFI. The objective of this effort would be to clarify definitions and assumptions used by Xcel to enable reliable benchmarking in the future. Another objective would be to revise the public-facing terminology of these technical metrics to ensure ease of interpretation.

Finally, changes to metrics related to the regulatory outcome of customer satisfaction should be considered. Like other utilities, Xcel has begun a process of driving customers toward

[121] For example, the Company could provide different levels of reliability (and make associated cost allocation changes) to reflect customer preferences and needs. These customers would be able to use granular reliability metrics to track the utility's performance.

new methods of communication with the Company. The Company now interacts with ratepayers via interactive voice response, email, text, its website, social media, and its own mobile app.[122] At the same time, Xcel's interactions with ratepayers via traditional forms has declined.[123] The Company has attributed this change to customer preferences.[124] With this shift, metrics like call answer time loses some of its potency, as utilities have increasing power to drive customers away from metric-eligible calls and the ability to staff its call centers accordingly to meet the standard. As more customers rely upon new methods of communication, a new way of measuring customer satisfaction is also needed.

A number of states have developed customer satisfaction surveys as a way to measure customer satisfaction.[125] There are a number of important insights that such a survey could provide that is not possible with traditional metrics. For example, measuring customer satisfaction by counting the number of complaints, by definition, only captures the customers who write in to regulators. While not without value, it is a rather crude metric for understanding customer satisfaction, akin to measuring satisfaction with a product sold online only by counting the number of one-star reviews. Measures of customer satisfaction today can be more granular. The administration of a survey over multiple media platforms expands the reach of the insight to a wider group of customers. Finally, a survey could help to explore other aspects of utility service from a customer's perspective. According to many in the field, especially entities who stand to benefit from value-added services, customers today want the Commission to approve more value-added products and services. Conducting a survey that includes questions about

[122] *In the Matter of the Petition of Northern States Power Company for Approval of Tariff Modifications and a Variance from Commission Rules to Implement Customer-Driven Operational Changes and Other Tariff Changes,* Docket No. E,G002/M-17-553, Petition at 1 (Jul 14, 2017).
[123] *Id.*
[124] *Id.* at 2.
[125] *Synapse Handbook* at 30. Xcel already surveys its customers on a monthly basis in its "Voice of the Customer" survey, but the OAG does not believe it makes the results or questions public.

these issues is one way for the Commission to test these assumptions before making a decision on future proposals.

b) Metrics related to the multiyear rate plan.

The second set of metrics the Commission should prioritize are those related to Xcel's multiyear rate plan. This focus encompasses the following regulatory outcomes: affordability, cost control, return-on-equity, rider revenue, and productivity. Metrics tied to these outcomes should be designed to measure the purported benefits that a multiyear rate plan is intended to provide.

In particular, productivity and operational efficiency metrics have been created to measure utility performance over the plan years.[126] A productivity index measures the relationship between utility outputs and inputs. Utility productivity can increase through the superior utilization of technology or becoming more efficient through improved management processes. MYRPs provide utilities with the opportunity to provide benefits to stockholders and potentially ratepayers through productivity gains. If productivity gains are not realized through a MYRP, however, ratepayers and regulators should be very concerned and may need to reassess the design of the MYRP or the broader regulatory framework. For this reason, tracking productivity throughout MYRPs should be considered by the Commission.

It is also important to note that tracking productivity presents a new technical areas that will require the development of regulatory expertise. The development of productivity metrics should proceed deliberately and independently. Neither utilities nor their paid experts should be allowed to control the design and implementation of any metric, but in particular a metric that is

[126] *See* Mark Newton Lowry, J. Deason, M. Makos, & L. Schwartz, U.S. Dep't of Energy Grid Modernization Laboratory Consortium, *State Performance-Based Regulation Using Multiyear Rate Plans for U.S. Electric Utilities* (Jul. 2017).

reliant upon specialized expertise and internal utility data. A productivity-related metric could be an important tool to hold utilities accountable, but it should only be adopted if it adheres to the metrics design principles, especially that it is verifiable and clearly defined.

In addition to productivity-related metrics, the existence of a multiyear rate plan also suggests development of metrics tied to the regulatory outcomes of affordability, cost control, ROE, and rider revenue.

Cost control metrics include capacity-related costs, total energy costs, and fuel costs.[127] In addition, some states have used a performance metric that seeks to measure the quality of utilities' resource planning process.[128] Specifically, a Hawaiian proposal measures stakeholder engagement, an evaluation of resources, resource plans, strategic planning, and follow-through to score its utilities' performance.[129] Not surprisingly, an independent evaluator would administer this study.

Finally, a utility's return-on-equity and its rider revenue take on added import during a multiyear rate plan. The settlement's treatment of the "authorized ROE," Xcel's recent proposals to increase rider ROE, and the duration of the multiyear rate plan make it an important metric to track to ensure that the utility's shareholders are not being unjustly enriched by the plan. Likewise, Xcel's use of its existing riders during the plan years provide it with flexibility and regulatory relief, but leave its ratepayers with uncertainty and, most likely, higher rates. Understanding the interaction of rider revenue with the multiyear rate plan can provide the Commission with valuable information about whether multiyear rate plans, at least as they currently exist, are really in the public interest.

[127] *Synapse Handbook* at 24.
[128] *Id.* at 90.
[129] *Id.* at 90–93.

c) Performance Metrics related to changes in the electricity industry.

The third and final category of performance metrics that should be prioritized for development are those related to recent, developing changes to the electricity industry that have been discussed elsewhere in these Comments. In particular, these metrics could be tied to the regulatory outcomes of customer empowerment, grid modernization, and distributed energy resources, or DERs.

The strong implicit incentives that emanate from both traditional and modern forms of cost-of-service regulation drive vertically-integrated utilities to prioritize generation-related capital expenditures and to seek increasing sales in order to justify further capital spending. Energy efficiency and conservation has long been a desired regulatory outcome in Minnesota. Utilities have set forth to meet legislative and Commission requirements in this area. But these gains have come at a significant price to ratepayers, who fund one of the richest financial incentive payouts to utility shareholders in the country.

Regulatory outcomes like customer empowerment, grid modernization, and the promotion of DERs have the potential to yield significant benefits to ratepayers, but they also run up against the strong implicit incentives inherent in the regulatory structure as a whole. Vertically-integrated utilities have a strong disincentive to allow customer- or third-party-owned DERs onto its distribution system.[130] Given the potential benefits of DERs, the Commission may wish to make DERs a desired regulatory outcome.

Similarly, metrics related to grid modernization also provide an opportunity to ensure that investments in technology are not only being made by the utility but also efficiently-utilized. Grid modernization investments, such as advanced distribution system management systems

[130] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 13–14 (Jan. 2016).

("ADMS") and advanced metering infrastructure ("AMI"), have the potential to unlock a myriad of benefits for customers.[131] But this potential is not unlocked merely by installing these assets. The utility will have to prioritize efficient utilization of these assets and share the information created by them. In addition, grid modernization assets have the potential to decrease the costs incurred by utilities.[132] Accounting for these cost decreases is important so that ratepayers receive the benefits of these investments. Xcel recovers its costs for these investments via bas rates and also riders, which makes it difficult to measure the benefit in cost savings of these investments. Comprehensive grid modernization metrics could allow the Commission to more holistically track the costs and benefits of grid modernization.

The development of performance metrics that are directly tied to this regulatory outcome should provide an interesting insight into the utility's response to a desired outcomes of the efficient utilization of DERs, customer empowerment, and grid modernization.[133] If the utility fails to perform as desired, the Commission and other policymakers will have large structural issues to confront. One option would be to provide utilities with a financial incentive for meeting DER-related targets. This would be akin to the energy efficiency financial incentive. For a vertically-integrated utility like Xcel, with its strong disincentive to allow customer- or third-party-owned DERs onto it system, this financial incentive would likely be massive because it would have to overcome the utility's powerful incentive to invest capital in its own generation. Another option would be to address the structural reason for the utility's disincentive: the utility business model. This would be similar to the efforts that other states, such as Rhode Island and

[131] This could also enable for additional services to be provided by utilities and other providers.
[132] *See generally* Paul Alvarez, *Smart Grid* (2014).
[133] There is a wide range of potential DER-related performance metrics. A recent report provides eleven potential metrics, ranging from savings from demand response to support for interconnection and third-party access. Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 24 (Jan. 2016).

New York, have recently undertaken. This debate, if it happens, will happen at a later time, but the Commission can begin to collect information now, via metrics, to ensure that it will be able to make a decision in the public interest in the future.

3. Summary of Step Three: the identification of performance metrics.

Performance metrics should be: directly tied to state regulatory policy goals, quantifiable, verifiable, clearly defined, and controllable by the utility. These design principles form the analytical framework upon which any proposed performance metric should be scrutinized. The identification of performance metrics is the third step in the PIM Design Process and should be fully undertaken once broad regulatory policy goals are established and after specific, desired regulatory outcomes have been identified. Nevertheless, these Comments provide a starting point for the discussion of possible performance metrics for Xcel. These possible metrics include revisions to existing metrics, creation of a customer survey, metrics related to the multiyear rate plan, and metrics related to DERs and other emerging outcomes.

In the near term, the Commission should identify the regulatory goals and its desired regulatory outcomes in order to begin work on metrics design. The design of performance metrics should adhere to the design principles described above. In addition, it may be useful to establish an additional comment period once the regulatory goals and outcomes have been identified by the Commission. The process of metrics design would also benefit greatly by development via a collaborative process, such as facilitated stakeholder group that is led by an independent third party.

The next section will continue the procession along the PIM Design Process to introduce Step Four: the Establishment and Reporting of Performance Metrics.

D. STEP FOUR: THE ESTABLISHMENT AND REPORTING OF PERFORMANCE METRICS.

OAG Recommendation 20: The Commission should adopt a scorecard approach for the reporting of future performance metrics.

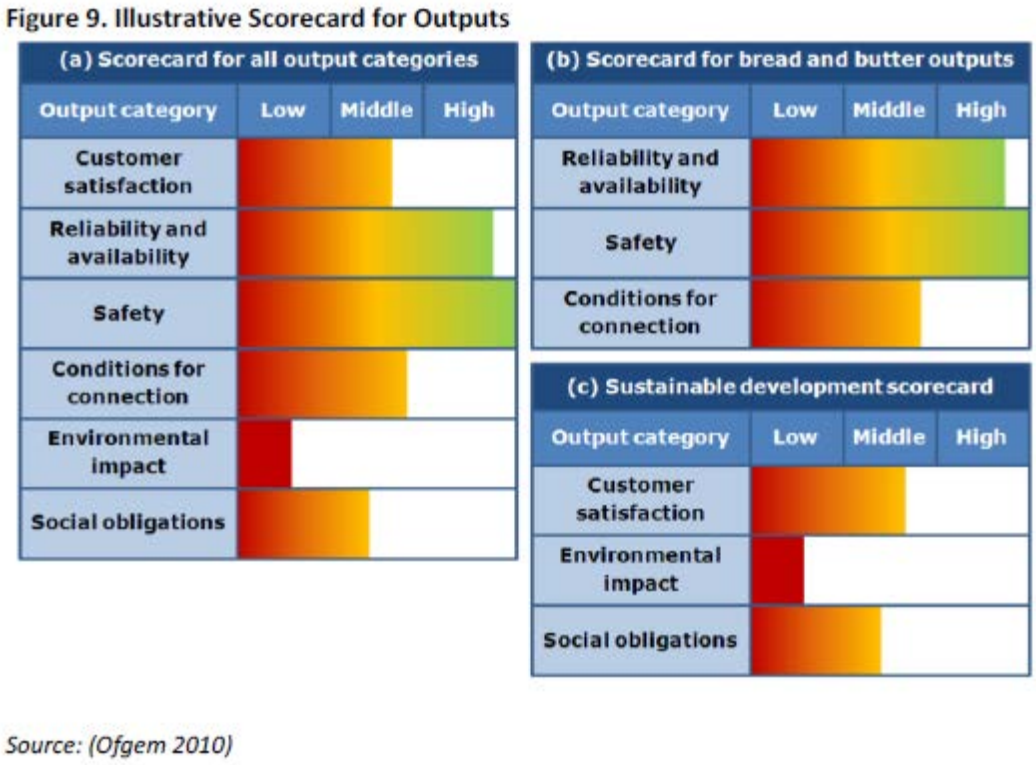
Once the Commission has identified an initial list of performance metrics it wishes to measure,[134] the next step is to establish a reporting mechanism for the metrics. The selection of a suite of robust performance metrics is necessary, but not sufficient in isolation to ensure that performance metrics will make a utility better and its ratepayers better off. One established method of promoting utility accountability and public awareness is to utilize a scorecard approach to reporting metrics. The Commission should adopt a scorecard approach (also referred to as a dashboard) to metrics reporting, where the Company's results for each metric will be posted in a publicly-accessible format. This section will describe the approach, its benefits, and the experiences of other jurisdictions that have adopted a scorecard approach.

1. A Scorecard Approach.

The Commission should adopt a scorecard approach for the reporting of future performance metrics. A scorecard would help ensure that the act of gathering data on performance metrics is useful to regulators and, ultimately, beneficial to ratepayers.[135] Metrics data must therefore be presented in an easily accessible, up-to-date, and properly contextualized manner.[136] A scorecard containing the utility's performance metrics results and trends could accomplish this goal. An illustrative example of a scorecard is reproduced below in Figure 17.

[134] Again, it seems unlikely that a complete, vetted list of performance metrics will result from this initial comment period.
[135] *Synapse Handbook* at 31.
[136] *Id.*

Figure 17. Illustrative scorecard for UK RIIO.[137]



Source: (Ofgem 2010)

A scorecard would not replace a more detailed filing from the utility, but would instead be a public-facing dashboard, hosted on the utility's website, the Commission's, or both, where ratepayers and regulators could easily access data regarding the utility's performance in a specific category or as a whole.[138] A scorecard should take the form of the goals-outcomes-metrics hierarchy described in these Comments. This will allow viewers to see immediately how the utility is performing at a broad level while also allowing for more granular data analysis. Data sets and possibly interactive dashboards should also be built into a scorecard interface, where appropriate.

[137] *Id.* at 78.
[138] *Synapse Handbook* at 32.

The comprehensive design of a performance metrics scorecard can and should occur at a later stage of this investigation, after the Commission has identified, vetted, and selected the performance objectives, outcomes, and outputs it wishes to track. Future Comments will thus address particular scorecard design issues to the extent possible given the expertise of regulators,[139] but several principles should guide creation of the scorecard. First, the scorecard should be publicly-accessible with a means to download the underlying data.[140] Second, the scorecard should be contextualized with appropriate targets, historical data, peer comparisons, and explanations of major events that impacted performance.[141] Third, a scorecard should be clear and concise, with metrics that can be easily interpreted by non-experts.[142] Fourth, a scorecard should be comprehensive, including all areas of utility performance the regulator wishes to monitor.[143] Finally, the scorecard should be up-to-date, with frequent data updates.[144]

A scorecard that adheres to these design principles should result in a high level of accountability for the utility and accessibility for the public and regulators.

2. Benefits of a scorecard approach.

Scorecards can themselves exert a strong performance incentive upon a utility, even without accompanying financial incentive mechanisms. According to experts:

> Reporting utility performance facilitates regulatory oversight and encourages utilities to strive for better performance, as subpar performance is likely to result in negative public response and greater regulatory scrutiny. Implementing, tracking, and reporting metrics is straightforward and low-risk. It can be designed to

[139] The design and implementation of a scorecard, or a more comprehensive dashboard tool, should be handled in a facilitated stakeholder process guided by an independent expert.
[140] *Synapse Handbook* at 32.
[141] *Id.*
[142] *Id.*
[143] *Id.*
[144] *Id.*

> present little administrative burden on either regulators or utilities, while providing valuable information.[145]

In addition, although scorecards require a concerted effort on the part of regulators and other stakeholders to develop, there is even greater complexity—and risk—involved in incorporating financial rewards or penalties. If the Commission wishes to adopt the familiar walk-jog-run approach to performance metrics, the adoption of a scorecard represents the walk phase.[146] Scorecards thus represent a straightforward, low-risk regulatory tool that facilitates regulatory oversight and encourages utilities to strive for better performance.

The benefits of the scorecard approach arise from the powerful incentives built into the deployment of transparency as a regulatory tool. The use of transparency in this manner has been used in other fields as well, notably environmental regulation.[147] For instance, a federal reporting mechanism for toxic chemicals has enabled "an unprecedented degree of self-monitoring, aggregation, disaggregation, comparison, ranking, and tracking of environmental performance" that "produces information far more valuable to reporting entities" than conventional forms of reporting.[148] In a similar way, even the act of aggregating far-flung utility data that is already reported can help uncover powerful insights into utility performance that might otherwise be lost across complex compliance filings and across various dockets.

A number of other jurisdictions have used transparency as a regulatory tool in recent years by adopting metric scorecards to measure utility performance.

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[145] *Id.* at 17.

[146] If the Commission decides to move beyond the scorecard approach in the future, the "jog" phase could be establishment of penalties and the "run" phase could be the establishment of financial incentives.

[147] *See, e.g.* Bradley C. Karkkainen, *Information as Environmental Regulation: TRI and Performance Benchmarking, Precursor to a New Paradigm?*, 89 Georgetown Law Journal 257, 260–61 (arguing that the federal EPA's Toxics Release Inventory program is a "watershed" use of performance monitoring and benchmarking as a regulatory tool).

[148] *Id.* at 261.

3. Experiences in other jurisdictions.

The Ontario Energy Board recently adopted a scorecard approach in a proceeding that spanned several years. In so doing, the Board noted the following benefits of this approach:

> A scorecard approach effectively organizes performance information in a manner that facilitates evaluations and meaningful comparisons. It provides a comprehensive view on performance through a focused set of measures that align with, and reflect a distributor's effectiveness in achieving, the Board's performance outcomes. That view can be at any point in time and over a period of time. Providing a longer-term view on performance, the Scorecard will present the five most recent years of available data for each measure. This period of time aligns with the planning and rate-setting timeframes set out in the [jurisdiction-specific] Report and will better reveal trends of continuous improvement.[149]

A number of other jurisdictions have adopted a scorecard approach to the implementation of performance-based regulation as well.[150] New York's REV proceeding is in the midst of a years-long stakeholder process of developing a utility scorecard.[151] The NYPSC staff have recommended scorecard metrics that track system utilization and efficiency, distributed generation, time-varying rate efficacy, market development, carbon reduction, customer satisfaction, and a host of other outcomes that commission is interested in. It should be noted that the NYPSC recommended that the scorecard approach "should be used as a starting point" in discussions that "should be developed further through a collaborative effort of the parties."

[149] Ontario Energy Board, Renewed Regulatory Framework for Utilities, Docket No. EB-2010-0377–79, Report of the Board 5 (Mar. 5, 2014).
[150] "Scorecards, with clear metrics and mandated formats approved by regulatory authorities, and designed with broad utility and stakeholder input, may become a hallmark of 21st century power sector regulation." David Littell et al., Nat'l Renewable Energy Lab. Technical Report No. NREL/TP-6A50-68512, *Next-Generation Performance-Based Regulation* 80 (Sep. 2017).
[151] *Id.* at 81 (noting that New York's scorecards are likely to be established by 2018).

The United Kingdom's utility regulator Ofgem has also developed a scorecard approach to display utility performance under the six output categories selected by Ofgem.[152] Similar to the experience in New York, regulators in the UK have undertaken a multi-year effort to select the metrics and establish targets to apply to this scorecard.[153]

Utilities in Illinois report a number of performance metrics.[154] This effort began in 2011, with penalty-only PIMs established to track basic aspects of electricity delivery and intended to track the progress of Commonwealth Edison's implementation of grid modernization technologies.[155] This effort was expanded in 2013, when an agreement between the utility and stakeholders resulted in a list of more than sixty additional performance metrics to be reported and tracked.[156]

The Massachusetts Department of Energy Resources employs interactive graphs to measure utilities' performance in the interconnection of distributed generation.[157] Experts note that this jurisdiction has excelled in the effective display and communication of these metrics to consumers.[158]

Finally, Hawaii recently adopted nearly thirty performance metrics for its utilities. The metrics focus on the outcomes like the achievement of renewable energy goals, reliability, and

[152] Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 34 (Jan. 2016). These output categories—safe network services, environmental impact, customer satisfaction, social obligations, connections, and reliability and availability—are discussed in greater detail above, in Section X.
[153] "Choosing objective metrics and setting targets at an appropriate level are not easy tasks, however. After several years of stakeholder consultations, several metrics have yet to be fully specified, while others (such as environmental impacts) are not yet mature enough to attach financial incentives." Mark Newton Lowry & Tim Woolf, Future of Electricity Regulation Report No. 3, *Performance-Based Regulation in a High Distributed Energy Resources Future* 34 (Jan. 2016).
[154] Synapse Handbook at 84–88.
[155] *Id*. at 84.
[156] *Id*. at 84–85.
[157] *Id*. at 32.
[158] *Id*. at 32–33.

cost reduction.[159] Customer service is also measured by conducting "Customer Transaction Surveys," which utilize a 100-point scale to rate utilities' performance in change in service, trouble reports, and bill inquiries.[160] Utilities are required to post the results on their websites.[161]

It should be acknowledged that a number of these jurisdictions have deregulated electricity regulatory structures with retail choice. One benefit of a scorecard approach for those states is the ability for consumers to compare electricity providers. Ratepayers in a vertically-integrated state obviously do not have to make the same choice. But there are still benefits to adopting the scorecard approach for these jurisdictions. The use of benchmarking performance amongst similar utilities across the country means that vertically-integrated utilities' performance can be compared to its peers. Perhaps the strongest benefit of the scorecard approach, however, is in the power of transparency and the resultant accountability. The lack of choice does not mean that Minnesota ratepayers have no interest in knowing how their utility is performing. Even in the absence of retail competition, performance metrics and scorecard-based reporting have the potential to produce significant ratepayer benefits.

IV. NEXT STEPS

OAG Recommendation 21: The Commission should adopt a "Phase 1.5" that would allow the Commission and other stakeholders to assess the information provided in the first round of comments, possibly with facilitated discussions or workshops, further research into possible metrics, and development and possibly the early implementation of the scorecard reporting mechanism.

OAG Recommendation 22: The Commission should decline to consider any financial incentive mechanism in the near-term, which includes the remaining years of its current MYRP.

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[159] *Id.* at 89.

[160] Hawaiian Electric, Customer Service, https://www.hawaiianelectric.com/about-us/key-performance-metrics/customer-service (last accessed Nov. 14, 2017).

[161] *See, e.g.* Hawaiian Electric, Key Performance Metrics, https://www.hawaiianelectric.com/about-us/key-performance-metrics (last accessed Nov. 14, 2017).

OAG Recommendation 23: If the Commission decides that a financial incentive mechanism is required to incentivize Xcel to achieve specific regulatory outcomes, it should develop and implement a penalty-only mechanism first.

OAG Recommendation 24: An incentive mechanism should only be adopted at the start of a MYRP, with the design details finalized prior to a rate case filing.

These Comments have addressed Steps One through Four in the PIMs Design Process. These steps transform regulatory goals into desired regulatory outcomes, and outcomes into actionable performance metrics that can be reported using a scorecard. If the experiences of other jurisdictions are instructive, the first four steps should require considerable resources and time to effectively accomplish. This endeavor should be as collaborative as possible, with input from stakeholders and from experts in the field.

If implemented properly, the adoption of performance metrics with a scorecard approach should result in significant public benefits by holding the utility more accountable. These gains could be achieved without ever implementing financial incentive mechanisms, which could increase the risk to ratepayers and further muddy the layers of structural and explicit incentives acting upon the utility. A key to unlocking the benefits of a robust performance metrics scorecard is to establish a clear, yet flexible implementation timeline. The Commission's Notice broadly defines phase one as gathering information about existing metrics and possible additional metrics. Phase two focuses on the application of the metrics developed in phase one including "possible standards or performance targets and the potential for using financial incentives to drive Xcel's performance."[162]

These two phases generally track the process outlined in these Comments, as seen below in Table X, but a brief comment and reply period is inadequate to thoroughly work through the first three to four steps of this process. At the conclusion of Phase 1, the Commission should

[162] Commission Notice at 2.

adopt the broad regulatory goals and desired regulatory outcomes described in these Comments, with the input of other stakeholders. The Commission could even move forward on implementing an early scorecard, where existing metrics and possibly other established metrics could be reported in a central location, such as a page on the Company's website.

The findings in Phase 1 will establish a direction for work on the identification and vetting of possible metrics, which may not be well-suited to only a single comment period. The OAG thus recommends that the Commission adopt a "Phase 1.5" that would allow the Commission and other stakeholders to assess the information provided in the first round of comments, possibly with facilitated discussions or workshops, further research into possible metrics, and development and possibly the early implementation of the scorecard reporting mechanism.

Table 18. Next steps

	Define Goals	ID Desired Outcomes	ID Metrics	Est. Metrics & Review	Est. Targets	Est. Financial Incentives	Eval., Impr., Repeat
Phase 1							
Phase 1.5							
Phase 2						If necc.	

Under this construct, Phase 1.5 would result in a menu of vetted performance metrics that Xcel could add to its scorecard and begin reporting. Phase 2 would commence after at least one year of reporting the full suite of metrics selected in Phases 1 and 1.5. Phase 2 should include a review of the initial results from the various output metrics and possible addition, deletion, or modification of metrics. Targets or benchmarking could also take place during this phase.

Step Six—establishing financial incentive mechanisms—will occur, if it is deemed necessary, much later in the process.[163] As noted earlier, the OAG does not recommend that the Commission consider any financial incentives in the short-term[164] for a number of reasons. First, there has not been sufficient development of a clear objective of why such an incentive would be necessary at this time. Second, there is no indication that an incentive overlaid onto the current regulatory framework could overcome the powerful implicit incentives that act upon utilities. This is a threshold question that must be addressed before incentives are considered. Layering incentives upon existing implicit and explicit incentives could result in unintended consequences and significant ratepayer cost. Third, "[e]very performance incentive mechanism carries the risk that utilities will game the system or manipulate the results."[165] Sound metric design can help mitigate this risk, but the introduction of financial rewards magnifies this risk considerably. MYRP process. The introduction of such a mechanism during the current, settled rate plan could distort or diminish any gains that would otherwise be realized.[166]

If the Commission desires to build a performance incentive mechanism onto the existing suite of performance metrics at some time in the future it should first adopt a penalty-only mechanism. The Commission should not apply such an incentive mechanism, even a penalty-only mechanism to an existing MYRP. The structure of any incentive mechanism should be finalized and then incorporated into a MYRP proceeding. This will ensure that the rate case will be fully considered and implemented by taking into account an incentive mechanism.

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[163] Benchmarking of utility performance is likely an intermediate step, as utility performance can be benchmarked and tracked for informational purposes without the development of specific targets.
[164] At the very least, the short-term encompasses the remaining plan years of Xcel Energy's current MYRP.
[165] *Synapse Handbook* at 56.
[166] "Perhaps the most challenging aspect of designing performance incentive mechanisms is anticipating and avoiding unintended consequences. . . . Unintended effects can also result from failing to recognize the linkages between various aspects of the utility's system." *Synapse Handbook* at 54.

V. CONCLUSION

As stated throughout, performance metrics hold the promise of making utilities better and ratepayers better off. This outcome is only achievable by following a deliberate PIM Design Process. Such a process addresses head-on the big picture questions swirling throughout the electric industry. It also provides the Commission with an opportunity to clearly define its overarching regulatory goals and to transform those goals into desired regulatory outcomes and finally into well-designed performance metrics. Ratepayers will be better off with a utility that is more focused upon achieving the desired regulatory outcomes. Ratepayers will also benefit from having more transparent information about utility performance at their fingertips, as transparency can be a powerful, low-risk regulatory tool to wield. The Commission has the opportunity in this docket to revisit traditional measures of utility success while also keeping an eye toward future developments. This is likely to be the beginning of a lengthy process, but hopefully one that will turn the focus of the regulatory environment toward ratepayers.

VI. SUMMARY OF OAG RECOMMENDATIONS.

Initial Process

OAG Recommendation 1: The Commission may wish to address threshold questions regarding performance metrics and their place in the current regulatory framework that could give shape to a clear objective in this docket.

OAG Recommendation 2: The Commission should adopt a deliberative process, described in these Comments as the PIM Design Process, to follow as it considers the implementation of performance incentive mechanisms for Xcel Energy.

OAG Recommendation 3: Phase 1 of this investigation, which the Commission can move forward with immediately, should be restricted to the first four steps of the PIM Design Process: articulation of state energy goals, identification of desired outcomes, identification of possible metrics, and the establishment of metrics reporting requirements.

Regulatory Goals, Outcomes, Metrics

OAG Recommendation 4: The Commission should decline to adopt a financial incentive mechanism during this phase of the docket because performance metrics alone can provide benefits to the public, adding a financial incentive during the MYRP would distort the assessment of the MYRP, and it is unclear how performance-based compensation could work with a vertically-integrated utility like Xcel.

OAG Recommendation 5: The Commission should establish the following four regulatory policy goals: customer focus; operational effectiveness; public policy responsiveness; and financial performance.

OAG Recommendation 6: The Commission should find that the current regulatory system in Minnesota is rooted in cost-of-service ratemaking, which incentivizes utilities to pursue capital expenditures, increase sales, and cut costs between rate cases.

OAG Recommendation 7: The Commission should establish near-term regulatory outcomes intended on making the existing regulatory structure function more efficiently and equitably, while also establishing desired outcomes to ensure that Minnesota ratepayers benefit from emerging technologies and services in the long-term.

OAG Recommendation 8: The Commission should adopt four desired regulatory outcomes related to the Customer Focus regulatory goal: service quality, customer satisfaction, affordability, and empowered customers.

OAG Recommendation 9: The Commission should adopt three desired regulatory outcomes related to the Operational Effectiveness regulatory goal: cost control, asset management, and resiliency.

OAG Recommendation 10: The Commission should consider adopting four desired regulatory outcomes related to the Public Policy Responsiveness regulatory goal: grid modernization, distributed energy resources, reducing carbon intensity of generation, and energy efficiency and conservation.

OAG Recommendation 11: The Commission should adopt three desired regulatory outcomes related to the Financial Performance regulatory goal: return-on-equity, rider revenue, and productivity.

OAG Recommendation 12: The Commission should consider adopting the fourteen regulatory outcomes that correspond to the regulatory policy goals of Customer Focus, Operational Effectiveness, Public Policy Responsiveness, and Financial Performance.

OAG Recommendation 13: The Commission should adopt metrics design principles to ensure that metrics are tied to policy goals and outcomes, quantifiable, verifiable, clearly defined, and subject to utility control.

OAG Recommendation 14: The Commission should consider increasing the granularity of reliability metrics to increase the efficiency and equity of distribution-side investments.

OAG Recommendation 15: The Commission should revisit technical metrics to ensure uniformity in methods and assumptions and clarity in the meaning of the metrics.

OAG Recommendation 16: The Commission should begin to develop a customer survey to measure customer satisfaction and preferences across a wide variety of media platforms that better-reflect the way in which ratepayers interact with the Company today.

OAG Recommendation 17: The Commission should investigate metrics tied to the regulatory outcome of productivity to ensure that utility productivity gains due to multiyear rate plans are occurring. This metric or metrics, in particular, may benefit from an independent third party to design and implement.

OAG Recommendation 18: The Commission should investigate metrics related to other outcomes impacted by multiyear rate plans, including the desired regulatory outcomes of affordability, cost control, ROE, and rider revenue.

Metrics Reporting

OAG Recommendation 19: The Commission should develop performance metrics tied to the regulatory outcomes of customer empowerment and DER because the data generated by these metrics will assist the Commission as it considers whether future changes to utility regulation would be appropriate.

Next Steps

OAG Recommendation 20: The Commission should adopt a scorecard approach for the reporting of future performance metrics.

OAG Recommendation 21: The Commission should adopt a "Phase 1.5" that would allow the Commission and other stakeholders to assess the information provided in the first round of comments, possibly with facilitated discussions or workshops, further research into possible metrics, and development and possibly the early implementation of the scorecard reporting mechanism.

OAG Recommendation 22: The Commission should decline to consider any financial incentive mechanism in the near-term, which includes the remaining years of its current MYRP.

OAG Recommendation 23: If the Commission decides that a financial incentive mechanism is required to incentivize Xcel to achieve specific regulatory outcomes, it should develop and implement a penalty-only mechanism first.

OAG Recommendation 24: An incentive mechanism should only be adopted at the start of a MYRP, with the design details finalized prior to a rate case filing.

Dated: December 21, 2017

Respectfully submitted,

LORI SWANSON
Attorney General
State of Minnesota

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I. APPENDIX I: GLOSSARY

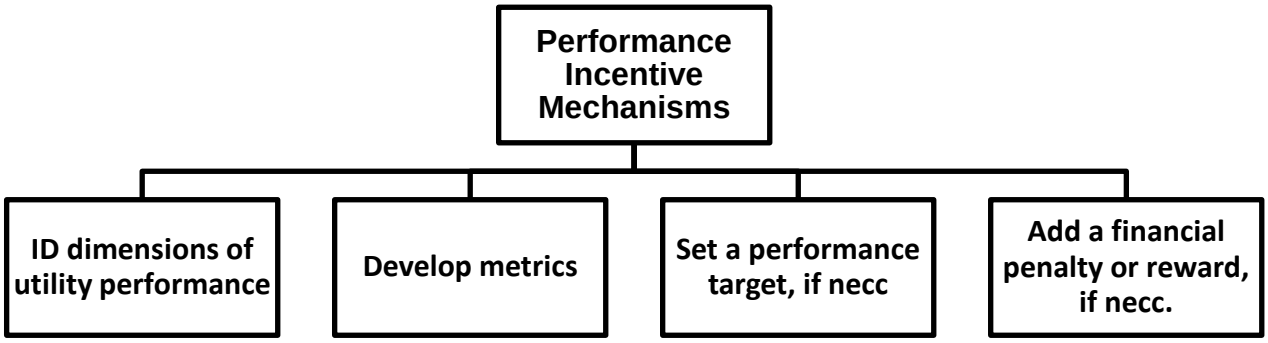
Performance-based regulation ("PBR") is an approach to regulation that is designed to strengthen utility performance drivers or incentives.[167] PBR is a broad construct that incorporates a number of concepts, such as performance incentive mechanisms and multiyear rate plans. Elements of PBR have long been a part of utility regulation in Minnesota in areas such as service quality and energy conservation. Minnesota has already adopted elements of PBR, and did so long ago. Broadly speaking, PBR can encompass any regulatory tool that deviates from traditional cost-of-service regulation.

Performance-based compensation ("PBC") is a regulatory model, or approach, that ties a portion of a utility's earnings to a utility's performance. This is done by utilizing an **earnings-adjustment mechanism ("EAM")**, which specifies the factors upon which a utility's earnings are adjusted. There are several other jurisdictions considering EAMs.

An EAM is a form of **performance incentive mechanism ("PIM").** A PIM can be divided into components of metrics, targets, and financial incentives (rewards, penalties, or both) that are designed to strengthen utility incentives in targeted areas.[168] All PIMs consist of performance metrics, the addition of performance targets and/or incentives is optional. The figure below is adapted from the Synapse Handbook and describes the relationship of PIMs to performance metrics, targets, and incentives.[169]

[167] LBNL FEUR No. 3 PBR in DER at vii.
[168] FEUR 3 at vii.
[169] *Synapse Handbook* at 7 (fig. 1).

Figure A. PIMs hierarchy.



Performance metrics ("PMs") are simply standards of measurement that can allow regulators to determine how well a utility is performing in an area of interest.[170] Metrics can be used to monitor a number of different aspects of a utility, from traditional areas of policy concern like reliability to modern issues like de-carbonization and distributed energy resources. There are significant advantages to establishing PMs—even without attendant financial rewards or penalties—but the selection and design of metrics must be carefully considered before implementation.[171] A lack of consideration can lead to metrics that report data that does not provide useful information, or even that is misleading.[172]

The **PIM Design Process** is a series of steps, developed from a collection of expert resources, a state should follow to design PIMs.

[170] *Synapse Handbook* at 19.
[171] *Synapse Handbook* at 17.
[172] *Synapse Handbook* at 28.

Figure B. The PIM Design Process.[173]

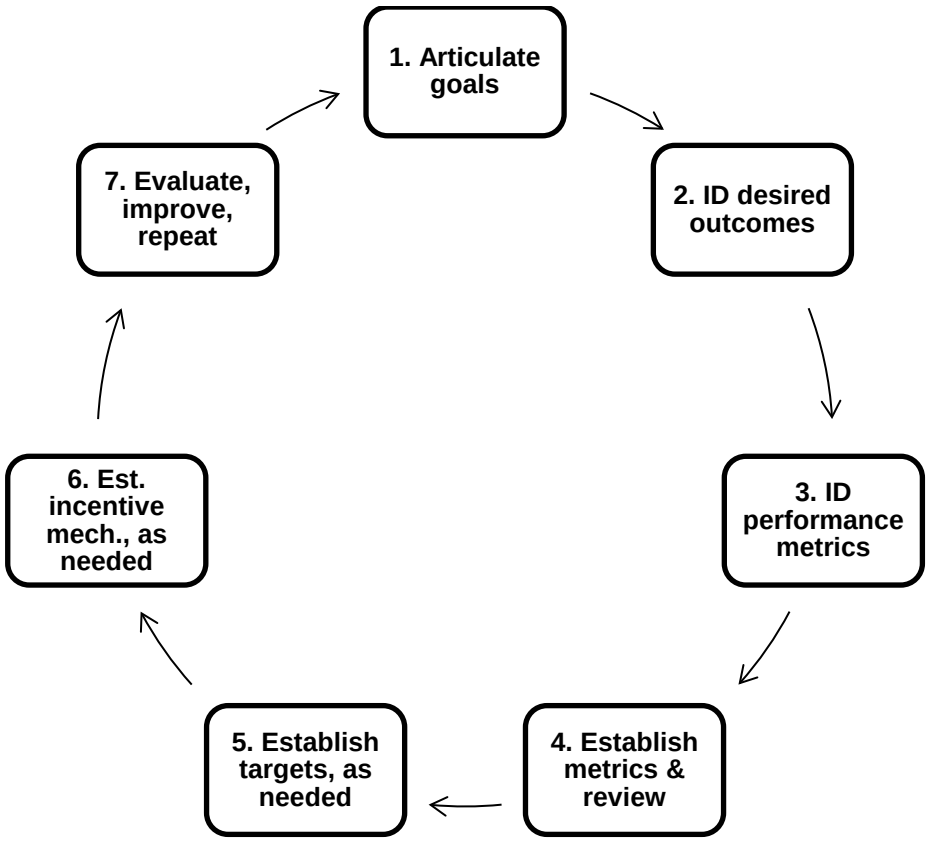


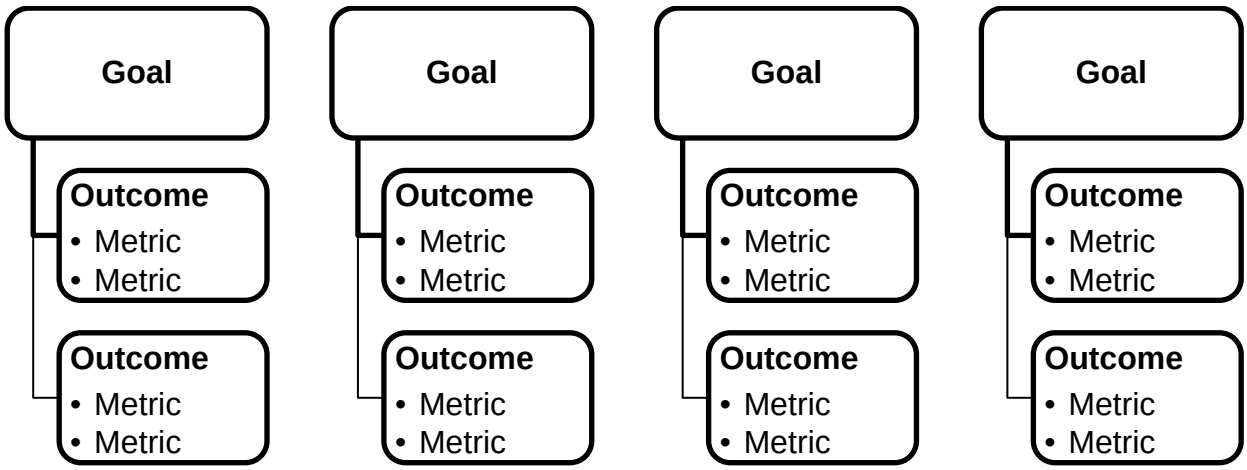
Figure B lays out this process, which has **Implicit utility financial incentives** are the underlying financial incentives that drive utility decision-making. These incentives are created by the regulatory structure and are incredibly potent and difficult to alter. PIMs can be designed to both alter and enhance underlying utility drivers.[174] A regulatory tool designed to affect implicit incentives creates **explicit incentives**. To avoid adverse public interest outcomes, it is vital to understand these underlying incentives before implementing a PIM with a financial component.

[173] Adapted from *Synapse Handbook* at 5, 52.

[174] For example, a PIM related to energy efficiency is designed to deaden the utility driver to sell more units of energy by providing a (typically large) financial incentive to urge the utility to spend money on saving energy. A PIM related to cost containment for a utility under a multiyear rate plan may be designed to enhance the utility's underlying driver to reduce costs (such a PIM should be accompanied by PMs related to service quality and reliability, however).

Fifth, regulatory policy **goals, outcomes, and metrics** form a hierarchy that is useful in organizing performance metrics. At the highest level, policy goals are core principles of utility regulation, such as a focus on the customer or operational efficiency. Objectives could be considered attributes of the regulatory compact in that they describe what regulators expect from utilities in exchange for granting the utility a legal monopoly. Regulatory outcomes are related to policy goals but are more granular. For example, service quality is an outcome that falls under the broader customer focus goal. Finally, metrics measure performance toward a particular regulatory outcome. They are methods to objectively measure whether a particular regulatory outcome is being met by the utility. For example, call answer time is a metric that can provide insight into whether an outcome of service quality is being realized and, in a larger scope, whether the regulatory goal of customer focus is being met.

Figure C. Goals-Outcomes-Metrics Hierarchy



II. APPENDIX II: ESTABLISHED PERFORMANCE METRICS

Reg. Goal	Desired Outcome	Performance Metric (*currently reported to PUC*)	Formula	Notes
Customer Focus	**Service Quality**	*System Average Interruption Duration Index (SAIDI)*	Total minutes of sustained customer interruptions / total number of customers	EIA Form 861
		System Average Interruption Frequency Index (SAIFI)	Total number of sustained customer interruptions / total number of customers	EIA Form 861
		Customer Average Interruption Duration Index	Total number of sustained customer interruptions / total number of interruptions	Collect from utility
		Momentary Average Interruption Frequency Index (MAIFI)	Total number of momentary customer interruptions per year / total number of customers	Collect from utility
		Average Service Availability Index (ASAI)	Percentage of time a customer receives power during specified time	Collect from utility
		Customers Experiencing Multiple Interruptions (CEMI)	Ratio of individual customers experiencing *n* or more sustained interruptions to tot. # customers served	Collect from utility
		Customers Experiencing Lengthy Interruption Durations (CELID)	Ratio of individual customers that experience interruptions w durations longer than or equal to given time	Collect from utility
		Power quality	Numerous available metrics indicating changes in voltage	Collect from utility
		Total Case Rate (TCR)	# of work-related deaths, injuries, or days away from work x 200,000 / employee hours worked	OSHA Form 300
		Days Away, Restricted, and Transfer (DART) case rate	# work-related days away from work and job transfers or restrictions x 200,000 / Employee hours worked	OSHA Form 300
		Days Away From Work (DAFWII) case rate	# work-related days away from work x 200,000 / Employee hours worked	OSHA Form 300
		Incidents, injuries, and fatalities	# incidents per year, by severity of outcome and activity type	Collect from utility
		Emergency response time	Percent of electric emergency responses within 60 min. per year	Collect from utility
		Meter reading performance	Various metrics on meters read by utility, customers	Collect from utility

Customer Focus	**Service Quality**	***Involuntary disconnections***	Various metrics on numbers and scenario	Collect from utility
		Service extension request response times	Days to respond to requests	Collect from utility
		Emergency medical status	Number of requests for status	Collect from utility
		Deposits	Number of customers required to make deposits as condition of service	Collect from utility
		Worst performing feeder	ID poor performing circuits and necessary changes	Collect from utility
	Customer Satisfaction	*Call center answer speed*	Percentage of calls answered w/in period of time	Collect from utility
		Transaction surveys	Percentage of customers satisfied with their recent transaction with utility	Survey
		Customer complaints	Formal complaints to regulatory agencies (# per 1,000)	Collect from utility
		Order fulfillment	Speed of order fulfillment	Collect from utility
		Missed appointments	Percentage of appointments missed when customer required to be on premises	Collect from utility
		Avoided shutoffs and reconnections	Disconnects and reconnections avoided by customer percentage of income payment plans or other means	Collect from utility
		Residential customer satisfaction	Electric Utility Residential Customer Satisfaction index	J.D. Power
		Business customer satisfaction	Electric Utility Business Customer Satisfaction Index	J.D. Power
		Billing accuracy	Percentage of accurate bills	Collect from utility
		Billing timeliness	Number of months to adjust invoices	Collect from utility
	Afford.	*Average billing*	Average bill by customer class	Collect from utility
	Empower. Customers	Information availability	# of customers able to access daily usage data via we portal	EIA Form 861
		Time-varying rates	# customers on time-varying rates / total customers	EIA Form 861
Operational Effectiveness	**Cost Control**	Capacity costs	Cost per kW of installed capacity	FERC Form 1
		Total energy costs	Expenses per net kWh	FERC Form 1
		Fuel cost	Avg. cost of fuel per kWh net gen and per MMBTU; total fuel costs	FERC Form 1
		Customer costs	Total cost per customer	Collect from

				utility
Operational Effectiveness	**Cost Ctrl.**		Total cost per mile of line	Collect from utility
	Asset Management	Effective resource planning	Numerous metrics re incorp. of stakeholder input, consideration of relevant resources, etc.	Third-party evaluator
		Cost-Eff. alt. resources	$ / MW cost of alt. portfolio rel. to the $ / MW of trad. investment	Collect from utility
		Fuel usage	Quantity of fuel burned	FERC Form 1
		Heat rate	Avg. BTU per kWh net generation	FERC Form 1
		Capacity factor	Avg. energy gen. for a period / energy that could be gen. at full nameplate capacity	FERC Form 1
		Load factor	Sector avg. load / sector peak load	Collect from utility
			Monthly system avg. load / monthly system peak load	FERC Form 1
		Usage per customer	Sector sales / sector # of customers	FERC Form 1
		Aggregate power plant efficiency	Equiv. Forced Outage Rate (EFOR)	NERC Generating Availability Data System
			Weighted equivalent availability factor	NERC
		System losses	Total electricity losses / MWh generation	FERC Form 1
	Resiliency	Flexible Resources	MW of fast ramping capacity	Collect from utility
Public Policy	**Grid Mod.**	Advanced metering capabilities	# customers with AMI and AMR	EIA Form 861
			Energy served through AMI	EIA Form 861
		Provision of customer data	Customers able to authorize third-party access electronically	Collect from utility
			Percent of customers who have authorized third-party access	Collect from utility
			Third-party data access at same granularity and speed as customers	Collect from utility
		Reduced outage impact	Circuit Average Interruption Duration Index for grid modernized feeders	Collect from utility
	DERs	Distributed generation	# installations per year	Collect from utility
			Net metering installed capacity	EIA Form 861
			Net metering MWh sold back	EIA Form 861

			to utility	
Public Policy	**DERs**		Net metering number of customers	EIA Form 861
			MW installed by type	EIA Form 861
		Energy storage	# installations per year	Collect from utility
			MW installed by type	Collect from utility
			Percent of customers with storage tech. enrolled in DR programs	Collect from utility
		Electric vehicles	# of EVs added to grid each year	Collect from utility
			Percent customers with EVs enrolled in DR programs	Collect from utility
		Demand response	Percent of customers per year	EIA Form 861, FERC Form 1
			# customers enrolled	EIA Form 861
			MWh of DR provided over past year	EIA Form 861
			Potential and actual peak demand savings	EIA Form 861
		Interconnection support	Avg. days for customer interconnection	Collect from utility
			Customer satisfaction with interconnection process	Survey
		Third-party access	Open and interoperable smart grid infrastructure that facilitates third-party devices	Collect from utility
			Third party vendor satisfaction with utility interaction	Survey
	Carbon Intensity	CO_2 Emissions	Tons CO_2 per year	EPA Air Markets Program Data
		Carbon intensity	Tons CO_2 per customer	EPA Air Markets Program Data and EIA 861
		System carbon emission rate	Tons CO_2 per MWh sold	EPA Air Markets Program Data and EIA 861
		Fossil carbon emission rate	Tons CO_2 per MWh fossil generation	EPA Air Markets Program Data and EIA 861
		Fossil generation	Fossil percent of total generation	EIA Form 923 and Form 860
		Renewable Generation	Renewable percent of total generation	EIA Form 923 and EIA Form

				860
Public Policy	**EE**	Participation	Percent of customers per year participating in EE programs	Collect from utility
		Savings	Annual and lifecycle energy savings	EIA Form 861 / CIP
			Annual and lifecycle peak demand savings	EIA Form 861
		Costs	Program costs per unit of energy saved	EIA Form 861
			Annual financial incentive / program costs	Collect from utility
Financial Performance	**ROE**	ROE	Actual earned ROE	Collect from utility
		Leverage	Debt to equity ratio	Collect from utility
	Riders	Rider-related revenue	$ rider revenue	Collect from utility
			$ rider revenue / total non-fuel revenue	Collect from utility
	Product-ivity	Incentive power analysis		Independent evaluator
		Empirical research on utility productivity		Independent evaluator

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December 21, 2017

Mr. Daniel Wolf, Executive Secretary
Minnesota Public Utilities Commission
121 Seventh Place East, Suite 350
St. Paul, MN 55101-2147

RE: ***In the Matter of a Commission Investigation To Identify and Develop Performance Metrics and, Potentially, Incentives for Xcel Energy's Electric Utility Operations***
Docket No. E-002/CI-17-401

Dear Mr. Wolf:

Enclosed and e-filed in the above-referenced matter please find *Initial Comments of the Office of the Attorney General*.

By copy of this letter, all parties have been served. An Affidavit of Service is also enclosed.

Sincerely,

s/ **Joseph A. Dammel**
JOSEPH A. DAMMEL
Assistant Attorney General

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Enclosures

AFFIDAVIT OF SERVICE

RE: ***In the Matter of a Commission Investigation To Identify and Develop Performance Metrics and, Potentially, Incentives for Xcel Energy's Electric Utility Operations***
Docket No. E-002/CI-17-401

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

I, RACHAEL BERNARDINI, hereby state that on this 21st day of December, 2017, I filed with eDockets ***Initial Comments of the Office of the Attorney General*** and served the same upon all parties listed on the attached service list by email, and/or United States Mail with postage prepaid, and deposited the same in a U.S. Post Office mail receptacle in the City of St. Paul, Minnesota.

s/ **Rachael Bernardini**
RACHAEL BERNARDINI

Subscribed and sworn to before me
this 21st day of December, 2017.

s/ **Patricia Jotblad**
Notary Public

My Commission expires: January 31, 2020

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