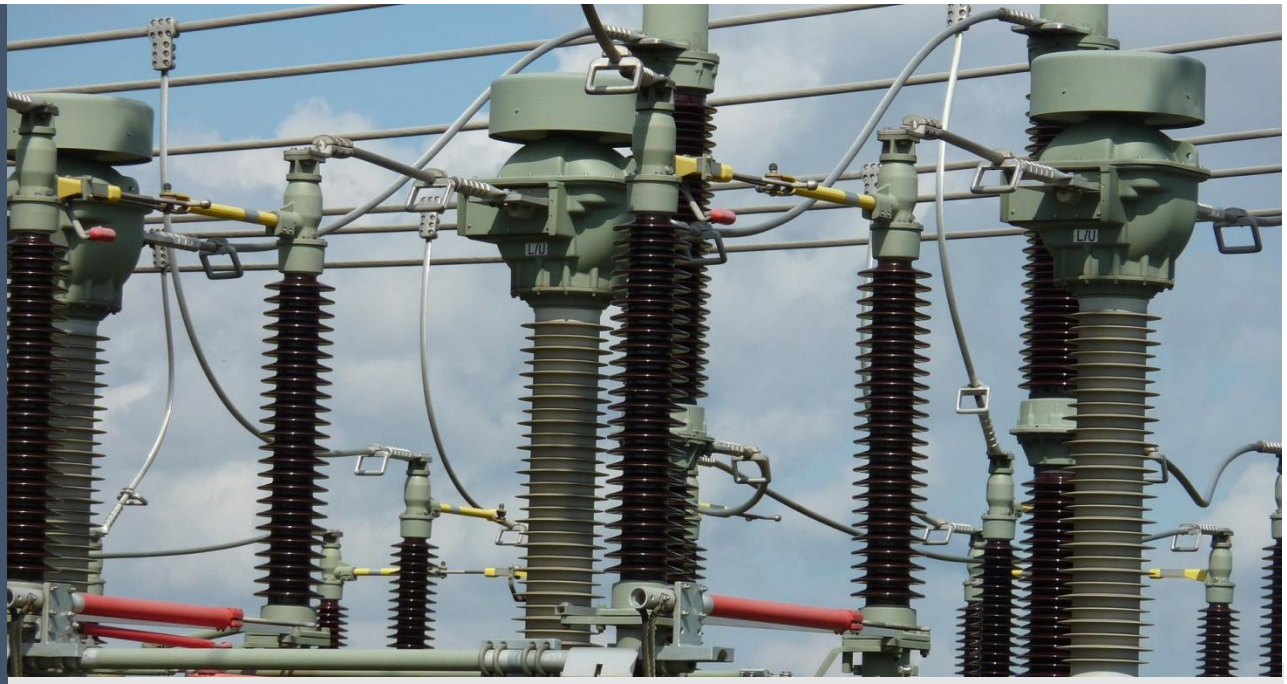

YOU GET WHAT YOU PAY FOR:

MOVING TOWARD VALUE IN UTILITY COMPENSATION

PART 2 – REGULATORY ALTERNATIVES

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AMERICA'S POWER PLAN

ENERGY INNOVATION POLICY & TECHNOLOGY LLC

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Energy Innovation: Policy and Technology LLC is an energy and environmental policy firm. We deliver high-quality research and original analysis to policymakers to help them make informed choices on energy policy. We focus on what matters and what works. Energy Innovation's mission is to accelerate progress in clean energy by supporting the policies that most effectively reduce greenhouse gas emissions. Through customized research and analysis for decision makers, we uncover the strategies that will produce the largest results. We work closely with other experts, NGOs, the media, and the private sector to ensure that our work complements theirs.

ABOUT AMERICA'S POWER PLAN

America's Power Plan is a platform for innovative thinking about how to manage the transformation happening in the electric power sector today. We bring together America's clean energy thought leaders to assemble information on a package of policies, markets, and regulations to maximize the grid's affordability, reliability, and environmental performance. America's Power Plan curates expert content from the field, with the aim of integrating previously-siloed work into a package of solutions for regulators, policymakers, market operators, utilities, independent energy service providers, and other power sector professionals.

EXECUTIVE SUMMARY

Like other corporations, investor-owned electric utilities' primary duty is to maximize profits for their shareholders. As Part I of this series explained in detail, utilities that operate under cost of service regulation (COSR) achieve a regulated rate of return on capital investments that almost ubiquitously exceeds their cost of raising funds, creating value for their shareholders. This regulatory model works reasonably well to align utility motivation with the public interest when rapid system build-out is the top goal for policymakers. In fact, without a rate of return above the cost of equity for utilities, the system would stagnate—no activities would be profitable. But when capital-based solutions are not preferred or new technology creates room for competition, COSR may create a disconnect between utility shareholder value and outcomes that most benefit society.

Today, opportunities exist for non-utility-owned, non-capital resources to meet societal goals at lower costs than conventional utility-owned capital investments. The rapid cost declines of wind and solar challenge the conventional model of large fossil fueled generation. Demand can now be dispatched alongside supply, leading to a much more flexible system. Rapid progress on both the cost and operational effectiveness of distributed energy resources (DERs) means that customers and third parties can, in some cases, provide services that avoid the need for significant deployment of utility capital.

Societal preferences have shifted too. For instance, many utility regulators require utilities to adopt low-carbon energy resources, while others have prioritized resilience, resource diversity, or customer choice as critical power sector outcomes. Regulators increasingly balance these priorities with axiomatic goals like customer satisfaction, safety, universal access, and affordability. Where non-capital strategies are the best fit to achieve least-cost provision of electricity that meets these societal goals, COSR is poorly suited to motivate the new role society needs the utility to play amidst these changes.

This paper examines three cases where COSR clearly motivates utilities to pursue sub-optimal outcomes compared to some alternative regulatory strategy. Each case compares how utilities and customers operating in a series of different regulatory models may fare, with a special focus on performance incentive mechanisms (PIMs) and revenue caps.

Two Key Tools: Performance Incentive Mechanisms and Revenue Caps
▪ Performance Incentive Mechanisms Regulators offer a financial upside or downside to utilities for performance against targeted outcomes via cash payments or incentive rates of return. Savings or profits can also be shared with customers. ▪ Revenue cap Regulators establish a benchmark for what an efficient level of utility expenditures would be and tie utility revenue to the achievement of that benchmark.

The cases in this paper draw on simplified financial models designed to provide high-level insights into whether and to what extent COSR and its alternatives can align utility shareholder value creation with societal value creation. In this analysis, effective realignment of utility motivation is not synonymous with the utility having higher *revenue* relative to COSR. Instead, successful realignment depends on whether investments that are more valuable to society create more *shareholder value* (utility profit) than those that fail to maximize the public interest.

Though the examples in this paper test scenarios in which DERs provide equivalent service at a lower price, utilities most likely must invest substantial amounts of capital into the electricity system in order to meet new public demands for resilience, environmental performance, and customer choice. But in some cases, DERs save customers money, improve customer satisfaction, and clean up the resource mix. **The purpose of this paper is to explore which regulatory models align utility profit with societal value under scenarios in which traditional, utility-owned, capital solutions may not be optimal for customers.**

REGULATORY ALTERNATIVES		
Case 1: Meeting demand growth on a distribution circuit		
Scenarios Examined ▪ Conventional substation upgrade - $56M ▪ Utility-owned distributed energy resource (DER) alternative - $47M ▪ Third-party DER alternative - $43M	**Regulatory Models** ▪ Cost of service regulation (COSR) ▪ COSR + peak demand reduction performance incentive mechanism (PIM) ▪ COSR + rate of return on third-party DER investments ▪ Benchmarked revenue cap	**Conclusions** ▪ When compared to COSR, the three alternative regulatory models better align customer value and utility motivation ▪ The peak reduction PIM (B) and the rate of return on DERs (C) were insufficient to overcome the utility's return on capital under COSR ▪ Benchmarked revenue cap (D) creates the clearest alignment between utility value and customer value
Case 2: Utility grid modernization investment		
Scenarios Examined ▪ Utility-owned and operated grid mod - $1.9B ▪ Incorporate third-party telemetry solution - $1.6B	**Regulatory Models** ▪ Cost of service regulation ▪ Benchmarked revenue cap ▪ Benchmarked revenue cap with stretch factor	**Conclusions** ▪ Revenue caps create a powerful incentive for the utility to identify and implement less expensive third-party approaches to large investments when they are available

		▪ Stretch factors better encourage cost containment
Case 3: Balancing reliability, fuel price risk, and environmental performance		
Scenarios Examined ▪ PPA with large gas-fired power plant - $2.9B ▪ PPAs with gas-fired peaker, renewables, and DERs - $2.2B	**Regulatory Models** ▪ Fuel cost pass through ▪ Modified fuel cost adjustment mechanism ▪ CO_2 performance incentive mechanism (PIM) ▪ Revenue cap + CO_2 PIM + stretch factor	**Conclusions** ▪ Shifting fuel price risk onto utilities may result in unfair rewards or penalties; outcome-oriented regulation like CO_2 PIMs or a revenue cap can align utility motivation directly with societal goals. ▪ A revenue cap could be used in conjunction with PIMs to motivate utilities to identify the least-cost approach to reducing carbon emissions

Examined together, the financial models produced three key takeaways:

1. *Cost of Service Regulation (COSR) creates utility incentives that are misaligned with societal value in scenarios where non-infrastructure or non-utility-owned alternatives are superior from a societal perspective.*
2. *Performance Incentive Mechanisms (PIMs) hold the potential to monetize presently uncaptured benefits and costs in utility regulation, and to motivate utilities to perform against outcomes that society prioritizes.*
3. *Multiyear revenue caps can be a powerful tool to align utility shareholder value with non-infrastructure-based strategies to meet grid needs. These tools deserve greater consideration, alongside PIMs, in utility regulatory model discussions.*

Regulatory models should not be examined in a vacuum, however. There are real risks to implementing each of the regulatory models. For example, the powerful incentives created by revenue caps mean that they must be set at the right level or else risk unintended consequences. In areas where a preferred alternative provides non-monetized societal value, PIMs can be used to motivate desirable project attributes, but may result in arbitrary swings in compensation if the targets fail to anticipate technological potential or if they fail to adjust for macroeconomic or weather impacts outside the utility's control.

The paper concludes with options for regulators, utilities, and other stakeholders to experiment with gradual next steps. Improvement to the existing regulatory model holds immense potential to create value for customers and society.