PRIVATE (UTILITY) REGULATORS

BY
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The concept of the regulatory compact has long underpinned regulation of electric utilities: In exchange for a government-conferred monopoly over electricity services, the utility company submits itself to substantial government oversight, which—in theory at least—ought to prevent the emergence of monopolistic prices and other anticompetitive inefficiencies. Nevertheless, as this Article reveals, existing regulatory treatment of electric utilities fails to deliver on the public benefits of the regulatory compact. The Article supports this conclusion by highlighting previously overlooked indicators of utility companies' inefficiencies, and it attributes those inefficiencies to information asymmetries and regulatory capture.

Having demonstrated problems with the existing regulatory compact, this Article then turns to potential solutions. In so doing, the Article draws from a seemingly unlikely source: private equity. Though superficially distinct, the "business" of private equity actually shares important functional similarities with the task of public utility regulation, as private equity managers, like public utility regulators, must "oversee" the businesses without altogether taking over management of the company itself. Given these shared challenges, public utility regulators would do well to utilize tools that have yielded success within the private-equity sphere. Specifically, the Article points to two such tools—zero-based planning ("ZBP") and complete transparency—that, it argues, will enable regulators, intervenors, and non-traditional market participants to innovate and ensure a more cost-effective energy transition.

While this would be a radical departure from current regulatory proceedings, it is necessary if the regulatory compact is to survive in a water- and carbon-constrained world. Utilities, through their actions in rate cases, are entrenching their positions, requiring both more time and money for any transition to the new energy system to occur. Adoption of these changes, fostering innovation,

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and allowing a natural monopoly to exist only where explicitly necessary to meet grid and customer needs may be enough to ensure the regulatory compact works in the public interest going forward.

"[T]his is a monopoly industry laden with perverse incentives to over-invest in capital on the part of the utility. I'm very skeptical of the type of corporate behavior that results from a cost-of-service regulatory monopoly."

> *Travis Kavulla,* President, National Association of Regulatory Utility Commissioners[1]

"I think it's very clear that the reason we're not building the grid of the future that we've seen pictures of a million times is because we have a policy and regulatory structure that has the incentives to rebuild the old system as opposed to build the new system."

> *Richard Kauffman,* Chairman, Energy and Finance for New York, and Chairman of the New York State Energy Research and Development Authority (NYSERDA) [2]

[1] Stephen Lacey, *One of America's Top Utility Regulatory Figures Argues the Republican Case for Distributed Energy*, GREENTECH MEDIA (Oct. 26, 2016), https://perma.cc/BCB6-NBQM.

[2] Saqib Rahim & Peter Behr, *To Kauffman, N.Y. Grid Reform Has to Make Money for Everyone*, E&E NEWS ENERGYWIRE (June 28, 2016), https://perma.cc/R3MP-RX7B.

I. INTRODUCTION

The concept of the regulatory compact has long underpinned regulation of electric utilities.[3] Electric utilities typically enjoy monopolies in their service territory, and governments allow those monopolies on the condition the utility companies submit to government oversight.[4] Rather than try to prevent monopolies, the government allows them but then tries to mitigate anti-competitive behavior through regulation.[5] With the basic premise that regulators make the monopoly as efficient as competition, the regulator is supposed to ensure that the public pays a fair price for service.[6]

The tools traditionally used by regulators to ensure our regulated monopolies were efficient might have been sufficient when we had a simple grid: one where the vertically integrated, regulated utility produced all the power in large centralized plants from fossil fuels, controlled the transmission and distribution lines, owned the relationship with a captive ratepayer, and dealt only with one-way electricity flows from the utility to the customer.[7] But that is not the

[3] Jim Rossi, *The Common Law "Duty to Serve" and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring*, 51 VAND. L. REV. 1233, 1248–51 (1998).

[4] Joseph P. Tomain, *The Past and Future of Electricity Regulation*, 32 ENV'T L. 435, 446 (2002) ("The regulatory compact imposes significant obligations on both the government and on the regulated firm. In exchange for a government-protected monopoly, the utility lets government set its prices through ratemaking.").

[5] Jim Rossi, *Universal Service in Competitive Retail Electric Power Markets: Whither the Duty to Serve?*, 21 ENERGY L. J. 27, 27 (2000) ("While it is allowed to operate as a monopolist, this firm also has certain responsibilities. It submits to price regulation, assumes obligations to extend service to all customers within its geographic service territory, and agrees to continue providing service, once service has commenced.").

[6] Joel B. Eisen, *FERC's Expansive Authority to Transform the Electric Grid*, 49 U.C. DAVIS L. REV. 1783, 1792 (2016) ("The touchstone for regulatory intervention is remedying anti-competitive 'discrimination,' the umbrella term for activities harming customers of regulated firms. Since the 1900s, regulators have consistently viewed discrimination in context, focusing on whether firms' conduct—'practices'—harms customers, rather than enumerating specific prohibited practices."); *id.* at 1808 ("'Undue discrimination,' in an industry of vertically integrated utilities facing no competition, meant unlawful differences in rates, terms, and conditions by individual utilities among their customers."). *See also* Amy Stein, *Distributed Reliability*, 87 U. COLO. L. REV. 887, 901–02 (2016) ("Courts have struggled to find a regulatory balance between efficiency and consumer protection. To reap the benefits of efficiency while still protecting the public, jurisprudence developed that envisioned an implicit 'regulatory compact' between the utility and the state, where utilities were granted an exclusive service area with regulated rates that provide more earnings stability than if they were in a nonregulated market. In exchange, . . . consumers received protection from monopoly pricing.").

[7] "In a vertically integrated model, utilities are responsible for generation, transmission, and distribution of electricity in a specific geographic area." U.S. DEP'T OF ENERGY, UNITED STATES ELECTRICITY INDUSTRY PRIMER 28 (2015), https://perma.cc/68HH-3U3T.

way our electricity grid operates today.[8] The transition away from coal and toward natural gas for electricity generation,[9] new requirements for regional transmission planning and cost allocation,[10] increasing amounts of customer-sited solar generation,[11] the ability of distributed energy resources to bid into wholesale markets,[12] and the rise of storage[13] have all brought the role of incumbent regulated utilities—and the costs which customers incur due to incumbent utility action or inaction—into sharper focus. While the regulatory compact was always questionable in terms of ensuring efficiency and fair prices, it has become even more difficult with recent changes.

Grid infrastructure accounts for much of regulated utilities' expenditures today,[14] and parts of the physical grid are very old.[15] But

[8] Thomas R. Kuhn & David K. Owens, Edison Electric Institute's 2016 Wall Street Briefing, The Promise of Tomorrow: Electric Power Industry Outlook 4 (Feb. 10, 2016), https://perma.cc/FV6T-XTYR.

[9] Natural gas was the single largest source of fuel for electricity production in the United States in 2019, with 38% of electricity produced by burning natural gas. *Electricity in the United States*, U.S. ENERGY INFO. ADMIN., https://perma.cc/JXG9-FUNK (last updated Mar. 20, 2020). Coal accounted for approximately 23%. *Id.* For comparison, coal accounted for around 48% of utility scale generation in 2008, while natural gas accounted for around 21%. U.S. ENERGY INFO. ADMIN, ELECTRIC POWER ANNUAL 2018, Table 3.1.A. (2020), https://perma.cc/JGE9-UCGL. Coal generation facility retirements are expected to continue. Emma Foehringer Merchant, *2018: A Year in Coal*, GREENTECH MEDIA (Dec. 18, 2018), https://perma.cc/5QAD-D6Q6.

[10] FED. ENERGY REGULATORY COMM'N, ORDER NO. 1000—TRANSMISSION PLANNING AND COST ALLOCATION (Apr. 16, 2015), https://perma.cc/AD7Q-JJEH. In addition to changing transmission planning and cost allocation, FERC Order 1000 also mandated reforms to how developers were chosen. It was hoped these changes would spur competition in transmission development, but that has largely not been the case. Herman K. Trabish, *With New Transmission Urgently Needed, FERC Chair Hints at New Order 1000 Proceeding*, UTIL. DIVE (May 31, 2019), https://perma.cc/JQY5-QAED; Jason Marshall, *Time to Open 'Time-Sensitive' Transmission Projects to Order 1000 Competition*, UTIL. DIVE (May 9, 2019), https://perma.cc/E7XF-FTEM.

[11] *See, e.g.*, Julian Spector, *World's Largest Customer-Sited Solar-Storage Plant Planned for Nevada Desert*, GREENTECH MEDIA (July 27, 2020), https://perma.cc/5V9B-S3XQ.

[12] Ted Thomas & Jeff Dennis, *Allowing DERs to Participate in Wholesale Markets Does Not Trample State and Local Authority*, UTIL. DIVE (May 14, 2019), https://perma.cc/FU37-324M; Emma Foehringer Merchant, *Renewables Demand a Revamp of Power Market Rules*, GREENTECH MEDIA (Nov. 19, 2018), https://perma.cc/DW8B-VVSA. For PJM, the organization that dispatches power for all or parts of 13 states, the amount of demand response that cleared grew from 3,305 megawatts (MW) for the capacity auction held in 2017 to 11,126 MW clearing in the capacity auction held in 2018. *Territory Served*, PJM, https://perma.cc/TA7C-YE9Q; Jeff St. John, *Prices Spike in PJM Capacity Auction*, GREENTECH MEDIA (May 23, 2010), https://perma.cc/Y5ZS-V47R.

[13] U.S. energy storage projects increased by 174% from 2013 to 2018. *Energy Storage: Perspectives from California and Europe*, CAL. INDEP. SYS. OPERATOR CORP. 11 (Oct. 2019), https://perma.cc/3QHP-XJGV. The Federal Energy Regulatory Commission is also requiring rule changes to allow for increased storage participation in markets. Jeff St. John, *ISO New England Lays Out Its Energy Storage Market Integration Plans*, GREENTECH MEDIA (Oct. 30, 2018), https://perma.cc/QVA5-LLCF.

[14] *Major Utilities Continue to Increase Spending on U.S. Electric Distribution Systems*, U.S. ENERGY INFO. ADMIN. (July 20, 2018), https://perma.cc/7S4F-WYJZ. Grid infrastruc-

regulators must decide if the amount they spend on grid infrastructure is necessary[16] or if utilities are using capital spending for another purpose—namely, to increase profits. At least some regulators have found that planned utility investments either provide insufficient customer value[17] or that investments being made now are locking in the current way of doing business, which may or may not be in the public interest.[18]

The acknowledgement that vertically integrated regulated utilities may not be efficient—or be operating in the captive customers' best interests—started a regulatory transition more than twenty years ago.[19] As part of that transition, the regulated utility landscape has essentially fractured into two main models in the United States. The first is in states that maintain vertically integrated utilities such that a single company owns generation plants, controls the transmission and distribution poles and wires within its service territory, and acts as the only point of contact for a captive customer base.[20] So, for example, if you live in Chapel Hill, North Carolina, Duke Energy Carolinas generates, transmits, and sells you electricity—no other company is involved in providing your electricity, and Duke Energy Carolinas has a complete monopoly over all aspects of the market.[21] With a typical vertically integrated utility, a residential customer bill only has one line, which lists the amount of power used (in kilowatt hours (kWh)), the rate

ture improvements can include advanced metering initiatives, distribution line upgrades and redundancy to ensure reliability, remote switching capability, additional system analytics for outage detection, and other grid modernization activities and expenditures. *Improving Electric Grid Reliability and Resilience: Lessons Learned from Superstorm Sandy and Other Extreme Events*, GRIDWISE ALL. (June 2013), https://perma.cc/S7TK-BJJV.

15 PG&E has some transmission towers in service that are 108 years old. Robert Walton, *PG&E Knew of Wildfire Risks for Years, WSJ Reports, Citing Company Documents*, UTIL. DIVE (July 11, 2019), https://perma.cc/V4C3-R2PD.

16 Eric Wesoff, *SolarCity on Building and Operating a 21st-Century Power Grid*, GREENTECH MEDIA (Feb. 8, 2016), https://perma.cc/3JH5-DQF7.

17 *See, e.g.*, Robert Walton, *Virginia Rejects Majority of Dominion's $6B Grid Modernization Plan, Smart Meter Rollout*, UTIL. DIVE (Jan. 18, 2019), https://perma.cc/EML2-5LC5 ("Regulators said they agreed with the Consumer Counsel of the Office of Attorney General, which had argued Dominion's plan was 'significantly lacking in detail.' They also sided with environmental groups who testified the plan was not cost-effective and would wind up creating a loss for all customers.").

18 *See, e.g.*, Gavin Bade, *Indiana Regulators Reject Vectren Gas Plant Over Stranded Asset Concerns*, UTIL. DIVE (Apr. 25, 2019), https://perma.cc/X8KZ-FCK3. In that case, regulators found replacing a coal plant with one large gas plant "does not present an outcome which reasonably minimizes the potential risk that customers could sometime in the future be saddled with an uneconomic investment or serve to foster utility and customer flexibility in an environment of rapid technological innovation." *Id.*

19 Eric L. Prentis, *Evidence on U.S. Electricity Prices: Regulated Utility v. Restructured States*, 5 INT'L J. OF ENERGY ECON. & POL'Y 253, 253 (2015).

20 *Id.* at 253, 256.

21 *The Businesses We're In*, DUKE ENERGY, https://perma.cc/manage/create/?folder=4006-107280-107281 (last visited Sept. 2, 2020); *UTILITIES*, TOWN OF CHAPEL HILL, NC, https://perma.cc/W2T4-FG67 (last visited Sept. 2, 2020).

per kWh, and then the total due determined by multiplying those two numbers together.[22]

The second model is in states that have restructured such that the incumbent regulated utility does not actually own the generation plants.[23] Regulators in these states have determined that the actual generation of electricity (as opposed to the transmission of electricity) is not a natural monopoly[24]—and that customers can benefit from having generation-related competition set the price that is paid for the actual electricity. However, even in restructured states, the transmission and distribution—the poles and wires—remain controlled by a regulated monopoly.[25] If you live in Manhattan, for example, the electricity you use may be generated by all sorts of merchant generating units, all of whom are free to set rates at what they think the market will bear.[26] However, the transmission and distribution lines are provided by the Consolidated Edison Company of New York (CECONY)—and CECONY, as a regulated monopoly, remains heavily regulated by the state.[27] Your monthly electricity bill reflects this additional complexity. The amount of electricity used is still listed, and the generation cost is still charged at a per kWh rate.[28] But the customer will also see a separate charge for transmission and distribution service (the monopoly service), plus a service charge for the costs associated with servicing their account

[22] JIM LAZAR & WILSON GONZALEZ, SMART RATE DESIGN FOR A SMART FUTURE, APP. B, B-1–B-2 (2015). Some vertically integrated utilities break out a service fee or other riders, but the transparency around cost due to each main function—generation, transmission and distribution (T&D), retail—is non-existent. *Id.* at B-6.

[23] Prentis, *supra* note 19.

[24] *Id.* "A firm is a natural monopoly if the entire market demand can be served at lower cost by a single firm than by two or more firms." Jim Rossi, *The Common Law "Duty to Serve" and Protection of Consumers in an Age of Competitive Retail Public Utility Restructuring*, 51 VAND. L. REV. 1233, 1264 (1998).

[25] Marshall, *supra* note 10.

[26] Since merchant plants are dispatched in the order based on price, what a specific plant thinks the market will bear will have a direct impact on how often it runs and supplies electricity to the grid. OFFICE OF ENF'T, FED. ENERGY REGULATORY COMM'N, ENERGY PRIMER: A HANDBOOK OF ENERGY MARKET BASICS 48 (2015), https://perma.cc/D52D-JEL6.

[27] *Id.* at 87; *Energy Regulations & Oversights*, CONEDISON, https://perma.cc/XZN8-4Y8A (last visited Sept. 5, 2020) ("Our rates and terms of service are governed by the New York State Public Service Commission, which regulates the state's electric, gas, and steam utilities."). Many regulated utilities—both in vertically integrated and restructured markets—are part of larger holding companies, which can hold both regulated and deregulated business units. Duke Energy controls both Duke Energy Carolinas and Duke Energy Progress, for example, both of which are vertically integrated, regulated business units, plus other generation assets which operate in competitive markets. *The Businesses We're In*, DUKE ENERGY, https://perma.cc/9VNV-C6TQ (last visited Sept. 5, 2020). Consolidated Edison (ConEd) has two regulated business units, CECONY and Orange & Rockland, in addition to merchant generation plants which operate in various markets around the country. *Our Businesses*, CONEDISON, https://perma.cc/7JJK-YATN (last visited Sept. 5, 2020).

[28] *Sample Bill—Residential or Small Business*, CONEDISON, https://perma.cc/ST5L-Y4FG (last visited Sept. 6, 2020).

(generating and sending a bill, processing payment).[29] The customer, in a restructured market, therefore has additional transparency that the customer in a vertically integrated state does not: the consumer can determine what portion of their bill pays for the actual electrons that power their homes and what portion goes toward getting those electrons to them.

When a regulated utility—either a vertically integrated one or one in a restructured market that provides monopoly service—wants to change the rates it charges to its captive ratepayers, it must go before the state regulatory commission in a proceeding called a rate case.[30] Rate case proceedings—in addition to legislative mandates and other regulatory decisions[31]—determine the amount that customers pay in their monthly bills.[32] In vertically integrated states, the rate proceedings wholly determine what customers pay, whereas in restructured states, rate proceedings determine what customers pay for the monopoly part of their service with the market determining the cost of the actual electrons.

As regulators make decisions in rate cases and other proceedings, both in vertically integrated or restructured markets, they are supposed to ensure that the regulated utilities act efficiently and in the public interest.[33] This is a critical question as a "public purpose was the rationale for granting utilities the right to provide uncontested electric service in the first place."[34] The monopoly structure should only persist if regulators can ensure actions taken are in the public interest and that monopoly regulated utilities are as efficient as they would be if they operated within a competitive market.

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[29] *Id.*

[30] *Today in Energy: The Number of Electric Utility Rate Cases Increased in 2018*, U.S. ENERGY INFO. ADMIN. (July 19, 2019), https://perma.cc/XYH6-Z5FA. How often a utility must go before state regulators in a rate case proceeding varies significantly from state to state. The shortest duration is one year, but most are longer. The longest duration without a utility requesting an increase to rate base was Duke Energy in South Carolina, which went for twenty-seven years without a full, formal rate case proceeding. John Downey, *Duke Energy Progress Cuts Proposed S.C. Rate Hike, Compromises on Coal-Ash Costs*, CHARLOTTE BUS. J. (Oct. 21, 2016), https://perma.cc/6A8Y-C8A9 (discussing settlement as a good option "to mitigate the impact of this first general rate increase in 27 years").

[31] JIM LAZAR ET AL., ELECTRIC COST ALLOCATION FOR A NEW ERA: A MANUAL, 16–17, 30–32 (Mark LeBel ed., 2020) (discussing enactment of the federal Public Utilities Regulatory Policy Act and the role of regulators in setting rates). These include new utility rate design, resource allocation, and the regulations that will govern new technologies.

[32] *Major Rate Case Process Overview*, N.Y. DEP'T OF PUB. SERV., https://perma.cc/X2PH-5V9N (last updated Sept. 23, 2011).

[33] Eric Filipink, *Serving the "Public Interest"—Traditional vs Expansive Utility Regulation* 3 (Nat'l Regulatory Research Inst., Working Paper, 2009). The other option, not addressed in this Article, is that, by requiring utilities to be kept whole from a financial standpoint even with the changes that are occurring, regulators are supporting private investors over the public good. This is especially true when looking at the approved return on equity (ROE).

[34] John Baker, *21st Century Public Purpose*, T&DWORLD 20 (May 2016).

Nevertheless, as this Article will demonstrate, there is evidence that the regulatory compact—the fundamental basis for allowing monopoly control of parts of our electricity system—is not working, and regulators are ineffective in ensuring the regulatory compact is fully upheld.[35] That conclusion draws support from three major pieces of evidence—each of which indicate that regulated monopolies are not operating as efficiently as their non-monopolistic counterparts.[36] First, the evidence includes an electricity consumer price index that is rising faster than the consumer price index for all items. Second, consumers are asked to pay for record rates of capital spend. Third, the allowed return on equity rates utilities receive have not varied with underlying debt costs.[37]

Inefficiencies within the regulation of electric monopoly utilities are especially problematic given electricity's centrality to modern life.[38] Electricity usage tends to stay constant, regardless of price, and its high inelasticity means users cannot easily reduce consumption when regulators allow rates to increase.[39] Making matters worse, as noted by Justice Stephen Breyer before he joined the Supreme Court, is the fact that a "monopolist, if unregulated, curtails production in order to raise prices." [40] In other words, "[h]igher prices mean less demand, but the monopolist willingly forgoes sales—to the extent that he can more than compensate for the lost revenue (from fewer sales) by gaining revenue through increased price on the units that are still sold."[41] With ineffective regulation of a necessity of modern life, electric monopolies are actually getting an even better deal: more demand *and* higher prices. Structural changes, technological changes, and our increased dependency on electricity all demand regulatory changes.

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35 *See* discussion *infra* Part II.

36 *See* discussion *infra* Part III.

37 *See* discussion *infra* Part III.A, B.

38 Walter Fischer, *What Impact Does Electricity Have on Life Today?*, ENOTES, https://perma.cc/WV28-4GYN (last visited Oct. 22, 2020) ("Electricity is central to the ability of almost all modern societies to function."). Because of the integration of electricity into modern life, there is a movement to say access to electricity is actually a human right. *See* Mike Hughes, *Why Access to Energy Should Be A Basic Human Right*, FORBES (Dec. 10, 2018), https://perma.cc/ED9R-TBWA. *See also* Stephen Tully, *The Human Right to Access Electricity*, ELECTRICITY J., Apr. 2006, at 30, 31, https://perma.cc/3W6J-KFT3 (discussing the recognition of electricity as a human right at both an international and national level).

39 *See, e.g.*, MARK A. BERNSTEIN & JAMES GRIFFIN, REGIONAL DIFFERENCES IN THE PRICE-ELASTICITY OF DEMAND FOR ENERGY xiii, 8 (2005); PAUL J. BURKE & ASHANI ABAYASEKARA, CTR. FOR APPLIED MACROECONOMIC ANALYSIS, THE PRICE ELASTICITY OF ELECTRICITY DEMAND IN THE UNITED STATES: A THREE-DIMENSIONAL ANALYSIS 1 (2017) ("employ[ing] a dataset of three dimensions—state, sector, and year—to estimate the short- and long-run price elasticities of state-level electricity demand in the United States . . . [w]e conclude that state-level electricity demand is very price inelastic in the short run, with a same-year elasticity of -0.1").

40 STEPHEN BREYER, REGULATION AND ITS REFORM 15 (1982).

41 *Id.* at 15–16.

While innovations from the private sector have been utilized within other regulatory spheres, monopoly utility regulation has, to date, remained relatively uninformed by the activities and initiatives of private actors.[42] Regulators should, therefore, look elsewhere for tools to help with effective implementation of the regulatory compact. In order to do so, however, they must first come to terms with the sources of their regulatory ineffectiveness: they need to understand, in other words, why they have thus far struggled to ensure efficiency. This Article posits that the fundamental issue is information asymmetry: simply put, fully regulated, monopolistic cost-of-service utilities are not providing enough information to enable meaningful regulation and oversight. Only by solving that problem will regulators be able to effectively enforce the regulatory compact and ensure utilities act in the public interest.

Returning to the basic premise that the purpose of monopoly regulation is to generate the sort of results that would be obtained within a competitive marketplace,[43] one option for insight on the information asymmetry problem would be to look to actually competitive markets as a whole. However, it turns out that similar informational challenges have arisen across industries, and general investors have similar challenges around information asymmetry as utility regulators.[44] Private equity managers, on the other hand, have solved these challenges.

Indeed, when one considers the position of a regulator vis-à-vis a regulated monopoly and that of a private equity manager vis-à-vis a portfolio company, one notices several important similarities: both control the ability to deploy capital, and both determine the expected profit (rate of return on equity) on that capital. Private equity managers tend to allow management to continue making day-to-day decisions about the businesses they run, just as utility regulators allow utility

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42 *See* Leslie K. McAllister, *Harnessing Private Regulation*, 3 MICH. J. ENV'T & ADMIN. L. 291, 293, 295–96, 300 (2014) (discussing private actors making, implementing, and enforcing rules, which then can be harnessed by federal agencies to provide for the public good). The term is used differently in this piece, focusing on the monetary incentives and governance inherent in private (non-public) firms, and how these may be used to further the regulatory compact.

43 I acknowledge there may be policy reasons that would warrant inefficient use of resources on the part of utilities—the subsidization of energy use by low-income households, for example. However, those decisions should be made by the regulators, not the utility. This Article focuses on what regulators can do, which will enable them to act in the public interest as they define it.

44 *See, e.g.*, Ronnie Cohen & Shannon O'Byrne, *Burning Down the House: Law, Emotion, and the Subprime Mortgage Crisis*, 45 REAL PROP. TR. & EST. L.J. 677, 711, 715 (2011) (noting the problem of information asymmetry within the mortgage industry); Shmuel I. Becher, *A "Fair Contracts" Approval Mechanism: Reconciling Consumer Contracts and Conventional Contract Law*, 42 U. MICH. J. L. REFORM 747, 747–48 (2009) (discussing the problem of information in the context of consumer contracts—a common issue that transcends industries).

managers to oversee the detailed aspects of their operations.[45] At the same time, and in contrast to utility regulators, private equity managers do not have to contend with information asymmetry and confidentiality, both of which hamper utility regulators.[46] The question thus arises whether private equity's efforts in confronting informational difficulties could be similarly utilized within the regulatory sphere.

The answer is yes, or so this Article will contend. Tools used by private equity could prove helpful for regulators looking to decrease the current impact of information asymmetry and confidentiality on regulated utility proceedings. Specifically, regulators should adopt two key tools that are commonly used by private equity companies: zero based planning (ZBP) and complete transparency.[47] ZBP, a budgeting process that starts from zero, has the potential to reduce costs; requires the explicit acknowledgment and vetting of all assumptions; and specifically disallows automatic, incremental increases. The use of ZBP requires the justification of every dollar spent, furthering the goal of complete transparency and inviting a conversation around what the future state of our electricity system should be. Adopting these tools would represent a fundamental change to the current regulatory framework. While this would be a radical departure from current regulatory proceedings, it is necessary if the regulatory compact is to survive in a water- and carbon-constrained world.

In order to explore these topics further, this Article first describes the idea of the regulatory compact in greater detail. Having done so, the Article highlights evidence indicating that the objectives of the regulatory compact are not being met and therefore that the regulatory compact is currently ineffective, with consumers subject to ever-higher electricity rates charged by their regulated monopoly electric utilities. After exploring how information asymmetry is one likely reason the regulatory compact is ineffective during this time of transition in the electricity markets, the Article then demonstrates how private equity deals with a similar set of informational challenges, focusing in particular on ZBP and complete transparency. The Article concludes by considering the ways in which regulatory actors might put similar tools to use. At a minimum, the requirements of ZBP and transparency will enable both intervenors and non-traditional market participants to innovate and ensure a more cost-effective energy transition. Adoption of

45 *See generally* HARRY CENDROWSKI ET AL., PRIVATE EQUITY: HISTORY, GOVERNANCE, AND OPERATIONS 20 (John Wiley & Sons, Inc. eds., 2nd ed. 2012) (commenting on private equity management practice); Denise Brown, *Public Utilities Director Job Description*, HOUS. CHRON., https://perma.cc/V9H9-NYJZ (last visited Sept. 9, 2020) (describing the career of a utility manager or public utilities director).

46 *See* Jeffrey T. Macher et al., *Regulator Heterogeneity and Endogenous Efforts to Close the Information Asymmetry Gap*, 54 J.L. & ECON. 25, 25–29 (2011) (analyzing ways that regulators seek to close information asymmetry gaps).

47 While ZBP has not been adopted exclusively by businesses controlled by private equity firms, private equity firms are among the most outspoken in it use. *See* discussion *infra* Part V.A.

these changes, fostering innovation, and allowing a natural monopoly to exist only where explicitly necessary to meet grid and customer needs, may be enough to ensure the regulatory compact works in the public interest going forward.

II. THE REGULATORY COMPACT

In order to understand the current framework governing regulated utilities, it is necessary to understand the regulatory compact. The regulatory compact provides the fundamental basis for utility regulation.[48] This Part discusses the history of the regulatory compact, the formation of public utility commissions at the state level, and how that regulation and the complete monopoly of electric utilities have changed with the passage of federal laws and the introduction of limited competition.

In general, the regulatory compact refers to a theoretical agreement between the utilities and the state.[49] The duty of public utilities to service consumers can be traced back to old English common law, which recognized that monopolies granted by the King came with certain obligations.[50] As was the case with those early monopolies, utilities subject to the regulatory compact understand that, in exchange for the privilege of exclusive access to a geographic market's customer base, they too must agree to substantial regulation by the state.[51] Such regulation is designed to ensure the utility is prudently investing its revenues to provide the best and most efficient service possible for the consumers.[52] More specifically, the utility is allowed to earn a fair rate

[48] PacifiCorp v. Pub. Serv. Comm'n, 103 P.3d 862, 871 (Wyo. 2004). I should note at the outset that there is disagreement about what exactly the regulatory compact is and whether it exists at all. *See What "Regulatory Compact"?*, SCOTT HEMPLING L. (Mar. 2015), https://perma.cc/7FMG-VYLP. This Part provides the consensus view.

[49] *PacificCorp*, 103 P.3d at 871. While there is discussion about whether utilities should be returned to state control, for the purposes of this Article, I am assuming the current ownership structure of utilities will continue. For a recent proposal to create a public power authority and dissolve two investor-owned utilities, see Tux Turkel, *Power Companies and Their Critics Clash Over Idea of Consumer-Owned Utility*, PORTLAND PRESS HERALD (May 14, 2019), https://perma.cc/T9AP-4ZRM.

[50] Rossi, *supra* note 3, at 1244. One analogy scholars often use to trace modern public utilities is medieval mills. *Id.* Without access to a mill, inhabitants of a medieval village were without flour, an important good. The construction of a mill had to be financed by the lord, who needed proper incentive to invest capital in such a project. *See* H.S. BENNETT, F.B.A., LIFE ON THE ENGLISH MANOR: A STUDY OF PEASANT CONDITIONS 130–31 (1937). The feudal law of mills arose from two primary factors: the necessity of access to a mill for local inhabitants; and that the construction of a mill was a relatively large investment to finance. Rossi, *supra* note 3, at 1244–45.

[51] *See* Rossi, *supra* note 3, at 1244.

[52] *See id.*

of return on its rate base; for example, the amount of capital the utility's owners and/or shareholders have invested.[53]

Two distinct periods characterize American regulatory law.[54] The first, lasting from the 1870s until around 1900, featured direct judicial intervention in regulating public utility monopoly franchises.[55] The second era began at the beginning of the twentieth century and was dominated by the establishment of new regulatory commissions.[56] As the twentieth century progressed, judicial doctrines were replaced by statutes and administrative regulations.[57]

In 1876, in *Munn v. Illinois*,[58] the Supreme Court laid the foundation of the regulatory compact when it found "that when private property is 'affected with a public interest, it ceases to be *juris privati* only'" and "is subject to public regulation."[59] The Court further ruled that—notwithstanding then-prevailing notions of a constitutionally guaranteed "liberty of contract"—states remained entitled to set "reasonable compensation" in matters that "affect the public interest."[60] Eleven years later, in *Smyth v. Ames*,[61] the Supreme Court noted that "ascertain[ing] the compensation" that a regulated entity is entitled to can be more easily determined by a commission "composed of persons whose special skill, observation and experiences qualifies them" to handle such issues.[62] Such a commission, the Court continued, would "do justice both to the public and to those whose money has been used . . . ."[63] The regulatory compact was essentially born with these decisions.[64]

By the beginning of the 1900s, the establishment of the regulatory compact was well recognized. As Professor William Malone has relayed the point:

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[53] *See id.* at 1268–69. There are differences between return on equity and overall rate of return. *See* Stephen G. Hill, *What is "Roe," and Why Does it Matter in Settling Rates for Mobile Gas?*, AARP 1, 9–11 (Mar. 2013), http://states.aarp.org/wp-content/uploads/2013/03/WHAT-IS-ROE-Steve-Hill.pdf ("The [return on equity] is the allowed return on common equity—the profit allowed the utility. The [overall rate of return] is the weighted average cost of *all* forms of capital used to finance the utility. It includes the cost of debt as well as the cost of common equity.").

[54] Rossi, *supra* note 3, at 1248.

[55] *Id.*

[56] *Id.*

[57] *Id.*

[58] 94 U.S. 113 (1876).

[59] *Id.* at 126, 129–30 (internal citations omitted).

[60] *Id.* at 133–34.

[61] 169 U.S. 466 (1898).

[62] *Id.* at 527.

[63] *Id.*

[64] William S. Scherman & Jason J. Fleischer, *The Environmental Protection Agency and the Clean Power Plan: A Paradigm Shift in Energy Regulation Away from Energy Regulators*, 36 ENERGY L.J. 355, 371 (2015).

> Franchises are based in this country upon contracts between the sovereign power and a private citizen, made upon a valuable consideration for purposes of public benefit as well as for individual advance; and it is said . . . that franchises "contain an implied covenant on the part of the government not to invade the rights vested, and on the part of the grantees to execute the conditions and duties prescribed in the grant.[65]

The idea of a regulatory compact drew additional strength from the creation of the first modern public utility commission in New York.[66] One of the major tasks of this commission was to establish a uniform system of accounting, designed to protect ratepayers from excessive charges and to protect investors from irresponsible financial practices.[67] The commission thus aimed to effectively regulate private utilities in such a way as to increase both consumer and investor confidence—while at the same time allowing the monopolistic conditions to persist.[68] Other jurisdictions adopted the New York model in which the main determination made by a public utility commission was whether a utility had invested its capital into the system prudently.[69]

"From the 1930s until the 1960s, this system worked well and provided abundant, low-cost power to millions of Americans."[70] However, "the Arab Oil Embargo and energy crisis in the 1970s resulted in skyrocketing energy prices and legislative action."[71] "The Carter Administration passed several new laws, collectively known as the National Energy Act of 1978."[72] Among these new laws was the Public Utility Regulatory Policies Act (PURPA), which lessened the natural monopoly traditionally enjoyed by utility companies.[73]

PURPA's stated purpose was to reduce U.S. "dependence on foreign oil, to promote alternative energy sources and energy efficiency, and to diversify the electric power industry."[74] Knowing that monopoly-

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65 William Malone, *Municipalities' Right to Full Compensation for Telecommunications Providers' Uses of the Public Rights-of-Way*, 107 DICK. L. REV. 623, 627–28 (2003) (quoting JOSEPH ASBURY JOYCE, A TREATISE ON FRANCHISES: ESPECIALLY THOSE OF PUBLIC SERVICE CORPORATIONS CONTAINING ALSO IN AN APPENDIX THE PUBLIC SERVICE COMMISSIONS LAW OF NEW YORK AND THE PUBLIC UTILITY LAW OF WISCONSIN 12 (1909)).

66 Paul Gioia, *The Prudence Standard: Recent Experience and Future Relevance*, PUB. UTIL. FORT., Apr. 27, 1989, at 11–12.

67 *Id.* at 12.

68 *Id.*

69 *Id.*

70 Trevor D. Stiles, *Regulatory Barriers to Clean Energy*, 41 U. TOL. L. REV. 923, 929 (2010).

71 *Id.* In 1978, the year PURPA was passed, petroleum products accounted for 16.5% of electricity generation. *Powering America: Reevaluating PURPA's Objectives and its Effects on Today's Consumers: Hearing Before the Subcommittee on Energy of the Committee on Energy and Commerce*, 115th Cong. 84 (2017) (testimony of Terry L. Kouba, Vice President, Iowa Operations, Alliant Energy).

72 Stiles, *supra* note 70.

73 *Id.*

74 *Public Utility Regulatory Policy Act (PURPA)*, UNION OF CONCERNED SCIENTISTS, https://perma.cc/5AP9-RWKA (last updated Oct. 26, 2002).

regulated utilities were unlikely to diversify on their own, PURPA made specific changes in the statutory scheme to enable these changes.[75] Under PURPA, regulated utilities were required to purchase excess power generated by small utility companies, known as qualifying facilities (QFs).[76] The existence of QFs created new, largely unregulated utility sources to compete with the existing regulated monopolies.[77] More than the impact of the power created by QFs, which initially was minimal, PURPA created a market that could then be expanded, allowing competition into what had been a solely monopolistic sphere.[78]

Deregulation, especially for electric utilities, accelerated by the 1990s.[79] Some states enacted laws breaking up local electricity monopolies and enabling consumers to seek alternative providers.[80] Even with the first phase of deregulation, barriers to competitive whole utilities remained because, when utilities provided regional services, they favored their own services rather than procuring those services through a competitive process.[81] The Federal Energy Regulatory Commission (FERC) enacted Order Number 888 to remedy this favoritism, requiring that: 1) wholesale transmission be unbundled from generation, and 2) utilities provide nondiscriminatory open access to their transmission lines.[82] However, transmission and distribution remains a regulated monopoly function, and there are no plans to have competition at the distribution level.[83]

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[75] *See* Stiles, *supra* note 70 (discussing how PURPA assisted smaller cogeneration facilities).

[76] *Id.*

[77] *Id.*

[78] For example, while North Carolina is still a traditional vertically integrated utility market, the presence of a standard contract for utility-scale solar projects up to 5 MW has made it so that 60% of QF generation nationwide is sited in North Carolina. Biennial Determination of Avoided Cost Rates for Electric Utility Purchases from Qualifying Facilities—2016, No. E-100, SUB 148, N.C. Util. Comm., 9 (Feb. 21, 2017), https://perma.cc/VG8Y-PLTK.

[79] *See* Stiles, *supra* note 70. Also, some are calling for the revision of PURPA based on the rise of competitive markets. *See generally* UNION OF CONCERNED SCIENTISTS, *supra* note 74.

[80] *See* Stiles, *supra* note 70*; see generally* Rossi, *supra* note 5, at 27–28. On the federal side, the Federal Energy Regulatory Commission ("FERC") began to require public utilities to "unbundle" generation, transmission, and distribution. *See generally* Atl. City Elec. Co. v. Fed. Energy Regulatory Comm'n, 295 F.3d 1 (D.C. Cir. 2002). However, FERC's ability to require change is limited by jurisdictional concerns; it can only require changes by those who provide interstate electricity services or those who voluntarily join regional transmission organizations or power pools which serve multiple states, as electricity regulation has traditionally been within state control. Therefore, if states choose to retain their historical, vertically integrated utilities that have subsidiaries and operate wholly within a given state's boundaries, there is little that the federal government can do to encourage competition.

[81] Pub. Util. Dist. No. 1 of Snohomish Cty., Wash. v. Fed. Energy Regulatory Comm'n, 272 F.3d 607, 610 (D.C. Cir. 2001).

[82] *Atl. City Elec. Co.*, 295 F.3d at 4.

[83] Gioia, *supra* note 66, at 11, 12, 14.

Where full deregulation exists in industries that previously relied on regulated monopolies, such as in the telecommunication industry, the law of regulated utilities has shifted towards a preference for robust competition.[84] "[C]ommand-and-control rules have devolved into a more limited body of duties to interconnect with rivals on a nondiscriminatory basis and to conduct business with customers on an unbundled basis."[85] This introduction to a more open access to existing networks has caused traditional utilities enjoying public monopolies to lose customers and revenue.[86] However, outside of telecommunications, the utility natural monopoly—for electricity, water, and gas service—remains significantly intact.[87] It is also unlikely that these services will move toward full competition due to the necessary distribution infrastructure involved.[88]

"On the surface, at least, there is good reason to suspect that public utilities are not very efficient."[89] Additionally, "there is widespread skepticism that public utility regulatory systems supervise effectively."[90] Traditional utility regulation using the regulatory compact presents three main areas of concern, which could be addressed with adequate regulation. First, the regulatory compact may provide inadequate incentives to control costs.[91] Utilities only receive their return on equity—profit—on what capital is deployed.[92] Second, the traditional regulatory scheme may give utilities a reason to decide not to invest in research and technological advancement that would improve their long-term efficiency.[93] In electricity, efficiency on the customer side means

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84 *See* Jim Chen, *Standing the Shadows of Giants: The Role of Intergenerational Equity in Telecommunications Reform*, 71 U. COLO. L. REV. 921, 928 (2000). Even in some traditional, vertically integrated markets, some competition does exist. *See* utility scale provisions of HB 589, 2017 Gen. Assemb., (N.C. 2017) (Duke is allowed to compete to develop but cannot develop more than 30%).

85 *See* Chen, *supra* note 84, at 928.

86 *Id.* at 928–29.

87 Stiles, *supra* note 70, at 930. Some claim that the regulatory compact has been undermined by the used and useful theory, the prudent investment theory, and the argument that a utility's recovery of its investment should be limited to the economic value of the asset. Gioia, *supra* note 66, at 14. Supporters of these theories say that these theories encourage efficiency in the utility industries, like competition does in an unregulated market. *Id* at 15. However, these approaches to handling utility investment are inconsistent with the regulatory compact because they "ignore the history and rationale that underlies the compact." *Id.* at 14–15. These theories also arguably ignore the substantial benefits that the public has received and continues to receive under the compact. *Id.* at 15.

88 Where restructured markets exist, they exist for generation, rather than transmission or distribution. Distribution is still a regulated activity for all three in all U.S. states. *See* Nebbia v. New York, 291 U.S. 502, 533–34 (1934). (holding that companies that have a public interest can be regulated by the government).

89 Kurt A. Strasser, *Bonus and Penalty Plans to Improve Public Utility Performance: Lessons From the Cases*, 19 CONN. L. REV. 513, 513 (1987).

90 *Id.* at 514.

91 *See* JAMES C. BONBRIGHT ET AL., PRINCIPLES OF PUBLIC UTILITY RATES 262 (Columbia University Press, 1961).

92 *See id.* at 262–63.

93 BRUCE M. OWEN & RONALD BRAEUTIGAM, THE REGULATION GAME: STRATEGIC USE OF THE ADMINISTRATIVE PROCESS 222 (1978) (discussing specific examples of delayed in-

utilities will sell less of their product, leading to utility opposition to energy efficiency programs designed and mandated by regulators.[94] Third, public utility regulation discourages cost-reducing activity by potentially denying the utility any long-term benefit from it.[95]

If the assumption is that the natural monopolies in regulated utilities should continue to exist, then the role of the regulator should be to enforce the regulatory compact and ensure customers are not harmed by the fact that they are served by a monopoly. There are multiple factors which indicate this may not be happening; that regulators are ineffective; and that concerns around costs, a lack of innovation, and inefficiencies are warranted.

III. EVIDENCE THE REGULATORY COMPACT IS NOT BEING UPHELD, AND THAT REGULATORS ARE INEFFECTIVE

Given the anti-competitive nature of monopolies, regulators are the only protection the public has from unfair and overly burdensome utility prices. As demonstrated previously, there is significant empirical evidence of regulatory capture in electricity rate cases.[96] Despite evidence that increases in public engagement improve regulatory decision making,[97] there is also evidence of a general lack of stakeholder engagement in energy regulatory processes.[98]

novation in the telecommunications industry). The lack of energy efficiency programs in areas of the country controlled by vertically integrated monopoly utilities provides an excellent example of this. Daniel Cusick, *Report Exposes Regional Differences in Utility Efforts*, E&E NEWS GREENWIRE (June 14, 2017), https://perma.cc/3TVP-7X3Y ("[U]tilities in the Southeast are lagging behind in both efficiency offerings and spending.").

94 ALEXANDRA B. KLASS & JOHN K. HARTING, THE LAW OF CLEAN ENERGY: EFFICIENCY AND RENEWABLES 62 (2011).

95 BREYER, *supra* note 40, at 15–20.

96 *See* Heather Payne, *Game Over: Regulatory Capture, Negotiation, and Utility Rate Cases in an Age of Disruption,* 52 U.S.F. L. REV. 75, 76, 80 (2018).

97 Michael Sant'Ambrogio & Glen Staszewski, *Public Engagement in Rulemaking*, REGUL. REV. (June 3, 2019), https://perma.cc/HDU2-J3SV ("Public engagement in rulemaking improves the quality, legitimacy, and accountability of agency decision making.").

98 *See* Heather Payne, *A Long Slog: What a Ten Year Hydroelectric Relicensing Process Demonstrates About Public Participation and Administrative Regulation Theories*, 53 IDAHO L. REV. 41, 50 (2017) (detailing public participation in the Catawba-Wateree hydroelectric relicensing process); Alexis Stabulas, *An Analysis of United States Nuclear Power Plant Decommissioning Policy and the Public Participation Process*, CLARK U. DIGIT. COMMONS, at ii (May 2019), https://perma.cc/W3RB-LSC4 (discussing the current public process for nuclear power plant decommissioning and using the Maine Yankee and Big Rock Point decommissionings to show lack of stakeholder engagement); Gregory L. Porter, *Building a Better Process: Improving Washington State's "Energy Facility Site Evaluation Council" Review Procedures to Better Encourage Public Participation*, 7 WASH. J. ENV'T L. & POL'Y 90, 94–95 (2017) (finding that the current process for siting energy facilities where the applicants are represented by counsel but concerned local groups are not presents challenges to meaningful public participation). This problem is not unique to the United States; scholars have also found that public participation impacts the acceptability of environmental and energy policy and infrastructure in the E.U. LORENZO SQUINTANI &

Additionally, while regulators should serve the public interest (and there is an assumption that this is the case), ample evidence suggests this is not always the case.[99] In California, a recent audit found that energy regulators were open to improper influence from utilities.[100] A federal judge found that Montana regulators set PURPA rates low enough to kill off solar projects intentionally, which would otherwise have competed against the incumbent utility.[101] It appears regulators in Kentucky allowed the utility to charge customers for its dues in two groups: one which attempted to influence legislation which would "give utilities an unfair advantage" by decreasing rooftop solar generation and one which spent millions of dollars attempting to repeal environmental regulations, including rules under the Clean Air Act.[102]

GODA PERLAVICIUTE, ACCESS TO PUBLIC PARTICIPATION: UNVEILING THE MISMATCH BETWEEN WHAT LAW PRESCRIBES AND WHAT THE PUBLIC WANTS 1–2 (2019).

[99] *See* Payne, *supra* note 98; Steven P. Croley, *Theories of Regulation: Incorporating the Administrative Process*, 98 COLUM. L. REV. 1, 5 (1998); Mark Seidenfeld, *A Civic Republican Justification for the Bureaucratic State*, 105 HARV. L. REV. 1511, 1519 (1992). It is also not uncommon for state legislators to take jobs as utility commissioners for utilities they used to oversee. Jeffrey Tomich, *Midwest Legislators Find Second Careers as Utility Regulators*, E&E NEWS ENERGYWIRE (Sept. 13, 2016), https://perma.cc/3RX8-K8RA ("[P]olitical ideology provides important context for policy decisions.").

[100] Liam Dillon, *State Audit Details Energy Regulator's Failings; Utility Commission's "Lax Environment" is Blamed for its Avoidance of Rules and Other Improprieties*, L.A. TIMES, Sept. 23, 2016, at B5.

[101] Catherine Morehouse, *Montana Judge Rules PSC Intentionally Set PURPA Rates to Kill Solar Projects*, UTIL. DIVE (Apr. 8, 2019), https://perma.cc/5LUG-ZRYA. These same commissioners were found to have violated the solar company's due process rights and made decisions in the docket "based on bias and policy preferences and in conflict with the recorded evidence." Eric Dietrich, *Citing Newspaper Op-Eds, Judge Finds Montana Utility Regulators Biased Against Solar Development*, BELGRADE NEWS (June 27, 2019), https://perma.cc/EC8Q-DZNQ. A federal judge has now found that the PSC's acceptance of the utility's reasoning was "arbitrary and clearly erroneous." Matt Hoffman, *Judge: NorthWestern Illegally Put Off Renewable Energy Projects, Regulators Didn't Enforce Law*, BILLINGS GAZETTE (Aug. 6, 2019), https://perma.cc/8E6E-MK4Q.

[102] Ryan Van Velzer, *Did Louisville Ratepayers Help Fund Anti-Solar Lobbying?*, 89.3 WFPL (May 1, 2019), https://perma.cc/W5PW-EK9F. The Utility Air Regulatory Group (UARG) wanted to repeal rules related to the "Clean Power Plan, the Mercury and Air Toxics Standard, regional transport, regional haze, and NAAQS/ NAAQS implementation." Zack Colman & Alex Guillén, *Documents Detail Multimillion-Dollar Ties Involving EPA Official, Secretive Industry Group*, POLITICO (Feb. 20, 2019), https://perma.cc/EBP2-SMU8. Incidentally, the vast majority of electricity generation in Kentucky—78% in 2017—came from coal (down from approximately 90% during prior years). Nadja Popovich, *How Does Your State Make Electricity?*, N.Y. TIMES (Dec. 24, 2018), https://perma.cc/F3WV-9RQ9. In addition to climate change, electricity generation with coal as the source is linked to asthma, cancer, heart and lung ailments, mercury (a neurotoxin) poisoning, and other health problems. *Coal and Air Pollution*, UNION OF CONCERNED SCIENTISTS (last updated Dec. 19, 2017), https://perma.cc/T4U7-GCJP. By lobbying through these front groups against federal rules requiring stricter control of mercury and other air pollution, utilities were lobbying for policies which would allow them to harm and kill their customers, using those customers' monies, paid through their electricity rates. UARG has been disbanded due, at least in part, to scrutiny from a congressional investigation. Sean Reilly, *Embattled Trade Group Tied to EPA Air Chief to Dissolve*, E&E NEWS (May 13, 2019), https://perma.cc/R5Q7-NHCT.

Legislators—not state regulators—in Virginia are looking to refund ratepayers "for years of excess spending by utility companies," specifically "nonessential spending like political contributions, advertisements and excessive executive compensation."[103]

Assuming regulatory capture can be resolved and the regulatory compact should remain the fundamental basis for monopoly regulated utility regulation, this Article adds to the existing scholarship by demonstrating with three additional indicators that the regulatory compact may not be working as efficiently as intended: 1) the increase in the Consumer Price Index (CPI) for electricity compared to the CPI for All Items in the recent past, 2) record rates of capital spending by utilities, and 3) return on equity rates which have not varied with underlying debt costs.

The CPI comparison demonstrates a principle which is inherently clear: competitive businesses will attempt to drive cost out of their businesses, thereby decreasing consumer prices and gaining customers, whereas monopolistic businesses have no such incentive. Given that the CPI for electricity is increasing faster than the All Items CPI,[104] the question becomes, why? The next two measures discussed in this Part answer that question: record capital spending by utilities, and the return on equity they earn on that capital, drive electricity bills by increasing the utility's revenue requirement—what they need to recover from ratepayers through electric rates. Even should regulatory capture be resolved, these metrics could still indicate that inefficiencies continued to occur.

After reviewing the evidence around these three measures, the remainder of this Part discusses how customers are (or are not) involved in the choices utilities and utility regulators make on their behalf, customer satisfaction, and customer choice.

A. Comparisons Using the CPI

An initial means of evaluating regulators' efforts at upholding the regulatory compact and requiring efficiency from regulated monopoly utilities is to compare electricity rates with the other components of the

103 Daniel Berti, *Virginia Legislators Seek Refund for Utility Customers*, DAILY PROGRESS (Jan. 14, 2019), https://perma.cc/Q5MW-X8EN. A Clean Virginia report estimated the overcharges at an average of $250 per year and noted that "[e]nergy bills in Virginia have stopped reflecting the fundamental principle that ratepayers should only pay for the underlying cost of their energy and its delivery." *Id.*

104 *Compare Consumer Price Index for All Urban Consumers: Electricity in U.S. City Average (CUSR0000SEHF01)*, FED. RESERVE BANK OF ST. LOUIS, https://perma.cc/FPG8-AC5K (last visited Sept. 7, 2020) (analyzing annual average data collected from 2005–2018, seasonally adjusted, with data indexed to 2005 equaling 100), *with Consumer Price Index for All Urban Consumers: All Items in U.S. City Average (CPIAUCSL)*, FED. RESERVE BANK OF ST. LOUIS, https://perma.cc/VQ8P-EBZ5 (last visited Sept. 7, 2020) (analyzing annual average data collected from 2005–2018, seasonally adjusted, with data indexed to 2005 equaling 100).

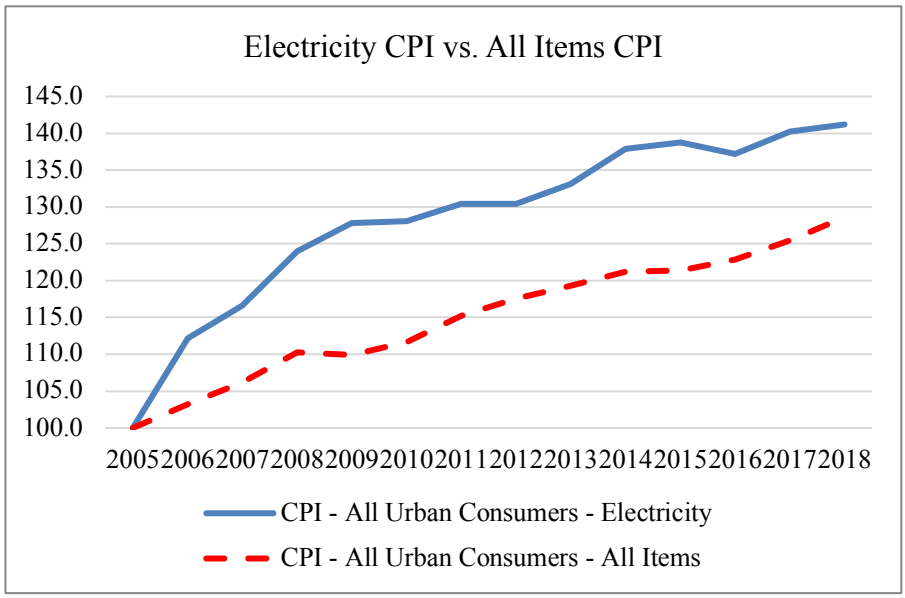
CPI. Effective regulation of electrical utilities should yield an electricity-only CPI that broadly mirrors the All Items CPI, given the All Items CPI tells us broadly about how much prices are increasing within competitive markets and includes some degree of customer choice. In other words, if regulators are managing rates as well as the competitive market would, the respective increase in CPI rates should be similar. If, by contrast, regulators are not efficiently regulating in the public interest, then one would expect the increase in rates for electricity to be higher than the overall CPI.

Setting 2005 as a baseline, the electricity measure in the CPI increases faster than the CPI for All Items for the years 2005–2018[105]:

Year	CPI - All Urban Consumers - Electricity	CPI - All Urban Consumers - All Items
2005	100.0	100.0
2006	112.1	103.2
2007	116.6	106.2
2008	124.0	110.2
2009	127.8	109.9
2010	128.0	111.7
2011	130.5	115.2
2012	130.4	117.6
2013	133.1	119.3
2014	137.9	121.2
2015	138.7	121.4
2016	137.2	122.9
2017	140.2	125.5
2018	141.2	128.6

105 *See Consumer Price Index for All Urban Consumers: Electricity in U.S. City Average*, *supra* note 104; *Consumer Price Index for All Urban Consumers: All Items in U.S. City Average*, *supra* note 104. This table was developed from data available from the Federal Reserve Bank of St. Louis. The data sets were Consumer Price Index for All Urban Consumers: Electricity in U.S. City Average and Consumer Price Index for All Urban Consumers: All Items in U.S. City Average. The data was then averaged annually, seasonally adjusted, and indexed to 2005, equaling 100.

Table 1: CPI[106]



As seen in Table 1 and the graph which shows the same data, the cost of electricity increased almost 39% between 2005 and 2015, whereas all items in the CPI only increased approximately 21%.

As electricity grew at a higher rate, other measures had to decrease even more slowly to obtain the All Items CPI rate because electricity is included in the All Items CPI. Therefore, where consumer goods were procured by the public in a competitive environment, as all goods included in the CPI besides electricity are,[107] the increase in costs were substantially lower when compared with electricity, which was procured from a monopoly during the same time frame.

There is a simple reason why the electricity CPI is higher than the All Items CPI: record capital spending and allowed return on equity rates, which have not varied with underlying debt costs. This ever-increasing capital spend by utilities is especially interesting as economic

106 *Supra* notes 104–105 and accompanying text.

107 The All Items CPI is the average of all basic indexes, which include "food and beverages, housing, apparel, transportation, medical care, recreation, education and communication, and other goods and services." *Consumer Price Index Frequently Asked Questions*, U.S. BUREAU OF LABOR STATISTICS, https://perma.cc/49AZ-NUA8 (last updated Mar. 25, 2020) (listing the types of goods and services covered by the CPI); U.S. BUREAU OF LABOR STATISTICS, HANDBOOK OF METHODS, CH. 17. THE CONSUMER PRICE INDEX 3, https://perma.cc/JYG3-ELHV (last updated Feb. 14, 2018) (explaining that "[t]he U.S. city average All Items CPI is an average of all basic indexes.").

growth has become decoupled from electricity load growth.[108] While the U.S. economy has grown 10% since 2007, energy consumption has fallen by 2.4%, and this trend is continuing; in 2016, overall energy consumption fell by 0.2%, while gross domestic product (GDP) grew by 1.6%.[109] Residential electricity consumption, which historically grew at an average rate of 4% per year, peaked before 2012 and has either declined or remained flat each year since.[110] Utilities are no longer able to increase earnings for investors through increasing electric load. Therefore, while GDP decoupling would suggest that electricity rates should not be increasing as fast as inflation, the opposite is occurring as utilities are turning to capital spend to make up the difference in revenue they would have expected from increasing load.

B. Utility Capital Spend and Allowed Return on Equity

First, it is necessary to understand how utilities make a profit—and why capital spend is so critical to that profit. Rate case proceedings start with the utility's overall revenue requirement, *R*, commonly described using the straightforward formula $R = B \times r + O$, where *R* is the utility's revenue requirement, *B* is the utility's rate base, *r* is the rate of return or cost of capital, and *O* is operating and maintenance expenses.[111]

Given the formula used, utilities have every incentive to make their capital expenditures as high as possible. Capital spending by utilities is a basic necessity for their profits to continue. Capital spending, and the allowed return utilities receive on that capital, drive the revenue

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108 Katherine Tweed, *U.S. Power Costs Falling with Low-Carbon Energy: 'We've Entered a New Era'*, GREENTECH MEDIA (Feb. 8, 2016), https://perma.cc/CRC2-F74K.

109 Julia Pyper, *The 'New Normal' in America: Renewables Boom, Emissions Plunge and Consumers Save More Than Ever*, GREENTECH MEDIA (Feb. 8, 2017), https://perma.cc/PCP3-6G3V.

110 Lucas Davis, *Evidence of a Decline in Electricity Use by U.S. Households*, ENERGY INST. AT HAAS (May 8, 2017), https://perma.cc/7G2N-J69D.

111 Regulators use this formula when implementing cost-of-service principles. JOEL B. EISEN ET AL., ENERGY ECONOMICS AND THE ENVIRONMENT 456–57 (Robert C. Clark et al. eds., 4th ed. 2015). The rate base is the total capital investment in plant and other assets; *r* is variable but set by regulators to compensate investors for the use of their capital in the business. *Id.* While this Article will not specifically discuss utility operations and maintenance spending, similar to regulated utility capital spend, a utility can often obtain full recovery (reimbursement) for all operations and maintenance activities through the ratemaking and regulatory process, leading to little or no incentive to reduce costs. Utility spend on O&M measures have also been increasing, and this spending is not decreasing to what would be considered normal levels—in 2018, the U.S. Energy Information Administration noted that O&M "expenses have increased as electric distribution systems experience stress from several factors, including more customers, variable generation, and the effects of storms, wildfires, and flooding." *Major Utilities Continue to Increase Spending on U.S. Electric Distribution Systems*, U.S. ENERGY INFO. ADMIN. (July 20, 2018), https://perma.cc/QG96-ZN7F. With climate change, storms, wildfires, and flooding are going to become more frequent and catastrophic—rather than less—which would seem to indicate higher O&M spending would continue into the future, potentially with a higher rate of increase than previously.

requirement or how much a utility recoups from ratepayers in their bills.[112] At a high level, the revenue requirement is supposed to capture how much revenue a firm needs to recover in order to remain in business into the future, which is what utility regulators try to determine.[113]

The revenue requirement, therefore, is how much the utility needs to cover both its fixed and variable costs, plus the cost of capital including a profit for investors. Once the revenue requirement is known, this can be spread across rate classes and specific rates (which determine what each customer pays in their bill) can be determined until the utility comes back to the regulator in another rate case.[114] Capital is typically recouped after it has been spent—so the utility spends capital needed for the business and then asks regulators to recoup this investment plus a profit.[115] A look at the evidence around capital and return on equity (ROE) recognizes each of these impact the rates regulated monopoly utilities charge their ratepayers, and each provide independent evidence the regulatory compact is not being upheld.

1. Utility Capital Spend

By increasing capital spend, electric utilities add capital into their rate base, and the amount in their rate base (along with the allowed return on equity) is what provides their profit.[116] Increasing capital spend or increasing ROE leads directly to higher earnings.[117]

Given this economic reality, we should expect to see (and do see) a constant increase in utilities' capital spend—and that increase is up to record levels.[118] As of February 2016, the Edison Electric Institute (EEI) expects its members—who control nearly 70% of the U.S. electric market—to spend more than $300 billion over the next three years to enhance the grid and bring on new generation.[119] As noted by Thomas R. Kuhn, President of EEI, in a presentation for Wall Street analysts, "[o]ur industry spent $108.6 billion in total capital expenditures in 2015, . . . which would set a fourth consecutive annual record. This level of

112 Coley Girouard, *How Do Electric Utilities Make Money?*, ADVANCED ENERGY PERSPECTIVES (Apr. 23, 2015), https://perma.cc/8DYP-KQ7K.

113 *Id.*

114 *Id.*

115 *Id.*

116 *Id.*

117 This also leads to the potential for unnecessary investments. Mark A. Jamison, *Rate of Return*: *Regulation*, PUB. UTIL. RES. CTR. U. FLA. 3, https://perma.cc/QL8W-QGPQ (last visited Sept. 6, 2020).

118 Heather Payne, *All of the Above: One Way State Regulatory Frameworks Impact the Utility of the Future*, 8 GEO. WASH. J. ENERGY & ENV'T L. 78, 78 (2017).

119 Kuhn & Owens, *supra* note 8, at 2, 3.

investment is more than twice what it was a decade ago."[120] For 2016, the number rose to $120.8 billion.[121] Capital spending continued to rise, with one analyst indicating expenditures would be up to $131.1 billion for 2018 and to "expect considerable levels of spending to serve as the basis for solid profit expansion for the foreseeable future."[122] Moody's, in a January 2019 briefing, found "that capital spending will exceed historical levels into 2020" for utilities.[123] And, as a recent report stated, "[u]tility capital spending is often projected to decline, but it has actually grown annually since 2009."[124]

Focusing on the profit this spending can mean for utility shareholders, Mr. Kuhn made the point that the electric power industry outperformed the broader market indices for ten years ending in 2015, providing greater shareholder return than the Dow Jones Industrial Average, the S&P 500, or the Nasdaq.[125] This trend continued, with the S&P 500 utilities sector outperforming the S&P 500 Index and the Dow Jones Industrial Average in 2018.[126] And more utilities are seeking rate increases than "at any other time in the previous 35 years. . . ."[127] Even in the pandemic, most utilities "are beating their earnings projections and declaring dividends."[128]

Some utilities, in response to how rate bases are structured and calculated, use unduly capital-intensive technology, reducing capital efficiency.[129] Technology is part of the rate base and therefore increases the value of assets on which shareholders earn returns.[130] One scholar notes:

> Present regulatory processes not only provide little incentive for management to economize on resources, but would seem systematically to encourage the profligate use of certain resources. Where returns are allowed on all capital in the rate base—that is, all capital that is considered to be a functional part of the utility plant—there is a

120 *Id.* at 2. As Kuhn stated, "[I]nvestor-owned electric utilities are investing more than $20 billion per year in the distribution grid alone." *Id.* at 4.

121 Thomas R. Kuhn, *Delivering America's Energy Future*, EDISON ELEC. INST. (Feb. 8, 2017), https://perma.cc/6W59-3BMM.

122 Dan Lowrey & Jason Lehmann, *Energy: Utility Capital Spending Forecasts For 2018, 2019 Surge*, S&P GLOB. MKT. INTELL. (May 17, 2018), https://perma.cc/64AU-XTE9.

123 William Atkinson, *Electric Utility Capital Spending Surprisingly Strong*, ELEC. CONTRACTOR (Jan. 2019), https://perma.cc/6HAS-V252.

124 Sonal Patel, *Increasingly Debt-Laden, Regulated Utility Sector Outlook Veers from 'Stable' to 'Negative'*, POWER (Jun. 20, 2018) https://perma.cc/739R-Q4RF.

125 Kuhn & Owens, *supra* note 8, at 2.

126 Philip Van Doorn, *Utility Stocks Have Beaten the S&P 500 in Two Months of Turbulence and in the Long Run*, MARKETWATCH (Dec. 1, 2018), https://perma.cc/LTS7-7C6U.

127 Rod Walton, *Nearly 80 U.S. Utilities Sought Rate Increases in 2018*, POWERGRID INT'L (July 22, 2019), https://perma.cc/U6MY-E2AA.

128 Frances Koncilja, *Utilities Response to the Pandemic—Heads—Shareholders Win; Tails, Consumers Lose*, UTIL. DIVE (Aug. 24, 2020), https://perma.cc/UQE6-ZHTX.

129 Susan D. Fendell, *Public Ownership of Public Utilities: Have Stockholders Outlived Their Useful Economic Lives?*, 43 OHIO ST. L.J. 821, 829 (1982).

130 *Id.*

> temptation for management to inflate the capital base. Capital-saving innovation would be shunned in favor of capital-using innovation.[131]

An example of the impact of regulation is utilities' preference for nuclear technology, which is expensive and increases the rate base, thereby increasing utility profits.[132] The two new nuclear plants being constructed at Vogtle, for example, will likely end up costing between $27 billion and $28 billion.[133] Georgia Power's 45.7% share, therefore, will end up costing around $12 billion.[134] A significant portion of that capital will then be added to the rate base—and will provide significant profit to shareholders. Generation plants with similar output—a total of around two gigawatts—but different technology would require significantly less capital.[135] Choice of technology is frequently dependent on how the technology will affect the rate base, and not how technology will impact the capital efficiency of utilities.[136] As utilities only obtain their return on equity on deployed capital, any cost-reduction in capital

131 Thomas W. Gies, *The Need for New Concepts in Public Utility Regulation, in* UTILITY REGULATION, NEW DIRECTIONS IN THEORY AND PRACTICE 88, 97 (William G. Shepherd & Thomas G. Gies eds., 1966).

132 Fendell, *supra* note 129, at 829–30. *See also* Kristi E. Swartz, *Critics Train Their Sights on Vogtle's Future*, E&E NEWS ENERGYWIRE (Aug. 2, 2017), https://perma.cc/9PNQ-WN3Z ("[I]n tightly regulated utility markets, customers likely are on the hook for huge capital investments even if projects aren't finished. And for large, highly complicated construction projects like nuclear, utilities can reap big profits for making major investments.").

133 Matt Kempner, *After Wrangling Over Georgia Nuclear Plant, Cost Concerns Remain*, ATLANTA J. CONST. (Oct. 1, 2018), https://perma.cc/P8FA-V6L3.

134 *Southern Co. Says Vogtle Costs to Exceed $25B*, ATLANTA J. CONSTITUTION (Aug. 4, 2017), https://perma.cc/79Z9-7W64.

135 Georgia Power has argued that the nuclear plants provide other benefits, including fuel diversity, and economic impacts. Kristi E. Swartz, *'Improbable Set of Circumstances' Blindsided Southern*, E&E NEWS (May 22, 2017), https://perma.cc/HS3N-CRMW. For levelized cost of energy comparisons demonstrating that other technologies would have been far cheaper, see U.S. ENERGY INFO. ADMIN., LEVELIZED COST AND LEVELIZED AVOIDED COST OF NEW GENERATION RESOURCES IN THE ANNUAL ENERGY OUTLOOK 2019, at 8 (2019) (noting the levelized cost of nuclear power is 77.5, while geothermal is 38.3, onshore wind is 49.8, solar PV is 45.7, and advanced combined cycle gas turbine is 41.2. Even advanced combined cycle gas turbines with carbon capture and storage is cheaper than nuclear at 67.5). And those numbers for solar might be high—the Los Angeles Department of Water and Power received a globally-low bid for solar plus storage, leading to continued decreases for dispatchable solar power. Catherine Morehouse, *Los Angeles Solicits Record Solar + Storage Deal at 1.997/1.3-Cents Kwh*, UTIL. DIVE (July 2, 2019), https://perma.cc/8SAJ-V48K.

136 Fendell, *supra* note 129, at 830. There is an argument that regulatory lag creates an incentive for more efficient utility performance. JAMES C. BONBRIGHT, PRINCIPLES OF PUBLIC UTILITY RATES 53–54 (Columbia University Press, 1961). However, regulatory lag has been decreasing, undermining this argument. EDISON ELEC. INST., RATE REVIEW SUMMARY: Q2 2018 REGULATORY & FINANCIAL UPDATE 1 (2018), https://perma.cc/LDY3-UVXB ("Regulatory lag, at 7.7 months, fell temporarily below the industry's 10-month average since restructuring."); EDISON ELEC. INST., RATE REVIEW SUMMARY: Q4 2018 REGULATORY & FINANCIAL UPDATE 1 (2018), https://perma.cc/SY8B-Y6YE ("Regulatory lag, at 8.3 months, was slightly below its 10-month average in recent years.").

spend, including to a different resource mix, directly decreases profits by decreasing the amount of capital in the rate base.[137]

There is still an open question if all this capital spend is necessary or in the public interest or if what is being spent is being spent efficiently.[138] Even if the capital spend is necessary—and some of it may be to transition to the grid of the future—the question is whether it is being spent on the correct projects to make that transition or on projects which will more readily aid monopolies in maintaining their monopoly status rather than those projects which will foster competition, bring private capital into the electricity system, or reduce customer cost by solving potential grid problems another way.[139]

2. Allowed ROE

In addition to capital spend impacting the amount in a regulated utility's rate base, the allowed ROE also impacts utility profits as ROE is the number regulators set to reward investors for putting their capital into the business.[140]

Often, the least efficient firm can receive the same return on equity as the most efficient.[141] Indeed, utilities typically attempt to justify what

[137] Julia Pyper, *Why There's No Such Thing as a Free Market for Electricity*, GREENTECH MEDIA (May 23, 2017), https://perma.cc/6LQ5-A8RB.

[138] One could argue that this increasing level of capital spend is not necessary based on the exceptional reliability of the electric grid. Current statistics report that utilities are able to provide power 99.9 to 99.999% of the time including weather outages. AM. PUB. POWER ASS'N, EVALUATION OF DATA SUBMITTED IN APPA'S 2013 DISTRIBUTION SYSTEM RELIABILITY & OPERATIONS SURVEY 4 (2014), https://perma.cc/9TMM-UD6B (The lower end of reliability corresponds to being without power for approximately 8 hours a year.). The lack of need for capital spend due to reliability concerns is especially true as, with electric demand flat or, in some areas, falling, grid reliability is enhanced. *See also* Jeff St. John, *The Grid Edge's Decoupling Effect, Smart Metering Moves, and Distributed Energy State-by-State*, GREENTECH MEDIA (July 14, 2017), https://perma.cc/GA8X-2YBZ ("[T]he groups say that $2.7 billion of the $4 billion or so SCE wants to spend over the next three years on this effort isn't necessary, for two main reasons. One, the groups say that SCE is overestimating how much distributed solar will be coming onto its system over that time—a proposition it backs up with SEIA/GTM Research data. Second, it doesn't take into account the positive values that could be provided by DERs.").

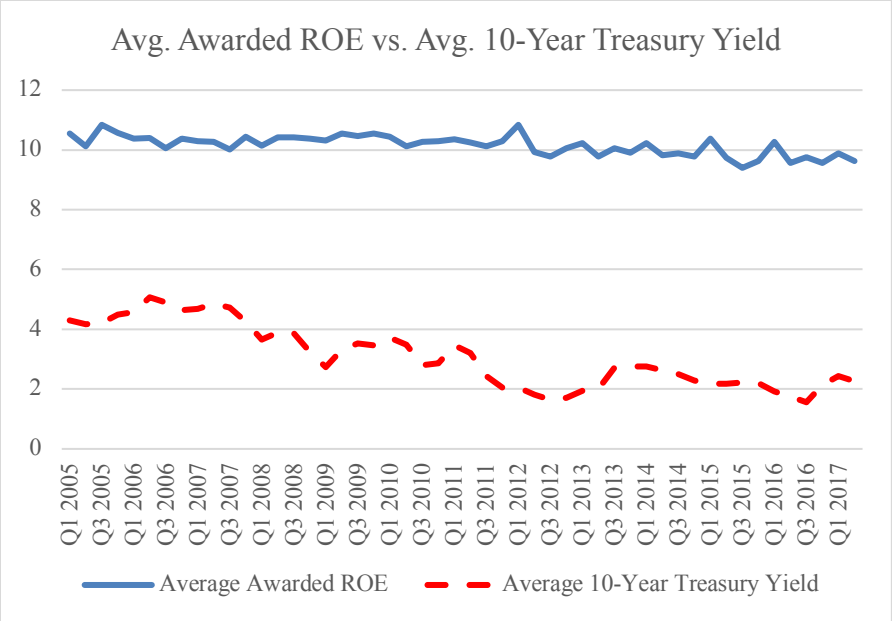
[139] Solar plus storage rather than gas peaking plants is an excellent example of this. Before, a utility might have simply issued an RFP for a gas peaker. However, when the request is for a certain amount of power at a particular time, that requirement can be met through solar plus storage, wind plus storage, or other resource mixes besides a natural gas peaker plant. Gavin Bade, *APS to Install 850 MW Of Storage, 100 MW of Solar in Major Clean Energy Buy*, UTIL. DIVE (Feb. 21, 2019), https://perma.cc/476M-N739. *See also* Emma Foehringer Merchant, *NV Energy Announces 'Hulkingly Big' Solar-Plus-Storage Procurement*, GREENTECH MEDIA (June 25, 2019), https://perma.cc/Y6CV-AHJY ("The days of renewable equals intermittent and a headache for utilities to integrate into their systems is now reversed to where this delivers exactly what the utility wants.").

[140] Girouard, *supra* note 112.

[141] IRVIN BUSSING, PUBLIC UTILITY REGULATION AND THE SO-CALLED SLIDING SCALE 11 (Columbia University Press, 1936). While some PUCs are attempting to change this to a slight degree, it is not significant and not widespread. Bentham Paulos, *How Should We*

their return on equity should be in a new rate case based on what other utilities have received in recent rate cases—without regard to any factor beside that they are all investor-owned electric utilities—and their arguments are accepted by regulators.[142]

In theory, an allowed ROE should be high enough to attract investors—that is, to make a potentially riskier investment in the utility preferable to a less risky investment in a lower yield asset, such as U.S. treasury bonds.[143] Given that basic premise, one might expect regulators to tie the ROE of the regulated monopoly to what investors could obtain in other safe investments. However, this is not the case.



Structure Performance-Based Regulation of Utilities, GREENTECH MEDIA (Mar. 28, 2016), https://perma.cc/4DMD-L84W. It should also be noted that there is variability from state to state, for example, varying from 9.15% to 13.75% in April 2015. Girouard, *supra* note 112.

142 *See, e.g.*, Application of Northern States Power Company for Authority to Increase Rates for Electric Service in Minnesota, No. E002/GR-15-826 Before the Minn. Pub. Util. Comm'n (2015), https://perma.cc/RUP6-FZJ2 (statement of James Coyne, Senior Vice President of Concentric showing what utility NSPM received versus the national average across other electric utilities in various quarters).

143 Regulated monopoly utilities are incredibly safe investments and are therefore often a sizeable part of retirement funds and similar investment vehicles. With captive ratepayers, demand which is largely recession-proof, almost guaranteed profits, and very few instances of insolvency (PG&E notwithstanding), regulated utilities are considered a very stable market choice. Jon Creyts, *Caveat Investor*, ROCKY MOUNTAIN INST. (Apr. 9, 2014), https://perma.cc/4CXE-EGJJ.

As the above chart shows,[144] the average ten-year treasury yield dropped from 4.3% at the beginning of 2005 to 2.26% at the end of the second quarter of 2017—a drop of more than two points in absolute terms, or almost 50%.[145] If the goal was to incent investors to invest in utilities, this significant drop in treasury yields should have made it easier to convince them to invest in utilities. With that increased interest from investors, regulators should have been able to allow a similar drop in ROEs. However, that obviously did not happen: the ROE utilities awarded barely dropped, going from an average of 10.55 in the first quarter of 2005 to 9.63 by the second quarter of 2017, less than a one-point drop in absolute terms and less than 10%.[146] If return is comprised of the risk-free return plus a spread during the period of low interest rates, the utilities actually paid investors a higher spread since ROE stayed constant while the risk-free rate went down.[147] Since 1990, the spread has almost doubled.[148]

These two Parts show that regulated utility capital spending and ROE—two of the main measures that govern a firm's revenue requirement, and therefore what they charge customers—are evidence that regulators are ineffective at upholding the regulatory compact.

3. The Impact from Capital Spend and Allowed ROE

One criticism of the traditional ratemaking process of public utilities is that it fails to provide systematic incentives for promoting efficiency.[149] In a competitive economy, firms are motivated to attract profit and reduce costs. However, as this Part demonstrates, no such systematic incentive exists in many public utility regulation systems.[150] Once a utility achieves a rate increase, the utility has little incentive to adopt cost-saving innovations because the utility will not be able to

144 EDISON ELEC. INST., RATE CASE SUMMARY 3–4 (2018).

145 Some quarters were even lower, with the average ten-year treasury yield at 1.56 in the third quarter of 2016. *Id.*

146 Utility investments did not become riskier during this time—capital invested in a monopoly utility is still backed up by a captive ratebase. Ellen Chang, *How to Invest in Utilities*, U.S. NEWS (Jan. 15, 2020), https://perma.cc/QFB8-TS4D. *See also* Creyts, *supra* note 143 and accompanying text.

147 *See* STEPHEN LUBBEN, CORPORATE FINANCE 91–104 (2017).

148 Nathaniel Bullard, *Americans Are Spending Less of Their Money on Electricity*, BLOOMBERG GREEN (Feb. 20, 2020), https://perma.cc/CQ7T-BR8W ("EEI compares utilities' awarded return on equity to a risk-free rate (in this case, 10-year U.S. Treasuries), and finds that even while utility-requested ROE is declining and the spread between what utilities ask for and regulators approve is tightening, the spread over the risk-free rate is near all-time highs. In 1990, utility-awarded ROE was barely above 400 basis points; right now, it's touching 800 basis points.").

149 Joe S. Poff, *Determination of the Allowable Rate of Return by the Texas Public Utilities Commission*, 57 TEX. L. REV. 289, 300 (1979). *See also* Jamison, *supra* note 117, at 7.

150 Harry Trebing, *Toward an Incentive System of Regulation*, PUB. UTIL. FORT. 22, 26 (Jul. 18, 1963).

retain the resulting profits: the money has already been spent, and the rate case is to obtain recovery of it plus a profit.[151]

Of course, regulated utilities need to spend capital—both to ensure reliability and to transition to the utility of the future. Regulated utilities need to attract investors. The question is whether this money which flows from ratepayers is utilized efficiently and will move the utility into the energy future, a future state which may have a very different role for the regulated monopoly.[152] There is growing concern that the capital utilities claiming is necessary will become stranded—paid for by consumers, but never put to beneficial use or abandoned before the end of its useful life.[153] Additional capital spending is also being used by utilities to "lock in" current ways of doing business, leading to a slower energy transition than would otherwise occur.[154]

Indeed, it seems utilities are not focused on determining that future state and efficiently deploying capital to get there but rather on continuing the system as it is for as long as possible. David Crane, former CEO of NRG Energy, Inc.,[155] has noted that, while fuel costs have decreased, capital investments continue to prop up the grid

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151 Poff, *supra* note 149, at 300–01.

152 Regulators in Virginia have struggled with this question, as well as the assumptions made, during Dominion Energy's most current IRP. The commission eventually approved a revised IRP, but regulators stated that

> we recognize the appropriateness of spending on capital projects when need is proven by factual evidence in actual cases. . . . We do not, however, express approval in this Final Order of the magnitude or specifics of Dominion's future spending plans, the costs of which will significantly impact millions of residential and business customers in the monthly bills they must pay for power.

Robert Walton, *In First, Virginia Regulators Approve Revised Dominion IRP, But Warn About Understated Costs*, UTIL. DIVE (June 28, 2019), https://perma.cc/8TQK-KRT2. One of the issues in the original IRP was that "Dominion's long-term forecasts for energy demand are unrealistically high." Gavin Bade, *In First, Virginia Regulators Reject Dominion Integrated Resource Plan*, UTIL. DIVE (Dec. 10, 2018), https://perma.cc/8TQK-KRT2.

153 *See* ANDY BILICH ET AL., MANAGING THE TRANSITION: PROACTIVE SOLUTIONS FOR STRANDED GAS ASSET RISK IN CALIFORNIA 21–23 (2019), https://perma.cc/RS3P-W9YP ("[T]here are also concerns over intergenerational equity as future ratepayers could be saddled with the costs of investments in the gas system that are no longer used and useful and they receive no benefit from."); Walter R. Hall II, *Securitization and Stranded Cost Recovery*, 25 ENERGY L.J. 173, 174 (2004) (securitization of stranded costs delays ratepayer receipt of benefits and increases ratepayer-born costs).

154 *See* Gregory C. Unruh, *Understanding Carbon Lock-In*, 28 ENERGY POL'Y 817, 822 (2000) (continued capital investments go towards existing projects); Scott Jiusto & Stephen McCauley, *Assessing Sustainability Transition in the U.S. Electrical Power System*, 2 SUSTAINABILITY 551, 555 (2010) (capital flows lead to alliances with energy industries and utilities who support the "entrenched energy regime").

155 David Crane attempted to innovate and lead the market into renewables and distributed energy. Despite good stock returns, it cost him his job. Julia Pyper, *A Conversation with David Crane on Getting Fired from NRG and What's Next for His Energy Plans*, GREENTECH MEDIA (Apr. 29, 2016), https://perma.cc/L6NX-WVAD.

structure of the past, which he describes as "shockingly stupid."[156] Customers, rather than investors, are bearing the cost of transition.[157] And when utility executives were asked whether the electric industry was prepared for changing utility business models, 80.26% answered they were not; investor-owned utilities were the most pessimistic in this regard.[158] Unfortunately, current business models "haven't steered new investments into innovation . . . because innovative products are often cheaper than traditional solutions, reducing a utility's capital spend and thus its regulated return."[159] Even in 2019, utilities continue to think that the greatest obstacle to their business model is what "ratepayers might be asked to shoulder, in the form of stranded assets" and other expenses.[160] According to one industry report, even the "most informed consumers" see "inefficiency and waste" as the biggest issues in utility operations and "also think that utilities are not innovative enough."[161]

Simply, in the context of regulated monopolies, capital spending does not translate into efficient capital spending or capital spent in a way that translates to customer value. The profit paid to investors as a return on equity barely moves even when the underlying cost of debt moves significantly downward. Regulators then do not seem to be requiring utilities to manage capital expenses and do not seem to be minimizing the profits necessary to ensure adequate investment. Along with the consumer price index for electricity rising faster than the consumer price index for all items, there is ample evidence regulators are being ineffective and utilities are not being as efficient as non-monopoly entities.

Were regulated monopoly utilities operating in a competitive business environment, we would not need to focus on regulatory

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156 *Id.* ("But in today's market, Wall Street is rewarding utilities for rate-based investments, not for engaging in competitive markets, said Crane. The rate base, meanwhile, has received hardly any reward. Natural gas prices have plummeted from around $13 per million BTU in June 2009 to $2 per million BTU today, saving utilities billions on resource spending. But regulated utilities haven't turned the precipitous drop in commodity prices into savings for customers; they've predominantly been investing those dollars back into the same poles and wires system they've been operating for decades, said Crane, who has called this strategy 'shockingly stupid.' 'Utilities are the least customer-friendly entities on the Earth, because they're regulated monopolies,' he said. 'If you have to fight for a customer, you're going to do your best to serve your customer.' Now that customers have technology alternatives in the form of rooftop solar, energy storage and home energy management, the conversation is starting to change among both competitive power suppliers and regulated utilities.").

157 PETER KIND, CERES, PATHWAY TO A 21ST CENTURY ELECTRIC UTILITY 5 (Nov. 9, 2015), https://perma.cc/92KM-KM2K.

158 Nicholas Rinaldi, *Are Utilities Prepared for a Next-Gen Power Grid? Survey Says 'Not So Much'*, GREENTECH MEDIA (Jan. 14, 2016), https://perma.cc/4BQ9-6PU2.

159 Pyper, *supra* note 137.

160 UTIL. DIVE, STATE OF THE ELECTRIC UTILITY SURVEY 2019 58 (2019), https://perma.cc/W4VC-CGQZ.

161 Informed consumers were defined as energy consumers who think about their utility bill. Jennifer Runyon, *Informed Utility Customers Want More Renewable Energy—And Utilities Do Too*, POWERGRID INT'L (Oct. 1, 2018), https://perma.cc/K5TK-63WJ.

strategy, as ratepayers (customers) could move to another product—they could vote with their feet. As the next Part discusses, this is not an option at all for those who live in traditionally vertically integrated states, and the option is often illusory even for those who live in restructured states. Customer engagement, therefore, cannot serve as an adequate substitute for regulatory effectiveness.

C. Customer Engagement

A recent study found that consumers spend an average of eight minutes per year interacting with their utility.[162] Additionally, 76% of those who responded to a recent survey indicated that they would consider purchasing electricity from another company if given the choice.[163]

This broad dissatisfaction among customers shows up in multiple measures. While "overall satisfaction is on the rise, electric utility providers continue to struggle to match other industries in customer satisfaction" according to a 2016 J.D. Power survey.[164] Part of the reason for this dissatisfaction is that customer expectations continue to increase, and unlike competitive businesses, utility companies are not investing in a mindset of continuous improvement.[165] Out of a possible score of 1,000 in customer satisfaction, electric utilities score an average of 680.[166] Typical competitive industries which are not generally thought of as having a very favorable public impression all rank higher: auto insurance scores an 811, retail banking a 793, and the airline industry a 726.[167]

It does not help that many utilities are digital laggards. "When benchmarked against other consumer-facing industries, utilities continue to offer one of the worst digital experiences."[168] The utility industry scored 512 (out of 1,000) on a benchmark of digital intelligence; for comparison, the retail sector scored 694.[169] A utility charging an

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162 Katherine Tweed, *Customers Spend 8 Minutes Per Year Interacting Online with Their Utility*, GREENTECH MEDIA (Oct. 27, 2016), https://perma.cc/5KS5-FEFM.

163 *Id.*

164 *Overall Satisfaction Is Up and Monthly Bills Down, Yet Electric Providers Still Lag Behind Other Industries in Customer Satisfaction*, J.D. POWER (July 13, 2016), https://perma.cc/8L9P-QTN4.

165 *Id.*

166 *Id.*

167 *Id.*

168 *Utilities Lag Other Industries in Delivering Digital Experience: Report*, T&D WORLD (Mar. 8, 2019), https://perma.cc/2WPM-MVXU. Fewer than half of the utilities in the study offer a mobile app at all. *Id.* Although—perhaps unsurprisingly—some in the energy arena are attempting to determine how utilities could get paid for engaging more with customers, demonstrating in another way that utilities are not interested in meeting customer expectations because it is the right thing to do. Brian Bowen, *How New Digital Customer Service Metrics Could Boost Utility Earnings*, GTM (Aug. 28, 2017), https://perma.cc/B5PK-AAY8.

169 *Id.*

extra fee if a customer wants to pay online using a one-time bank draft, but happily accepting a check sent in the mail, demonstrates how far utilities have to go before they become part of the digital economy.[170] As one writer succinctly put the choice for utilities on customer satisfaction and the digital experience: "Utilities can either leverage their incumbency to seize this new ground and stay relevant, or fail to do so at their own peril."[171]

Perhaps unsurprisingly, customers are most satisfied when they have "some feeling of control over their energy consumption, and possibly even production."[172] In other words, when they can behave as though electricity is a competitive market.[173]

The increase in customer satisfaction with customer choice might be a reason for regulators to continue with restructuring efforts. However, as this Part demonstrates, that is not a cure. And even with greater customer interest, because these services are provided by monopoly regulated utilities, customer involvement in any rate case or other utility proceeding is severely limited by process. Customers, therefore, cannot be a backstop—for the reasons below, regulators must be the ones to effectively implement the regulatory compact.

1. Customer Choice

As a commentator in the New York Times recently stated:

> Unfortunately, in most markets around the country, electricity is still one of the few areas where we have virtually no choice over our supplier. Imagine you want to buy a G.M. car, but you were told you can buy only a Toyota. You'd be outraged — yet this is how almost all Americans are forced to procure their electricity.[174]

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170 This example is based on the personal experiences of the author with Duke Energy Carolinas. *See also Pay Bill Online: Frequently Asked Questions*, DUKE ENERGY, https://perma.cc/TGD2-CHPX (last visited Sept. 8, 2020) ("Duke Energy works with Speedpay to provide you with the option of using your credit card, debit card or electronic check to make payments. The convenience fee for a business account is $8.50 per payment. . . . These fees cover the processing costs associated with handling credit card and electronic debt payments. No part of the convenience fee goes to Duke Energy. Other companies are able to add the processing costs of these requests to the overall pricing of their products and services. Because Duke Energy is a regulated utility, we are unable to do that. Only customers who choose to use this service will be charged the convenience fee.").

171 Mazi Fayazfar, *Transforming the Customer Experience Delivers Dividends Well Beyond CSAT Scores*, POWERGRID INT'L (July 9, 2018), https://perma.cc/G5XE-KBH2.

172 Robert Walton, *For Top Utilities, Customer Satisfaction Hinges on Empowerment*, UTIL. DIVE (July 22, 2015), https://perma.cc/AL6B-AMHB.

173 Duke Energy continued to struggle with customer satisfaction, with Duke Energy-Carolinas, Duke Energy-Progress and Duke Energy-Florida occupying three of the bottom four slots in the large Southern segment. *Id.*

174 Ben Ho, *The Conservative Case for Solar Subsidies*, N.Y. TIMES (Jan. 5, 2016), https://perma.cc/E9KQ-HVAK.

Stranded costs[175]—and a regulatory monopoly—serve as a barrier to entry for new players.[176] In thirty-four states, consumers must purchase electricity from non-competitive firms.[177] One way to provide a more salient way for customers to indicate how well they think their utility is doing—how happy they are with the choices made on their behalf—would be to allow for more competition. And while some states plus the District of Columbia have electric deregulation which allows residents to choose a retail electric provider,[178] as many as 92% of residential households in "retail choice" states have no ability to choose as they are only served by their incumbent utility.[179]

There can be other drawbacks as well. In states that have adopted residential choice, there is some evidence that, at the retail level, unsophisticated energy consumers pay more than the standard offer from the incumbent utility.[180] This has led to additional consumer protections in some markets.[181] Additionally, all electric consumers have no choice in their transmission and distribution provider—these remain monopolies in all states.[182] Customer choice has the limited ability to increase satisfaction, therefore, experience has shown that it cannot operate as a reliable substitute for effective regulation.

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175 Stranded costs represent a public utility's existing infrastructure investments that will not see a return after substantial changes in regulatory or market conditions. PAULA DOWELL & MATTHEW N. MURRAY, TENN. ADVISORY COMM'N ON INTERGOVERNMENTAL RELATIONS, POTENTIAL IMPACTS OF ELECTRIC UTILITY RESTRUCTURING ON LOCAL GOVERNMENTS IN TENNESSEE 10 (Oct. 2001).

176 Reza Dibadj, *Saving Antitrust*, 75 U. COLO. L. REV. 745, 765 (2004) ("Specifically, a number of distinguished commentators have argued that sunk costs can serve as a potent barrier to entry. In particular, many large-scale infrastructure industries, such as transportation and energy, are noncontestable.").

177 *Current State of Electricity Deregulation in the U.S. (2014)*, ELEC. CHOICE, https://perma.cc/B8YG-MVNQ (last visited Sept. 8, 2020).

178 These include: California (very limited lottery system), Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Texas (for 85% of residents), Virginia (limited for residential consumers), and Washington, D.C. *Map of Deregulated Energy States & Markets (Updated 2018)*, ELEC. CHOICE, *https://perma.cc/ZL6A-WWPS* (last visited Sep. 8, 2020).

179 Tyson Slocum, *The Failure of Electricity Deregulation: History, Status and Needed Reforms*, PUB. CITIZENS ENERGY PROGRAM 1 (March 2007), https://perma.cc/ZD8N-6GFN.

180 Elin Swanson Katz & Andrew W. Minikowski, *Energy Innovation of The Future Cannot Rely on Retail Choice as Its Delivery Vehicle*, UTIL. DIVE (June 10, 2019), https://perma.cc/BU7Z-S5FA.

181 Andy Anderson, *PSC Order May End Mass Market Retail Choice—Lessons for Large C&I Accounts?,* ENERGYWATCH, https://perma.cc/5PP6-U4FD (last visited Sept. 5, 2020) ("Effective 10 days from the order, 'energy service companies (ESCOs) may only enroll mass market customers and renew expiring agreements with existing mass market customers based on contracts that guarantee savings in comparison to what the customer would have paid as a full service utility customer or provide at least 30% renewable electricity.'").

182 *What's the Difference Between a Utility and an Electricity Provider?*, ELEC. PLANS (Jan. 19, 2017), https://perma.cc/6UMP-5533.

2. Consumer Involvement

As one regulator recently noted, a "regulator should not be mistaken: the parties appearing before him are not the public, and the interests of stakeholders together do not constitute the public interest."[183] Citizens have little input into any utility docket process, which is the means by which regulators provide regulatory oversight of utility activities; moreover, because the process is so difficult for the average citizen to understand, the public offers little in the way of oversight for regular, everyday utility matters.[184] Citizens, in short, do not feel empowered regarding their utility choices. The majority of their utilities are monopolies, and the complexities of their operations will often overwhelm the consumer's ability to monitor for and respond to unjustified inefficiencies.

Even where utility dockets affect citizens the most by changing their bills through rate cases, riders and the like, customers typically find out about changes after the fact through a mailer in their monthly bill. Even when regulators attempt to obtain public comment, utilities can actively manipulate the process in their favor. Recently, for example, Entergy hired actors to both attend a public hearing and speak to the New Orleans City Council in support of a new natural gas-fired power plant—notwithstanding the existence of growing public opposition to the project.[185] Unfortunately, this was not an isolated incident.[186]

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183 Pyper, *supra* note 137.

184 While some particularly tenacious and informed citizens may be able to provide input into something like a utility's integrated resource plan, these do not occur annually in most states and still transpire within a process anathema to citizen input. *See, e.g.*, Integrated Resource Plan Otter Tail Power Company, ND PU-13-887 (one filing, which indicates no comments were received). Others show minimal participation: Duke Energy Carolinas IRP, South Carolina 2016-10-E (3 filings); Cheyenne Light Wyoming 13439 (four comments); South Carolina Electric and Gas Company's IRP 2014-9-E (five filings).

185 *Report: Entergy Knew it Was Paying for Actors at Not 1, But 2 Meetings*, WDSU NEWS (Oct. 30, 2018), https://perma.cc/QJA5-LKGZ. The utility paid more than $50,000 for actors to show up in matching orange shirts. Amanda Roberts, *Documents: Entergy Spent More Than $50K For Paid Actors to Support NOE Gas Plant*, FOX (June 18, 2018), https://perma.cc/8MMA-F59H.

186 Other examples of utility astroturfing include forged letters to legislators supporting utility-friendly legislation. Michael Isaac Stein, *The Energy Industry's Secret Campaign to Get Us to Build More Power Plants*, NATION (May 14, 2019), https://perma.cc/7SBV-TVJJ. While not as egregious, National Grid asked customers in New Jersey and New York to lobby on its behalf for approval of a new natural gas pipeline. David Moore, *National Grid Asks Customers to Help it Lobby for a New Fracked Gas Pipeline*, SLUDGE CLIMATE (Jul. 9, 2019), https://perma.cc/HYA4-YY66 ("Ahead of a July 13th deadline for public comment, utility company National Grid is attempting to enlist its customers in petitioning the state of New York for approval of the Northeast Supply Enhancement (NESE) pipeline, which would help the company transport fracked gas from Pennsylvania to the city."). SoCalGas—the largest gas utility in the U.S.—went "so far as to establish and fund a consumer group that pushes for 'balanced energy solutions'" including "establish[ing] 'the organization's messages and themes' and recruit[ing] board members . . . much of SoCalGas's advocacy has been cloaked in C4Bes, the not-for-profit the utility paid to establish." Susie Ca-

Even when properly notified, moreover, consumers tend not to get involved in rate cases or Integrated Resource Plans (IRPs), which determine the sources of electricity they will be served by into the future.[187] In many states, IRPs rarely garner many comments and are unlikely to institute the necessary change to policy.[188] IRPs are, generally speaking, a technical review of utility requirements, but that review and approval affects the generation sources and projects to be completed by the utility over a span of years, sometimes decades.[189] Inaccurate forecasting can cause consumers to pay too much by approving capital spending which is not actually necessary.[190]

Public utility commissions (PUCs), recognizing there will be little public input due to the high degree of specialized knowledge needed, have developed a public staff.[191] In addition to providing information about policy choices in non-contested matters to the commissioners, the public staff is often appointed to be the voice of the public in rate cases

gle, *U.S. Gas Utility Funds 'Front' Consumer Group to Fight Natural Gas Bans*, GUARDIAN (Jul. 26, 2019), https://perma.cc/ULB9-B7PY. The non-profit also "applied to participate in state regulatory proceedings on decarbonization . . . the California Public Utilities Commission's consumer advocate office alleged that SoCalGas not only provided the funding to establish C4Bes, but used ratepayer funds to do it." *Id.* And Calgary-based Enbridge is funding "Minnesotans for Line 3," a supposedly grassroots organization supporting the replacement of an aging tar sands pipeline that needs approval from Minnesota. Mitchell Beer, *'Foreign-Funded Radicals'? Calgary-Based Enbridge Underwrites Pro-Line 3 Advocacy Group in Minnesota*, ENERGY MIX (Jun. 11, 2019), https://perma.cc/9HPK-EB34. Enbridge owns and operates the existing pipeline. *Line 3 Replacement Project*, ENBRIDGE, https://perma.cc/HDK8-6KH9 (last visited Oct. 25, 2020). As one commenter stated, "We are behind [in moving to clean energy] in my opinion because of electric utilities. They have spent a lot of time and effort, whether it's waging these fairly nefarious astroturfing campaigns or working through other kinds of quiet politics behind the scenes at public utility commissions." Stephen Lacey, *The Surprising Public Opinion Trends Behind the Green New Deal*, GREENTECH MEDIA (July 15, 2019), https://perma.cc/7UMY-YJVM.

187 Lincoln L. Davies & Victoria Luman, *Incomplete Integration: Water, Drought, and Electricity Planning in the West*, 31 J. ENV'T L. & LITIG. 167, 191 (2016).

188 2013 IRP docket for the Montana-Dakota Utilities Company, PU-13-887, had a total of two filings (one document or comment). The 2015 IRP docket, PU-15-454, had the same. The 2015 IRP for Kansas City Power & Light, AO-2015-251, had two filings. Even the Green Mountain Power Company in Vermont had three filings in the docket—PSB VT 8397—requesting approval of their 2014 IRP. Additionally, in 2013, four utilities in Indiana filed IRP's (170 IAC 4-7), receiving only ten comments from the public regarding the proposals. In contrast, the Waters of the United States rulemaking by EPA in 2014 garnered over 1 million comments. Rachel Augustine Potter, *More Than Spam? Lobbying the EPA Through Public Comment Campaigns*, BROOKINGS (Nov. 29, 2017), https://perma.cc/KKN5-5DND.

189 Davies & Luman, *supra* note 187, at 191–92. IRPs typically model load forecast and the utility suggests how they intend to meet that load over a period of ten to twenty years. *Id.* at 191.

190 Dominion Energy did not get their IRP approved for the first time ever, partially due to unrealistic load forecasts. Gavin Bade, *In First, Virginia Regulators Reject Dominion Integrated Resource Plan*, UTIL. DIVE (Dec. 10, 2018), https://perma.cc/48G3-E374.

191 *See generally* A HISTORY OF THE PENNSYLVANIA PUBLIC UTILITY COMMISSION, PA. PUB. UTIL. COMM'N (2012), https://perma.cc/722T-66CQ (discussing development of specialized staffs and the appointment of lawyers to represent the public interest).

and other contested utility proceedings, acting as a knowledgeable consumer advocate.[192]

This tacit acknowledgment by PUCs that the public cannot be meaningfully involved may be discouraging, but the process does still allow for public staff and other intervenors to take advantage of the policy windows that these dockets provide. However, and as we have already seen, all the evidence in this Part suggests that these groups—regulators, public staff, and intervenors—are not being effective at upholding the regulatory compact. The question then becomes, why? Aside from regulatory capture, one potential reason is information asymmetry.

IV. INFORMATION ASYMMETRY

As Richard Kauffman, chairman of energy and finance for New York and chairman of the board of the New York State Energy Research and Development Authority (NYSERDA), has noted, "I think it's very clear that the reason we're not building the grid of the future that we've seen pictures of a million times is because we have a policy and regulatory structure that has the incentives to rebuild the old system as opposed to build the new system."[193] Part of the reason regulators keep approving the same types of projects—mostly large, centralized generation—is because they lack the specific information needed to do otherwise.

In the study of regulation, disparities in access to information has been an important theme. Often these information asymmetries are put forward as a justification for regulatory measures such as disclosure obligations and other "information forcing" techniques.[194] Existing scholarship, however, has not thoroughly considered problems of information asymmetry that affect *regulators'* own ability to regulate effectively,[195] and this turns out to be a particularly severe problem within the world of public utility regulation.

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[192] *See, e.g.*, *Composition and Functions*, MISS. PUB. UTIL. STAFF, https://perma.cc/72UP-SYEF (last visited Sept. 24, 2020).

[193] Saqib Rahim & Peter Behr, *To Kauffman, N.Y. Grid Reform Has to Make Money for Everyone*, E&E NEWS ENERGYWIRE (June 28, 2016), https://perma.cc/A4V9-8BAH.

[194] Cary Coglianese et al., *Seeking Truth for Power: Informational Strategy and Regulatory Policymaking*, 89 MINN. L. REV. 277, 277–80 (2004).

[195] *Id.* at 281. Examples of scholarship that focus on this asymmetry include: Wendy E. Wagner, *Commons Ignorance: The Failure of Environmental Law to Produce Needed Information on Health and the Environment*, 53 DUKE L.J. 1619, 1619 (2004) (concerning the dearth of scientific information available to assess the impact of industrial activities on public health and the environment); Paul Leahy, *The End of the Line: Shutting Down Enbridge Line 5, Still a Pipedream?*, 29 GEO. ENV'T L. REV. 799, 799 (2017) (concerning the shortcomings of the pipeline safety laws); Jeffrey T. Macher et al., *Regulator Heterogeneity and Endogenous Efforts to Close the Information Asymmetry Gap*, 54 J.L. & ECON. 25, 26 (2011) (using the FDA as an example and finding "assumptions of the agency paradigm are strained by, if not altogether inconsistent with, the key practical realities of regulation by the FDA"); David Hults, *Environmental Regulation at the Frontier: Government Over-*

Rather than the typical information asymmetries in administrative decision-making processes—asymmetries in which parties are able to provide information to agencies, asymmetries in when outside parties can provide that information, and asymmetries in how agencies apply that information[196]—the asymmetries that plague utility regulation occur when fully regulated, monopoly cost-of-service businesses provide insufficient information to regulators, commission staff, customers, and others as to preclude meaningful comment on the most basic issues.

This information asymmetry can have meaningful and lasting impacts on the decisions that regulators make. Multiple regulatory proceedings have tried to move to the "new"—the grid of the future, with lower carbon intensity, more decentralized generation, and better environmental attributes—but have been unable to do so (or are proceeding more slowly than anticipated) because of a lack of data.[197] One example is the adoption of non-wires alternatives (NWAs), or solutions which solve a distribution-level problem without traditional utility capital spend.[198] Most utilities view NWAs as a threat to their business model, as these solutions are only adopted if they are cheaper than the utility investing capital into the system.[199] However, without that capital spending, the regulated monopoly utility will not increase its rate base, and therefore its profit will drop.[200] Keeping NWAs out of its system is in the best interest, profit-wise, for a regulated monopoly utility.[201] Guarding against releasing any data which could demonstrate where NWAs would be most impactful to the system increases a regulated monopoly utility's chances of keeping these projects from being approved by regulators.[202]

sight of Offshore Oil Drilling North of Alaska, 44 ENV'T L. 761, 794–95 (2014) (discussing inherent limitations in the regulator's institutional capacity to provide effective oversight of offshore oil drilling).

196 Stephanie Tai, *Three Asymmetries of Informed Environmental Decisionmaking*, 78 TEMP. L. REV. 659, 664 (2005).

197 Justin Gerdes, *What Will It Take to Build the Market for Virtual Power Plants?*, GREENTECH MEDIA (June 25, 2018), https://perma.cc/7ZAS-HX8X ("Audrey Lee, vice president of energy services at Sunrun, stressed the importance of data sharing. 'We're at a bit of an impasse,' she said. 'Aggregators don't always have data; utilities have data.' She added that utilities must be willing to share data on where the need is, such as a grid constraint, so that third parties and utilities can come to solutions together.").

198 NON-WIRES ALTERNATIVES: CASE STUDIES FROM LEADING U.S. PROJECTS, E4 THE FUTURE ET AL. 7 n.1 (2018) ("Non-wires alternatives are defined as 'an electricity grid investment or project that uses non-traditional transmission and distribution (T&D) solutions, such as distributed generation (DG), energy storage, energy efficiency (EE), demand response (DR), and grid software and controls, to defer or replace the need for specific equipment upgrades, such as T&D lines or transformers, by reducing load at a substation or circuit level.'").

199 *See id.* at 15 (discussing the need for new incentive structures to motivate utilities to use NWAs).

200 *Id.*

201 *Id.*

202 For example, Hawaii regulators are concerned that "HECO 'may intend to again implement a traditional wires solution without a complete consideration of potential alterna-

A second example of where utilities have used information asymmetries to slow the transition to the new is around distributed energy integration and interconnection agreements.[203] Distributed energy—like residential solar panels—can be highly beneficial to the grid because it adds additional generation without requiring utility capital spending.[204] Instead, private capital—which will never be rate based—is used to procure the generation resources.[205] Distributed energy can also be helpful to the grid if it produces energy during peak times—when the most electricity is being used on the system.[206] If this is the case, then the distributed energy resources are part of a solution. However, distributed energy can threaten the current utility business model, as residents are no longer purchasing all of their electricity from the regulated monopoly utility. Fearful of this outcome, utilities have slowed the interconnection of distributed energy projects and hoarded valuable data concerning the capacity of their distribution lines—basically, not providing information to residential solar installers about which lines can accept more solar without changes and which cannot.[207] More distributed generation could also lead to less need for new power plants, again decreasing the amount of utility capital spend, leading to lower profits than would otherwise have occurred. In other words, distributed energy poses a significant threat to the viability of utilities' existing business models, and utilities have responded by withholding the information necessary to promote otherwise attainable efficiencies.

tives'" and spend the capital for a new substation rather than looking at other solutions. Iulia Gheorghiu, *Hawaii Regulators Question Lack of Non-wires Alternatives in HECO's Integrated Grid Plan*, UTIL. DIVE (Aug. 8, 2019), https://perma.cc/94EB-6PNX. "The PUC criticized HECO for concluding that 'a traditional solution is necessary without the opportunity for market providers to offer an alternate solution.'" *Id.*

203 David Collins, *Solar Energy Customers Denied Access to Grid*, WBALTV11 (May 8, 2014), https://perma.cc/P4AV-ZWVN; Christian Roselund, *Duke Drags its Feet on the Energy Transition*, PV MAG. (June 24, 2019), https://perma.cc/H8ZM-DUCV; John Downey, *North Carolina's Largest Solar Company Takes on Duke Energy Over New Test for Connecting Projects to Grid*, CHARLOTTE BUS. J. (Oct. 3, 2016), 2016 WLNR 30259301; Sara Baldwin, *Montana's Progress on Clean Energy Interconnection. What's Missing and What's Next?*, INTERSTATE RENEWABLE ENERGY COUNCIL (June 19, 2019), https://perma.cc/6LB2-TDBR.

204 *Introduction to Distributed Generation*, DISTRIBUTED GENERATION EDUC. MODULES, https://perma.cc/XSA5-BAKG (last visited Sept. 4, 2020); Julian Spector, *Distributed Energy Still Isn't Valued Properly, Report Finds*, GREENTECH MEDIA (Mar. 11, 2019), https://perma.cc/F2FE-284E.

205 Collins, *supra* note 203; JUSTIN GUNDLACH & BURCIN UNEL, INST. FOR POL'Y INTEGRITY, GETTING THE VALUE OF DISTRIBUTED ENERGY RESOURCES RIGHT 1–2, 11, 33 (2019), https://perma.cc/TU6J-MPYA; *see Solar Integration: Distributed Energy Resources and Microgrids*, DEP'T OF ENERGY, https://perma.cc/W3RB-65F2.

206 *Distributed Generation of Electricity and its Environmental Impacts*, U.S. ENV'T PROT. AGENCY (Mar. 13, 2018), https://perma.cc/5AEK-5M5D; Jacques Leslie, *Utilities Grapple with Rooftop Solar and the New Energy Landscape*, YALE ENV'T 360 (Aug. 31, 2017), https://perma.cc/LD53-7BGE.

207 Leslie, *supra* note 206; Collins, *supra* note 203.

A third example of information-withholding essentially combines the two. If there is a particular part of the grid that is stressed—that needs additional electricity flowing to it—that would usually be solved by the expenditure of additional utility capital for the purpose of upgrading the line.[208] However, if there are enough distributed resources or other NWAs (like solar panels, battery storage, and demand response), then that capital may not need to be spent—leading again, to that capital not being added to rate base and the utility not receiving its profit on what would have been spent had they been allowed to complete the upgrade.

Importantly, in each of these situations, the regulated monopoly utility is in complete control of the information that would indicate when a solution other than spending utility capital and adding that amount to the rate base would be beneficial to consumers. Only with concerted regulatory effort—requiring full disclosure of all pertinent information to the public—can the regulatory compact be upheld.

Given this current state, it is appropriate to determine how other industries with similar challenges approach them—and what utility regulators might be able to apply and, in the process, require utilities to become more efficient.

V. HOW OTHERS RESPONDS TO SIMILAR CHALLENGES – AND WHAT REGULATORS COULD LEARN

If the regulatory compact is supposed to mimic competition, one option would be to look to competitive markets as a whole. General investors have similar challenges around information asymmetry as utility regulators.[209] Private equity managers have solved these challenges.

Private equity management—investors and firms that are not quoted on a public stock exchange and that make investments directly into other companies[210]—essentially operates as a regulator of the

208 *See* Stratford Douglas et al., *Disallowances and Overcapitalization in the U.S. Electric Utility Industry*, 91 FED. RES. BANK ST. LOUIS REV. 23, 26 (2009) ("Overcapitalization can appear in many different guises. . . . They might resist joining efficient power pools.").

209 Indeed, there is some current research that indicates that, within the electricity industry, markets have been as protective of customers as regulators. Michael Giberson & Arthur R. Wardle, *APPA Opinion on Electric Rates Misses Mark, Retail Choice Better for Customers: Academics*, UTIL. DIVE (June 14, 2019), https://perma.cc/W4SJ-UAN5 ("[S]tate regulation is no longer achieving its intended results. In other words, competition is protecting consumers just as well as state regulators.").

210 Private equity can take a stake in either companies which are already private or public companies, thereby removing them from the public domain. Being private—without the necessary SEC disclosures and filings, and shareholder demands that come from being a publicly-traded company—is seen to provide private equity management with greater discretion in management decisions, including the ability to operate at a loss while turning a struggling company around. The lack of investor oversight and focus on quarterly earnings is acknowledged as a benefit for private equity management, enabling those managers to take a longer view of success. BAIN & CO., GLOBAL PRIVATE EQUITY REPORT

businesses it owns, making many decisions much like the ones regulators make on behalf of electric and gas monopolies: how much capital can be spent, what profit margins should look like (equivalent to return on equity), and so forth. Regulators approve capital spend and allowed rate of return on equity to set the price customers are "able" to pay while providing a sufficiently high return to investors of the monopoly utilities. The end goal for the private equity company is a price for the company's goods or services that consumers are willing to pay and a return that investors are willing to seek,[211] ensuring sufficient revenue to stay in business.[212] Essentially, both utility regulators and private equity managers determine how capital ought to be deployed and what the bottom-line profits ought to be.

A further similarity between utilities and private equity involves debt. Many private equity deals are leveraged and have significant debt.[213] "Capital-intensive industries such as utilities have relatively higher" debt-to-equity ratios,[214] and the utility industry has had higher levels of debt since 2008 for reasons such as leveraged mergers and acquisitions, investments in non-regulated businesses, and to infuse equity into operating subsidiaries.[215] Even so, the average debt-to-equity ratio for the utilities sector was 0.68 in 2018, well below the 2.0 considered unfavorable.[216]

2019, at 76 (2019), https://perma.cc/GS2B-Z3BL (describing privatization as allowing workers to "focus first on innovating . . . in a way that was not always possible when striving to meet the quarterly demands of Wall Street" and giving Dell "the freedom to take a long-term view").

211 William Magnuson, *The Public Cost of Private Equity*, 102 MINN. L. REV. 1847, 1848–49 (2018) ("[P]rivate equity firms' corporate-governance structure enables them to manage companies better through (1) creating strong financial incentives for managers to improve company performance metrics; (2) closely and actively monitoring management behavior; and (3) deploying deep industry, capital market, and financial expertise in support of these mechanisms.").

212 Douglas et al., *supra* note 208, at 25 ("The basic model of monopoly regulation posits that regulators aim to reduce the price charged by the monopolist and expand the monopolist's output."); W. KIP VISCUSI ET AL., ECONOMICS OF REGULATION AND ANTITRUST 431 (4th ed. 2005).

213 Ney Grant, *Why Private Equity Uses Debt: The Mechanics of Leverage*, ALL BUS., https://perma.cc/LGP6-B78W (last visited Sept. 8, 2020); BAIN & CO., *supra* note 210, at 9 ; Ben Unglesbee, *Retail and Private Equity: An In-Depth Look at the Risky Relationship*, RETAIL DIVE (Nov. 9, 2018), https://perma.cc/6NWJ-RFDL ("They fuel their buyouts with debt, because it has proven profitable.").

214 J.B. Maverick, *Debt-To-Equity (D/E) Ratios for the Utilities Sector*, INVESTOPEDIA (Feb. 7, 2019), https://perma.cc/B27L-7TU4.

215 Sonal Patel, *Increasingly Debt-Laden, Regulated Utility Sector Outlook Veers from 'Stable' to 'Negative'*, POWER (June 20, 2018), https://perma.cc/99N5-5YTA. This additional debt led Moody's to downgrade the sector from a stable to a negative outlook. *Id.* Notable infusions into operating subsidiaries include Southern Company writing off Mississippi Power expenses for Kemper and First Energy extending credit to its unregulated generation plants. Colby Bermel, *Mississippi Power Receives $1B Equity Infusion from Southern*, S&P GLOB. MKT. INTELLIGENCE (June 30, 2017), https://perma.cc/272K-QR62.

216 J.B. Maverick, *Debt-To-Equity (D/E) Ratios for the Utilities Sector*, INVESTOPEDIA (Feb. 7, 2019), https://perma.cc/R934-HD39.

At the same time, the workforce challenges underlying private equity deals differ from those associated with utility regulation. One of the main concerns around private equity ownership is its potential impact on workers, especially if the business ends up in bankruptcy.[217] Unlike many retail operations where a leveraged buyout has led to mass layoffs[218]—more than 15% of all private equity owned retailers have filed for Chapter 11 since 2002, and many others continue to struggle[219]—utilities have, to some extent, the opposite problem.

> According to a January 2017 assessment by the U.S. Department of Energy, 25% of U.S. employees in electric and natural gas utilities will be ready to retire within 5 years. The U.S. Department of Labor also estimates that up to half of the current energy industry workforce will retire within five to ten years; meanwhile, the average age of industry employees is now over fifty.[220]

Utilities—and their consultants—have been speaking about the aging workforce for most of the last decade, and ready solutions to replace retiring workers have proven elusive.[221]

While private equity deals have largely not impacted regulated monopoly utilities, the one exception was the purchase of TXU by KKR & Co., TPG Capital, and Goldman Sachs Capital Partners in 2007 to form Energy Future Holdings (EFH).[222] EFH maintained control of Oncor, an electric distribution utility in Texas.[223] EFH's business model was based on the assumption that natural gas prices would continue to be high, which would give the coal plants in its fleet an advantage in the market.[224] However, natural gas prices fell due to widespread use of both hydraulic fracturing and directional drilling, leading to EFH's

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217 *See, e.g.*, Lauren Coleman-Lochner & Eliza Ronalds-Hannon, *Senator Rebukes Buy-out Firm Sun Capital on Shopko Severance Pay*, BLOOMBERG L. NEWS (June 20, 2019), https://perma.cc/4T6M-9US6 (quoting Wisconsin Senator Tammy Baldwin's criticism of companies prioritizing executives over workers).

218 Abha Bhattarai, *Private Equity's Role in Retail Has Killed 1.3 Million Jobs, Study Says*, WASH. POST (July 24, 2019), https://perma.cc/4UW8-WF99 ("More than 1.3 million Americans have lost their jobs in the past decade as a result of private equity ownership in retail, according to a report released Wednesday. That includes 600,000 retail workers, as well as 728,000 employees in related industries. Overall, the sector added more than 1 million jobs during that period.").

219 Unglesbee, *supra* note 213.

220 Kevin Stevens, *Gut to Data*, ENERGY CENT. (Nov. 1, 2019), https://perma.cc/4367-3G78.

221 Kennedy Maize, *Trends and Obstacles in the Power Industry Workforce*, POWER (June 30, 2018), https://perma.cc/79HA-XYNW.

222 Beth Jinks & Mark Chediak, *Energy Future Proposes Pre-Packaged Bankruptcy of Some Units*, BLOOMBERG BUS. (Apr. 15, 2013), https://perma.cc/HJ3T-WLN2.

223 Nick Brown & Billy Cheung, *Texas Power Company Energy Future Files for Bankruptcy*, REUTERS (Apr. 29, 2014), https://perma.cc/VX6B-3AV9.

224 Jinks & Chediak, *supra* note 222.

bankruptcy in 2014.[225] A business bankruptcy predicated on not forecasting the fracking revolution, however, was certainly not limited to EFH or businesses owned by private equity.[226]

This Article, then, is not suggesting significantly more investment into regulated utilities by private equity or more private equity ownership of regulated monopolies. However, tools used by private equity could prove helpful for regulators to adopt. Private equity acts as a type of regulator for the businesses it purchases and controls, but continues to let management operate the business, similar to the regulatory structure of utilities.

Specifically, regulators should adopt two key tools: zero-based planning (ZBP) and complete transparency. While this would be a radical departure from current regulatory proceedings, it is necessary if the regulatory compact is to survive in a water- and carbon-constrained world. The tools they use could give regulators—and public staff, intervenors, and the public—more information, leading to better decision-making. As the Sixth Circuit has noted, "common sense tells us that the greater the motivation a corporation has to shield its operations, the greater the public's need to know."[227]

A. Zero-Based Planning

Zero-Based Planning (ZBP), also known as zero-based budgeting, is "a budgeting process that allocates funding based on program efficiency and necessity rather than budget history."[228] In contrast to traditional budgeting, budgets are not connected to the prior year's spending—no item is automatically included in the next budget.[229] Instead, budgeters must review every program and expenditure at the beginning of each budget cycle and justify each line item in order to receive funding.[230] ZBP is best analyzed and explained through its history; the factors that make it successful; and its benefits, challenges, and risks. The list of companies that use ZBP include Coca-Cola Co.,[231] Anheuser-Busch

225 Brown & Cheung, *supra* note 223; *U.S. Oil & Gas Production on the Rise Thanks to Fracking*, INST. FOR ENERGY RES. (Sept. 19, 2014), https://perma.cc/W76N-BQG2.

226 Ansuya Harjani, *Top 10 Bankruptcies in 2011*, CNBC (Dec. 30, 2011), https://perma.cc/AHV3-VWYZ (explaining that after retail, oil and gas companies have been one of the biggest Chapter 11 sectors in recent years).

227 Brown & Williamson Tobacco Corp. v. Fed. Trade Comm'n, 710 F.2d 1165, 1180 (6th Cir. 1983).

228 *Zero-Based Budgeting: Zero or Hero?*, DELOITTE 1 (2015), https://perma.cc/4L46-LZJP.

229 *Id.*

230 *Id.*

231 *Id.* at 3 n.24; *The Coca-Cola Company Announces Actions to Drive Stronger Growth*, BUSINESSWIRE, (Oct. 21, 2014), https://perma.cc/CH7T-63HJ (Coca-Cola plans to cut $3 billion in costs by 2019).

InBev,[232] Mondelez International, Inc.,[233] Alcoa,[234] Boston Scientific,[235] Jarden Corporation,[236] Quiksilver,[237] B&G Foods,[238] Kraft Heinz Co.,[239] Campbell Soup Co.,[240] Valeant Pharmaceuticals International, Inc.,[241] Kellogg Co.,[242] ConAgra Foods, Inc.,[243] Unilever,[244] Tribune Publishing,[245] Pilgrim's Pride Corp.,[246] Burger King,[247] Tim Hortons,[248] and Diageo.[249]

ZBP was first introduced to the public in 1970 through a Harvard Business Review article written by Peter A. Pyhrr.[250] In the 1970s, ZBP was fundamentally about assigning each company activity to a decision "package," reviewing and ranking the packages based on their costs and benefits, and allocating resources accordingly.[251] Today's ZBP is much more advanced than the original concept of the 1970s. It is now a "repeatable process to rigorously review every dollar in the annual budget, manage monthly financial performance, and build a culture of cost management."[252] The annual budgeting process starts from zero and is extremely detailed, structured, and interactive.[253] ZBP can be applied to any type of cost. [254]

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232 *See* Barbara Soderlin, *ConAgra's Strict Zero-based Budgeting Strategy Could Spell Trouble for Omaha Jobs*, WORLD HERALD (Sept. 25, 2015), https://perma.cc/7624-VK8K.

233 *See* Annie Gasparro, *Mondelez CEO Stands by Efforts to Cut Costs*, WALL ST. J. (Aug. 24, 2015), https://perma.cc/C3NJ-393P (Mondelez adopted the practice in 2013 and is on track to gain $1.5 billion in net annual savings by 2018).

234 Matt Fitzpatrick & Kyle Hawke, *The Return of Zero-Base Budgeting*, MCKINSEY & CO. (Aug. 1, 2015), https://perma.cc/EZ3G-HX68.

235 *Id.*

236 *Id.*

237 *Id.*

238 *Id.*

239 David Kesmodel & Annie Gasparro, *Kraft-Heinz Deal Shows Brazilian Buyout Firm's Cost-Cutting Recipe*, WALL ST. J. (Mar. 25, 2015), https://perma.cc/HEG6-KCLR.

240 *Id.*

241 *Id.*

242 *See* Dale Buss, *More CEOs Are Using Zero-Based Budgeting, But Is it Right for Your Firm?*, CHIEF EXEC. (Dec. 4, 2015), https://perma.cc/2MAZ-32F4.

243 Soderlin, *supra* note 232 (ConAgra had more than $375 million in cost savings for the 2015 fiscal year).

244 Mark Ritson, *Mark Ritson: Why Unilever is Right to Adopt Zero-Based Budgeting*, MKTG. WEEK (Jan. 26, 2016), https://perma.cc/2QAE-J9NM.

245 Cynthia Firey Eakin, *Zero-Based Budgeting: Everything Old is New Again*, CONVERSATION (Nov. 23, 2015), https://perma.cc/55EE-J932.

246 Mitch Duckler, *Is Zero-Based Budgeting Right for Your Brand?*, AM. MKTG. ASS'N (July 13, 2015), https://perma.cc/5A3D-6R5V (explaining different companies using ZBP).

247 Shane Skillen, *Zero-Based Budgeting and its Negative Impact on Brand Building*, GREENBOOK (Mar. 29, 2016), https://perma.cc/4RET-BD2E.

248 *Id.*

249 *Id.*

250 Fitzpatrick & Hawke, *supra* note 234.

251 *Id.*

252 *Id.*

253 *See* Shaun Callaghan et al., *Five Myths (and Realities) About Zero-Based Budgeting*, MCKINSEY & CO. (Oct. 1, 2014), https://perma.cc/2Q6T-KFXB.

254 DELOITTE, *supra* note 228, at 1.

ZBP has been called the "secret sauce" for cost reduction.[255] The success of ZBP can be explained through five supporting factors: 1) deeper visibility into cost drivers, 2) a dual-ownership governance model, 3) rigorous processes for planning and monitoring, 4) aligned incentives, and 5) mindset.[256] To put these into practice, first, companies need a laser-focused "understanding of the drivers of costs so that managers can make quicker and improved decisions on how to control them."[257] Second, the focus on driving down expenses should fall on two people instead of just one: "the P&L [profit and loss] owner and a leader from a functional cost center (such as IT)."[258] Third, there should be "rigorous processes for planning and monitoring."[259] Fourth, there must be "aligned incentives."[260] Lastly, perhaps the most critical factor supporting the success of ZBP is the managers' mindset.[261]

ZBP is designed to shift the mindset of the organization—from the "what we have now" mindset that, in most organizations, would be incrementally cost-adjusted and kept—to a constant questioning of "where are we going and is this necessary to get there?"[262] Therefore, ZBP offers the possibility for reducing costs, adding value through operational efficiency (and rigorously challenging assumptions), and cultivating an organization that is aligned to strategy.[263] ZBP can also catalyze broader collaboration across the organization.[264]

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255 *See* Fitzpatrick & Hawke, *supra* note 234.

256 *Id.*

257 *Id.* This typically means grouping costs into a matrix with two dimensions—the type of expense and the owner of that expense. This way, the managers know exactly what type of expenses they are dealing with, as well as the people responsible for those expenses. Without this detailed level of visibility, it makes it too easy to come up with excuses to explain away the way things are and why they cannot change. *Id.*

258 *Id.* The addition of a second owner removes autonomy from the P&L owner and results in a healthy ongoing dialogue concerning cost management. This governance model helps spread best practices across business units and geographies and helps to ensure that windfalls in one area do not get subconsciously reallocated elsewhere. *Id.*

259 *Id.* In addition to budgeting from zero, there needs to be other processes such as the top executives setting aggressive top-down targets supported by detailed bottom-up analyses, and structured budget negotiations throughout the company. These negotiations should have a common fact base and analogous cost comparisons across operating units. Furthermore, monthly checkups on all of these processes can guarantee that savings are not lost, and problems are addressed quickly and efficiently. *Id.*

260 *Id.* Measuring cost performance can align compensation to cost-management objectives. Considering only what is under each manager's control avoids penalizing managers in the field when things such as intercompany changes and allocations arise from the corporate center. *Id.*

261 *Id.* ZBP is only effective when managers completely stop trying to explain why things are the way they are and instead start thinking actively about ways to make them better. The idea that "no spending is too small to be reviewed" is crucial to a manager's mind-set. ZBP, together with its several supporting factors, can lead to a variety of potential benefits and successes. *Id.*

262 *Id.*

263 DELOITTE, *supra* note 228, at 3.

264 *Id.* The main drawback of ZBP is that it can be time consuming. *Id.*

Applying ZBP to utility organizations could potentially reduce costs (as it would be applied before capital would be spent and operations expenditures incurred), require the better vetting of assumptions (especially around load forecasts and other measures), and increase transparency as every expense would need to be individually justified with no automatic, incremental increases.[265] Additionally, the change in mindset—if it occurs, and it must for ZBP to be successful long-term—ensures the process is not something that happens and then is not thought of again until the next budgeting exercise but rather becomes a standard thought process. The ZBP process could also start a broader conversation between regulated monopolies, their regulators, and their customers about what the future state the utility is trying to achieve should be—and whether what utilities and regulators have been doing to date is efficient in defining what is necessary to get there.

In a competitive market, capital is constrained by market conditions, but in a regulated market, the capital is primarily constrained by the regulator given the low cost of capital and bond-like nature of utility debt.[266] Therefore, regulators tend to look at whether a utility's decision to spend is prudent.[267] In utilities, the revenue model based on capital and operation and maintenance (O&M) expenditures "causes significant measures of deadweight in the system."[268]

On the capital side, the lesson would be about using capital efficiently rather than "prudently." A "prudent" decision could still have

265 Increasing load forecasts allows vertically integrated utilities to build or acquire new generation assets. Unfortunately for customers, when they are incorrect, it can be very costly. The Santee Cooper customers of the new nuclear reactors at VC Summer will be paying billions whether or not the reactors are ever completed; however, due to revised load forecasts, it is now known that Santee Cooper doesn't even need the electricity those reactors would produce. Instead, if both are completed—and even lowering its stake from 45 to 40%—completing both reactors would give the utility a 44% reserve margin, 30% higher than industry standard, essentially having customers pay for (very expensive) additional generation capacity that they are not going to use. Kristi E. Swartz, *Toshiba Extends V.C. Summer Project $2.2B Lifeline*, E&E NEWS ENERGYWIRE (July 28, 2017), https://perma.cc/RB3F-J8GQ. While the project was, in fact, cancelled, the utility partners will still be able to recover costs from customers. Kristi E. Swartz, *Utilities Pull Plug on V.C. Summer Expansion Project*, E&E NEWS (July 31, 2017), https://perma.cc/R9SX-XD89 ("The numbers showed that proceeding with V.C. Summer would not be economically sound now, especially in light of lower electricity demand, the companies said this afternoon. For Santee Cooper alone, the price tag is 75 percent higher than the public power utility originally budgeted. . . . SCE&G will go before state utility regulators and start an 'abandonment proceeding.' South Carolina law will let SCE&G amortize project costs.").

266 There is an argument that, by some traditional measures, such as return on invested capital, utilities' capital efficiency seems reasonably good. However, this is because utilities get a guaranteed return, rather than because they made good decisions regarding their capital investments. To attempt to manage this distinction, some public utility commissions have turned to performance incentives, but these are still not common. *See* Herman K. Trabish, *Can Performance-Based Regulation Unlock the Utility of the Future?*, UTIL. DIVE (Mar. 17, 2016), https://perma.cc/2Y9Y-35YN.

267 Jim Lazar, *Electricity Regulation in the US: A Guide*, REGULATORY ASSISTANCE PROJECT 91 (2016), https://perma.cc/J7L3-UFGS.

268 Pyper, *supra* note 137.

customers paying the electric utility up to $2.5 billion for nuclear reactors that will never be built,[269] or paying for a coal plant with carbon capture and sequestration that is likely to cost over three times more than expected (roughly $7 billion versus $2 billion).[270] Regulators could use the lessened information asymmetry to require more efficient decisions and, when efficiency was not implemented, an enhanced ability to disallow costs being added into the rate base.

As noted above, the efficient use of capital also highlights another need for regulators to be able to make better decisions, more like private equity management: data. While private equity managers have full transparency into their businesses and therefore know where the most efficient use of capital would be, regulators sitting in public utility commissions are not working with transparent electric utilities on the other side.[271] Therefore, "[w]ithout vast swaths of data and the resources to digest it, regulators cannot know what options utilities have for optimizing the system, and thus what constitutes prudent investment."[272]

B. Utility Data Transparency and Confidentiality

As we transition to the grid of the future, transparency will become even more important. This transparency—or, up until now, lack thereof—impacted regulatory decisions on utility capital spend.[273] Only the utility—not the regulators, and not the public staff, and not intervenors—knew which projects were most critical to the utility, where expenses could be cut to ensure profit targets were achieved, and what strategy the utility would employ during negotiations to ensure its asset base grew at a level that would satisfy their investors.[274]

Therefore, while data asymmetries have always existed between regulators and monopoly utilities, data asymmetries now also exist between multiple parties—regulators, monopoly utilities, customers, and third parties—and are only to get worse as we move into a more

269 Mark Chediak, *Customers Could Pay $2.5 Billion for Nukes that Aren't Built*, BLOOMBERG (Aug. 12, 2016), https://perma.cc/2WHC-WKHT.

270 Kristi E. Swartz, *Kemper CCS Plant Costs Tick Up with Latest Delay*, E&E NEWS ENERGYWIRE (Dec. 5, 2016), https://perma.cc/4DA8-CY35. Southern Company's Kemper County facility also is now projected to have annual O&M costs 288% over what was originally forecast.

271 I am not suggesting that regulators act as the regulated utility's management and board, but, as captive ratepayers are paying the bills, that regulators ensure capital spent with a public purpose is, indeed, spent efficiently. Cary Coglianese et al., *Seeking Truth for Power: Informational Strategy and Regulatory Policy Making*, 89 MINN. L. REV. 277, 285 (2004).

272 Michael O'Boyle, *Utilities in the Information Age: Moving from Construction to Optimization*, GREENTECH MEDIA (May 4, 2016), https://perma.cc/3K7B-E78H.

273 Scott Douglas & Albert Meijer, *Transparency and Public Value—Analyzing the Transparency Practices and Value Creation of Public Utilities*, 39 INT'L J. OF PUB. ADMIN. 940, 948 (2016).

274 Coglianese, *supra* note 271, at 287.

distributed energy future.[275] It is well known that vertically integrated or other monopoly utilities have access to all system information,[276] but this data will need to be accessed by both customers and third parties to enable cost-effective solutions in the future.[277]

By allowing customer and third-party capital—rather than rate-based capital—to drive improvements to the system and defer otherwise necessary projects, consumers should pay lower bills; greenhouse gas and criteria pollutants should decrease; and individuals, businesses, and neighborhoods should become more resilient.[278] However, that future will require utilities to not simply ask for a specific thing to be done in a specific way (and have regulators approve the spending that goes along with it) but ask third parties to solve a particular problem or issue.[279] Those answers can only come with the same perfect data utilities have access to, especially if third-party capital will be competing for deployment against rate-based-capital solutions.[280] The most efficient transition to the grid of the future will be impossible if utilities are not required to increase transparency and share data.

The most common reason given by utilities against any sort of data sharing seems to be two-fold: 1) national security or grid cyber security claims and 2) business confidentiality.[281] This Article is not suggesting the North American Electric Reliability Corporation (NERC) change its guidelines, which currently govern protecting sensitive information and

275 Professor Amy Stein has written on the "growing separation between ownership and control" is our energy system, and how that is leading to "divergent interests and information asymmetries." Stein, *supra* note 6, at 895–96.

276 *Id.* at 936 ("When utilities were vertically integrated, utilities had access to all the information.").

277 In some cases, information necessary to transition to a more distributed grid is hard even for the utility. *See* Jason Iacobucci, *DER Valuation is Necessary but Complex Task for Regulated Utilities*, POWER GRID INT'L (Oct. 10, 2017), https://perma.cc/ZG96-TDYX ("When customers add thousands of generation points to the grid, power flow analysis and resource planning will require the convergence of both operational and commercial data models to assess the value and future siting of these assets. This is no easy task. The commercial and operational data are quite disparate and often stored in applications that are not easily accessible to one another.").

278 This is, in part, because distributed generation technologies are carbon-free. *Id*. at 915.

279 Interestingly, when utilities have been required to do this, renewables offerings have been found to be the lowest cost solution. Bryan Jacob, *All-Source Procurement: Allowing Renewables to Compete in Utility Planning*, SOUTHERN ALLIANCE FOR CLEAN ENERGY (Apr. 20, 2020), https://perma.cc/CQ6Z-9826. *See also* Robert Walton, *Xcel Solicitation Returns 'Incredible' Renewable Energy, Storage Bids*, UTIL. DIVE (Jan. 8, 2018), https://perma.cc/94H2-8FAC (the results of the Xcel CO solicitation); Gavin Bade, *APS to Install 850 MW of Storage, 100 MW of Solar in Major Clean Energy Buy*, UTIL. DIVE (Feb. 21, 2019), https://perma.cc/BC66-L72V (discussing the APS outcome).

280 Payne, *supra* note 96, at 76.

281 *See* STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK, A REGULATOR'S PRIVACY GUIDE TO THIRD-PARTY DATA ACCESS FOR ENERGY EFFICIENCY 3 (2012), https://perma.cc/F59R-9HQ4.

security for the bulk power system.[282] If NERC guidelines would require a confidentiality agreement to access certain data, commissions could certainly adopt that practice for that particular data.

Business confidentiality is another matter and must cease to be an obstacle in determining whether regulated monopoly utilities are acting efficiently or what actions are in the public interest.[283] These are regulated monopoly businesses. Simply by definition, they are not in competition with anyone—a regulated monopoly utility is a non-competitive business. Therefore, any claim that a regulated monopoly utility needs to have business information kept confidential for competitive reasons is absurd. There is no competition.[284]

But this happens regularly.[285] Regulated utilities routinely invoke their competitive interests as a reason to withhold valuable information from the public eye.[286] One of the most egregious examples occurred in 2018, when South Carolina Electric & Gas Company (SCE&G), citing confidentiality interests, refused to disclose information about two abandoned nuclear reactors at the Virgil C. Summer site on which $9 billion had already been spent before the project was cancelled in 2017.[287] The withheld information (withheld from regulators as well as the public) amounted to more than 1.4 million pages, including the privilege log of items it had not turned over at all.[288] The captive ratepayers of the two owners of the partially built reactors will be paying for this costly mistake for decades to come,[289] potentially without ever knowing how and why the mistake occurred.

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282 N. AM. ELEC. RELIABILITY COUNCIL, SECURITY GUIDELINE FOR THE ELECTRICITY SECTOR: PROTECTING SENSITIVE INFORMATION 1 (2002), https://perma.cc/S3WC-Q67A.

283 *See, e.g.*, *Judge Blocks Release of Ore. Utility's Information*, E&E NEWS ENERGYWIRE (Sept. 11, 2018), https://perma.cc/5EEJ-4LKV (describing a judge blocking financial data to be released to the Sierra Club which was arguing the company's coal plants were unprofitable).

284 Stein, *supra* note 6, at 901. Given that utility territories meet, there is no new regulated monopoly territory to conquer. You could have customers move from one regulated monopoly to another—for example, through municipalization—but everywhere that has utility service today is part of a monopoly utility territory.

285 See, for example, the case of First Energy's nuclear plants in Ohio, which are requesting a bailout from Ohio legislators. While these are part of a deregulated business, the reason given for not disclosing how much the two nuclear plants were losing was a bankruptcy proceeding. Jeremy Pelzer, *Ohio Politics: How (Un)Profitable are Ohio's Two Nuclear Plants? First Energy Solutions Says It Can't Tell the Public*, CLEVELAND (June 24, 2019), https://perma.cc/H7X4-Y4BD. This led to two experts discussing their findings (which came to opposite conclusions) without any ability of legislators, the public, or other interested parties to actually determine which was accurate. *Id.*

286 STATE & LOCAL ENERGY EFFICIENCY ACTION NETWORK, *supra* note 281, at 3.

287 Tom Barton, *SCE&G Wants to Keep Secret 1.4 Million Pages of V.C. Summer Nuclear Documents*, THE STATE (July 18, 2018), https://perma.cc/M4GB-F9B3.

288 *Id.*

289 Santee Cooper ratepayers—the other owner besides SCANA's SCE&G—"each are paying about $5 a month toward that debt now, a figure expected to rise to $13 a month for the next four decades." Avery G. Wilks, *Santee Cooper Hammers Final Nail into Coffin of Unfinished VC Summer Nuclear Project*, THE STATE (Jan. 28, 2019),

What is more, even where states set forth disclosure requirements by statutes or regulations, these states often list "trade secrets" as an acceptable reason to keep something from the public discourse; but to qualify as a trade secret, the entity who wishes non-disclosure must justify how others could obtain economic value from the disclosure.[290] These are not competitive businesses; others cannot obtain economic value from the disclosure, and if the expense is for fuel or other items, captive ratepayers may in fact benefit from having the disclosure as it may lead others to attempt to gain that business by offering lower prices.[291]

In order to decrease information asymmetry and encourage data transparency, regulators should adopt a rule that requires full transparency in any proceeding where the result might at any point in the future be charged to captive ratepayers: nothing may be kept confidential and out of the public discussion. This would require a full disclosure of many things which utilities have long sought to keep out of the public sphere, such as salary information.[292] Given that captive ratepayers are paying those salaries, that information should be available to regulators, public staff, intervenors, and the general public.

To be effective, this rule would also need to include any proprietary or third-party software that utilities were using to justify their rate cases.[293] Regulators, public staff, and intervenors would need to be given full access to these programs free of charge and without restriction.

https://perma.cc/CF7Y-2PYK. This situation in South Carolina potentially occurred because the regulations around confidentiality are not as concrete as in other states. *See* S.C. CODE ANN. § 58-4-55(C) (2020); S.C. CODE ANN. REGS. 103-823 (2007); S.C. CODE ANN. REGS. 103-823.1 (2012); S.C. CODE ANN. REGS. 103-823(A) (2007) (explaining the rules for production and application for ratemaking to the South Carolina Commission). *Cf.* N.C. GEN. STAT. ANN. § 132-1.2 (2019) (requiring something to meet all four specific conditions to be kept confidential, including that it constitutes a trade secret); N.J. ADMIN. CODE § 14:1-12.8 (2008) ("[D]escription of any harmful effects which disclosure would have upon, including, but not limited to, the claimant's competitive or bidding position, trade secrets, proprietary commercial or financial information, or national security, and an explanation of the causal relationship between the disclosure and such harmful effects."); MONT. ADMIN. R. 38.2.5007 (2007) (listing six specific requirements to claim protection of something as a trade secret).

290 *See, e.g.*, GA. COMP. R. & REGS. 515-3-1-.11 (2020) (requiring justification of "how others can obtain economic value from its disclosure" to classify something as a trade secret).

291 *Id.*

292 Belen Chacon, *Should Utility Companies Disclose Their Earnings?*, VACHON LAW FIRM: CONSUMER INFO BLOG (Apr. 19, 2014), https://perma.cc/HZ5L-TH3M. State employees (also a monopoly of sorts) routinely have their salary information made public. The salaries of all employees of the state of North Carolina, including the university system, are publicly available on the Raleigh News & Observer website. Kevin Keister, *Look Up Salaries of State Government Workers*, NEWS & OBSERVER (Mar. 2, 2015), https://perma.cc/7A3N-HMLK.

293 This would include programs like Aurora, used for electric modeling, forecasting, and analysis. SEATTLE CITY LIGHT 2016 IRP, APPENDIX 11: AURORAXMP ELECTRIC MARKET MODEL (2016), https://perma.cc/R3QC-CD3T.

Only by allowing such unfettered access and complete disclosure can the assumptions used to justify particular decisions actually be recognized, acknowledged, analyzed and discussed. If a utility (or third-party providing software to a utility) did not want to provide access, then nothing derived from that system or process should be allowed as justification for any part of a rate case or IRP.[294]

While ZBP and full transparency are the main two lessons regulators should learn from private equity managers; lessons in customer engagement and innovation may also prove helpful as we transition to the energy future.

C. Other Lessons—Customer Engagement and Innovation

In the competitive world, rather than the monopolistic system, companies are essentially working in a pure market system. Private equity firms and companies survive (or do not) based on whether people choose to buy their products at the price point at which they can sell it. The whole reason they are interested in capital allocation and zero-based planning is because they need to get to a price point at which people will buy their product and investors will accept the return on investment. So, one measure of a private equity firm's success would be that the companies they invest in remain in business.

Customers are involved with competitive businesses every day and provide them feedback at the same time by choosing what to purchase and what not to purchase. While electric utilities may not feel the need for higher customer satisfaction scores—they are, after all, a monopoly—recent studies have found that "[c]ustomer satisfaction does translate into real and tangible value for power and utility companies in a number of ways and is indeed better for business."[295] By restructuring processes that increase consumer engagement in utility regulatory processes, transparency would be increased and the result could only be better for the American public.

One recent example of this was the Exelon-Pepco merger. While the merger did eventually go through, the opposition by consumer groups in the District of Columbia shaped both the final outcomes and, likely, the

294 The current process, in many cases, requires public staff or intervenors to request new data runs or models. While this may seem sufficient, in reality it is not: there is no transparency about whether the same assumptions and modeling characteristics were used in all runs, nor the ability to tweak different variables after one run. Rather, public staff must wait an extended period of time for one result to come back, and then make another request, with the waiting period restarting. This makes it impossible for public staff or intervenors to effectively determine what they consider to be the optimal solution to any particular system challenge. Additionally, even when a license may be available to an intervenor to use the same system, the cost is prohibitively expensive, narrowing the ability of those working on behalf of the public to counter the utility's preferred scenario.

295 *Beyond the Hype: What is the Value of Customer Satisfaction to a Regulated Utility?*, PRICE WATERHOUSE COOPERS (Apr. 2015), https://perma.cc/KA5L-L47Q.

regulatory process going forward.[296] Wanting more local control, more affordable rates for lower income residents, more renewable energy, and for generation to be distributed rather than utility-scale, a coalition did extract concessions from Exelon.[297] However, the real impact may be going forward. As one of the organizers noted,

> [t]here's a lot of policy being made, and historically the public hasn't really been involved. . . . So I think that's what was one of the main points for me—not only was the public involved [in the Exelon campaign], but the public fundamentally changed the proceeding and the public is going to stay involved.[298]

By customers taking a more active role, their preferences—typically demonstrated simply by the act of purchasing a product in a competitive market—can be incorporated into the regulation of electric monopolies.[299]

The need to sell products—rather than rely on inelastic demand—also drives a focus on the customer and innovation that has not traditionally existed at monopoly utilities. As David Crane noted, "[i]f you have to fight for a customer, you're going to do your best to serve your customer."[300] On the other hand, "[u]tilities are the least customer-friendly entities on the Earth, because they're regulated monopolies."[301] Regulators have also recognized that current business models "deprive[] customers of choice."[302]

To stay in business and return value to shareholders, private equity firms must innovate, and they must innovate in efficient, technologically savvy ways—as efficiency is one of the main drivers they can use to create value.[303] New research has demonstrated that firms controlled by private equity not only increased their patent filings, but specifically

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296 Julia Pyper, *Autopsy of the Campaign Against the Exelon-Pepco Merger*, GREENTECH MEDIA (Aug. 29, 2016), https://perma.cc/CGU4-AEQV.

297 Robert Walton, *Exelon, Pepco More than Double Merger Incentives for D.C.*, UTIL. DIVE (Feb. 20, 2015), https://perma.cc/3RZT-7GBH.

298 Pyper, *supra* note 296.

299 *Beyond the Hype*, *supra* note 295, at 8. While it might be better for utilities to seek this information, they will not because they have no need to do so in order to sell their product. But, it could help regulators be better aligned with what customers want, especially as the electricity system changes to one with potentially more participation through distributed generation. *See* Steve Corneli & Steve Kihm, *Will Distributed Energy End the Utility Natural Monopoly?*, ELEC. POL'Y (June 2016), https://perma.cc/KEZ6-BHUT.

300 Julia Pyper, *A Conversation with David Crane on Getting Fired from NRG and What's Next for His Energy Plans*, GREENTECH MEDIA (Apr. 29, 2016), https://perma.cc/QV2R-2R4F.

301 *Id.*

302 Pyper, *supra* note 137.

303 Nicole Torres, *Private Equity Can Make Firms More Innovative*, HARV. BUS. REV. (June 29, 2015), https://perma.cc/KU4C-SE5V.

had an increase in highly cited patents, with private equity-backed firms filing 40% more high-quality patents than regular firms.[304]

For utilities, innovation may cut both ways. It may allow them to better communicate and interact with their customers, build a competitive advantage through customer experience, and generally become more customer centric.[305] Innovation, on the other hand, may allow customers at some point in the future to disconnect from the monopoly network.[306] However, before that happens, many simply want a more responsive utility—but even "most [employees] do not view their utility as leading the industry in operational transformation."[307] Innovation spending in the utility industry lags that of other sectors.[308] Some in the industry are calling for "modernizing the utility-customer relationship in the same way" other industries, such as banking and health care do today.[309] "Is it reasonable to give away the data on your phone with a single click, while your utility bills require filling out a four-page legal form?"[310]

Innovation in regulatory processes could also help drive toward the grid of the future in the areas of data transparency and capital efficiency—decreasing information asymmetry allowing innovation to support new regulatory models.

VI. WHAT IMPLEMENTING ZBP, TRANSPARENCY, AND INNOVATION WOULD LOOK LIKE IN PRACTICE

Regulators continue to take an "all of the above" strategy, requiring utilities to continue to meet all expectations of the "old" grid while trying to transition to the "new." Utilities, through their actions in rate cases, are entrenching their positions, requiring both more time and

304 *Id.* Highly cited is a proxy for higher quality in patents. *Id. See also* Dan Balter, *Private Equity Can Make Companies More Innovative*, DUCO (Apr. 23, 2018), https://perma.cc/N42J-2HAU.

305 Kaspar Roos, *The Future of Customer Experience in the Energy Industry*, ASPIRE (Jan. 2018), https://perma.cc/W7RB-N3FZ. *See also* Adrian Tuck, 3 *Steps to Making Utilities Formidable Energy Providers in the On-Demand Era*, GREENTECH MEDIA (July 31, 2017), https://perma.cc/5JGS-XHQX ("It's likely that within existing budgets, there's room for innovation that can work right away and scale to future demands. The benefit of such an approach to product and service development is that there's little to no risk: Utilities reap benefits now while also leaving the door open to even more value down the road.").

306 Pyper, *supra* note 137.

307 *2019 Utility Survey Finds Strong Vision and Broad Adoption of Grid Modernization Strategy*, UTIL. PRODS. (May 24, 2019), https://perma.cc/4HJZ-6PPZ.

308 Rod Walton, *Accenture IUEC: Beware (and Embrace) the Steep Cliffs of Disruption*, POWER ENGINEERING (Apr. 5, 2019), https://perma.cc/2MR4-953H ("Too often, though, utility companies are only investing about one percent of revenues into innovation, while other sectors and regions of the world total 4 percent.").

309 Jeff St. John, *A New Grid Security Report, DOE's Budget Battles, and an App that Fails a Utility Security Test*, GREENTECH MEDIA (July 23, 2017), https://perma.cc/VB8U-JSVL.

310 *Id.*

money for any transition to the new energy system to occur. The requirements of ZBP and transparency will enable regulators, intervenors, and non-traditional market participants to innovate and ensure a more cost-effective energy transition.

What constitutes the efficient operation of the utility is going to take data transparency and additional resources. Right now, there is a vast disparity in knowledge; while the utility could probably determine where efficiencies would be possible, there is no incentive for them to share this with the regulator (or public staff, intervenors, or the general public), or even acknowledge any inefficiencies exist whatsoever. And without access to data such as that developed and made available through ZBP—which could enable verification of assumptions and what other information the utility is asking regulators to make decisions based on—intervenors and other policy entrepreneurs are unlikely to have access to and the time and money to challenge the underlying data and assumptions. This could also be used for processes like IRPs, which require cost and load assumptions for the next couple of decades.

Therefore, because of the information asymmetry, for utility spending to be transparent and in the public interest, it is likely that a specific mandate would be necessary. ZBP would almost certainly lead to savings for electric utility customers, if done with transparency. Currently, many utility rate cases use escalators—where the "historic year" figures used as a baseline are incremented up rather than starting from scratch[311] and justifying what the utility is asking their customers to pay. These escalators can take the form of revenue per customer indexing, "inflation-only" approaches, or can be based on forward-looking forecasts.[312] Some public utility commissions allow for "automatic adjustment clauses," where the utility can receive increases without going through a rate case proceeding.[313] Requiring ZBP every time a utility comes in for either a rate case proceeding or an IRP would be an excellent start to recognizing where money is being spent to maintain the current system and what is being spent to transition to the future energy system.

However, none of these mechanisms deal with the underlying issue: a disparity in data (only the electric utility knows what cuts would be meaningful and where efficiencies could be gained) and the almost complete lack of need for the utilities to act as though they are operating in a competitive market (in other words, efficiently). Additional legislative reforms may be needed to ensure that confidentiality provisions do not allow regulated monopoly utilities to retain

311 Consolidated Edison's recent rate case in New York is a good example of this. CONSOL. EDISON CO. OF N.Y., INC., DIRECT TESTIMONY—ACCOUNTING PANEL 96–108 (2016).

312 *Our Expertise*, PAC. ECON. GROUP (2020), https://perma.cc/P8FF-CBZ8.

313 FRANK GRAVES ET AL., EDISON ELEC. INST., ELECTRIC UTILITY AUTOMATIC ADJUSTMENT CLAUSES: BENEFITS AND DESIGN CONSIDERATIONS 1 (2006), https://perma.cc/2CWY-PRRA.

information that impacts rates except for explicit national or cybersecurity rationales, which can be managed through the NERC process. Nothing except what NERC deems confidential should be hidden from regulators, public staff, intervenors, or the general public.

Monetarily, the utility-requested revenue requirement currently is only limited by what regulators may view as too significant for rate payers to afford, rather than by a bottom-up assessment of what the organization actually needs to operate. Performance-based ratemaking attempted to solve part of this challenge[314] but has been largely unsuccessful at reining in large cost increases.[315] While some states have started looking at capping annual increases, the caps often exclude certain categories of expenses, including things like environmental upgrades.[316] Putting utilities on a "budget" tied to GDP growth or inflation is another option[317] but not an option that any state has attempted to implement.

As much of what utilities do can fall into multiple expense categories, the ZBP approach could bring the transparency and efficiency of competitive markets to the monopoly system. If done in a standardized way, it could also allow transparency across geographical or political boundaries. A standardized ZBP approach would enable regulators to compare utilities against each other, something nearly impossible today because of disparities in reporting and classification. Therefore, ZBP could further enhance transparency by allowing for comparative evaluations.

Even with the additional data made available, regulators (and legislators) should acknowledge that public staffs are routinely underfunded in comparison with the utility. If we are going to ensure that the regulatory compact is upheld, not only must the data be available, but public staffs must be given the training, resources, and skills necessary to take advantage of the data.

The challenge of making regulated monopoly utilities more efficient will only become more acute with the falling prices of distributed energy resources and the desire of customers to manage their electricity use and, potentially, generate their own electricity.[318] While intervenors have been attempting to make changes based on the current processes and data available to them, the potentially large-scale changes the industry is undergoing provide a potential policy window for entrepreneurs to make further changes to the regulatory structure.

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314 G. A. COMNES ET AL., LAWRENCE BERKELEY LAB., PERFORMANCE-BASED RATEMAKING FOR ELECTRIC UTILITIES: REVIEW OF PLANS AND ANALYSIS OF ECONOMIC AND RESOURCE-PLANNING ISSUES 1, 1–2 (1995).

315 *See* Heather Payne, *RIIO to REV: What U.S. Power Reform Should Learn from the U.K.*, 36 PACE L. REV. 31, 33 (2015).

316 Jeffrey Tomich, *Ratemaking Overhaul All but Dead in Mo.*, E&E NEWS ENERGYWIRE (May 12, 2016), https://perma.cc/PES3-D4T6.

317 Pyper, *supra* note 137.

318 This is especially true as the price of solar is decreasing. *Is Residential Electricity Price Going Up or Down?*, ENERGYSAGE (June 2, 2019), https://perma.cc/GQ5D-5NJ7.

Some, especially solar and storage companies, are trying to create that space, as are a few merchant transmission companies.[319] However, incumbent utilities are using the regulatory structure to attempt to defeat or diminish those potential gains.

The requirements of ZBP and transparency will enable regulators, intervenors, and non-traditional market participants to innovate and ensure a more cost-effective energy transition. Adoption of these changes, fostering innovation and allowing a natural monopoly to exist only where explicitly necessary to meet grid and customer needs, may be enough to ensure the regulatory compact works in the public interest going forward.

VII. CONCLUSION

> It is an undoubted and undeniable fact that in our modern American practice the public service commissions of many States have often failed to live up to the very high purpose for which they were created. In many instances their selection has been obtained by the public utility corporation themselves. These corporations, to the prejudice of the public, have often influenced the actions of the public service commissions.[320]

President Franklin Roosevelt's words ring as true today as when they were spoken in 1932.[321] While electricity is becoming recognized as a human right and, certainly, instrumental to modern society, the need for regulators to ensure the monopolies providing that service are acting efficiently and in the public interest has never been greater. The financial pressures on investor-owned electric utilities are only going to increase: increasing energy efficiency, decreasing prices for self-generation options like solar, decreased load growth overall, and the decoupling of electric load growth from national GDP all lead to the question of how these firms are going to maintain increasing investor returns, which the equity markets have come to expect from them. While increasing capital expenditures have been filling the gap and will likely do so for a short time into the future, those investments and the O&M expense should be looked at more closely by regulators to ensure they are in the public interest, rather than in the interest of the utility's shareholders. Critically, this Article does not suggest that investment in our electrical grid should be reduced—but decisions around that investment should be transparent and in the public interest. Additional controls around expenses, like ZBP, could demonstrate significant savings for customers, potentially freeing up capital that could be used

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319 OWEN ZINAMAN ET AL., NAT'L RENEWABLE ENERGY LAB., AN OVERVIEW OF BEHIND-THE-METER SOLAR-PLUS-STORAGE REGULATORY DESIGN 9 (2020).

320 David Morris, *Defending the Public Good: FDR's Portland Speech*, INST. FOR LOCAL SELF-RELIANCE (Sept. 11, 2013), https://perma.cc/Q7VD-75KD (quoting Franklin D. Roosevelt, Campaign Address in Portland, Oregon (Sept. 21, 1932)).

321 *Id.*

to transition the U.S. to a low-carbon future. In any case, the American public cannot afford to shoulder the increasingly high electric bills the current regulation of the monopoly system is allowing. Customers are asking for change, as well as showing their dissatisfaction with the current system. Regulators—and policy entrepreneurs—should take note.