Review of Current Iowa Code Provisions and Ratemaking Procedures

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Acronyms

ACEEE	American Council for an Energy-Efficient Economy
AEP	Alternate Energy Production
ALJ	Administrative law judge
AMI	Average median income
Black Hills	Black Hills/Iowa Gas Utility Company, LLC d/b/a Black Hills Energy
BLS	Bureau of Labor Statistics
C&I	Commercial and industrial
CAGR	Compound annual growth rate
CAIDI	Customer Average Interruption Duration Index
CIC	Capital Investment Charge
CapEx	Capital expenditures
CPI	Consumer Price Index
Docket	Docket No. NOI-2023-0001
DR	Demand response
DRCR	Demand Response Cost Recovery
EAC	Energy Adjustment Clause
ECHO	Enforcement and Compliance History Online
EE	Energy efficiency
EECR	Energy Efficiency Cost Recovery
EIA	Energy Information Administration
EPA	Environmental Protection Agency
ESM	Earnings sharing mechanism
FERC	Federal Energy Regulatory Commission
FPL	Federal Poverty Level
GUIC	Gas Utility Infrastructure Cost
HEAG	Home Energy Affordability Gap
HF	House File
IAC	Iowa Administrative Code
IAWC	Iowa-American Water Company
IOU	Investor-owned utility
IPL	Interstate Power and Light Company
IRP	Integrated resource plan
IUB	Iowa Utilities Board
KCC	Kansas Corporation Commission
LEAD	Low-Income Energy Affordability Data
LEI	London Economics International LLC
Liberty Utilities	Liberty Utilities (Midstate Natural Gas) Corp. d/b/a Liberty Utilities
LRAM	Lost revenue adjustment mechanism
MAWC	Missouri-American Water Company
MidAmerican	MidAmerican Energy Company
MISO	Midcontinent Independent System Operator
MRP	Multi-year rate plan
NARUC	National Association of Regulatory Utility Commissioners
NERC	North American Electric Reliability Corporation

NITS	Network integration transmission service
NOI	Notice of Inquiry
O&M	Operations and maintenance
OATT	Open access transmission tariff
OCA	Office of Consumer Advocate
PBR	Performance-based regulation
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonic acid
PGA	Purchase Gas Adjustment
PHMSA	Pipeline and Hazardous Materials Safety Administration
PI	Phase In
PIM	Performance incentive mechanism
PSC	Public Service Commission
PTC	Production tax credit
PUC	Public utility commission
PWS	Public water systems
QIP	Qualified Infrastructure Plant
RCE	Rate Case Expense
REC	Rural electric cooperative
RER	Renewable Energy Rider
RES	Resource Evaluation Study
RIM	Ratepayer Impact Measure
ROE	Return on equity
ROR	Rate of return
RPS	Renewable portfolio standard
RTO	Regional transmission organization
RTS	Regional Transmission Service
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SDWA	Safe Drinking Water Act
SDWIS	Safe Drinking Water Information System
SF	Senate File
SPP	Southwest Power Pool
SSMA	System Safety Maintenance Adjustment
TBR	Tax Benefit Rider
TCA	Transmission Cost Adjustment
TCF	Thousand cubic feet
TERM	Tax Expense Revision Mechanism
US	United States
Zond	Zond Development Corporation

1 Executive Summary

The Iowa Utilities Board ("IUB") selected London Economics International LLC ("LEI") to perform a review of Iowa's current ratemaking procedures and legislation ("Study"). This Study was mandated by the Iowa Legislature in House File ("HF") 617. HF 617 asks whether the current ratemaking procedures and underlying legislation allow for "safe, adequate, reliable, and affordable utility services" and rates that are "nondiscriminatory, just, reasonable, and based on the utility's cost of providing service to its customers within the state".[1] The legislation promotes both of these statements for utility services and rates, as the legislation is designed for the IUB to oversee each of these aspects, but the current legislation and procedures may not be adequate and efficient enough to allow the IUB to effectively enforce the legislation.

1.1 Overview of the study and scope of work

1.1.1 House File 617

In March 2023, Iowa State Representative Shannon Lundgren stated on the House floor that Iowa's ratemaking procedures have not been reviewed since 2004, while the Iowa State Legislature since has made numerous changes to the processes and regulations for utilities.[2] Subsequently, the Iowa Senate passed HF 617, which requires the IUB to review the ratemaking procedures across the state "to determine whether revised provisions and different procedures would reflect a utility's cost of providing services to its customers in the state."[3] This bill was approved by the Iowa Office of the Governor on May 1, 2023, and became effective from July 1, 2023.[4] The IUB then released a request for proposal on procuring a qualified consulting firm to assist in the research, coordination, and writing of a review report of the current Iowa Code provisions and ratemaking procedures. LEI, through a competitive procurement process, was contracted to assist the IUB on this matter. To handle this matter, the IUB opened Docket No. NOI-2023-0001 ("Docket").

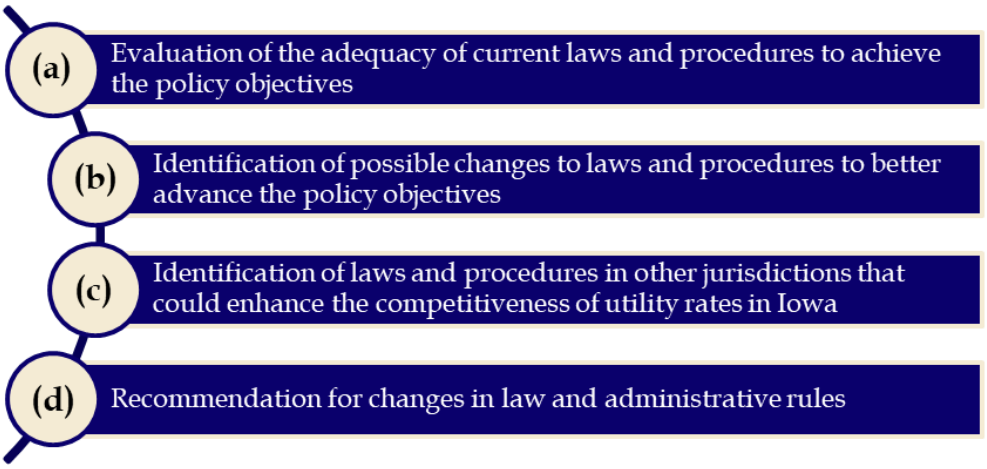
[1] Iowa Legislature. "An Act Relating to Iowa Utilities Board Review of Specified Provisions and Utility Ratemaking Procedures." *House File 617*. June 1, 2023.

[2] Fisher, Benjamin. "Iowa bills aim to shift rules for changes in utility rates". Web. Accessed July 13, 2023.

[3] Iowa Legislature. "An Act Relating to Iowa Utilities Board Review of Specified Provisions and Utility Ratemaking Procedures." *House File 617*. June 1, 2023.

[4] Ibid.

Figure 1. Requirements of the review of Iowa Code provisions and ratemaking procedures as per HF 617



Source: Iowa Legislature. "An Act Relating to Iowa Utilities Board Review of Specified Provisions and Utility Ratemaking Procedures." House File 617. June 1, 2023.

1.1.2 Study scope, policy objectives, and evaluation criteria

The scope of this study as per HF 617, listed in Figure 1, is as follows:

- Review the current Iowa Code provisions and ratemaking procedures adhering to the following policy objectives:
    - Ensure utility services that are safe, adequate, reliable, and affordable;
    - Provide rates that are non-discriminatory, just, reasonable, and based on the utility's cost of providing service to Iowa customers; and
    - Evaluate the adequacy and efficiency of Iowa's current ratemaking laws.
- Identify and evaluate ratemaking laws and procedures of other states that could be adopted in Iowa to enhance the competitiveness of utility rates and services; and
- Support the IUB on the integration of a final report containing recommendations regarding policy and draft legislation and/or administrative rules, into a legislative report from the IUB, which will be delivered to the Iowa State Legislature no later than January 1, 2024.

As part of the overall analysis and data gathering, LEI also performed the following tasks:

- Evaluated the quality of services for Iowa's rate-regulated utilities based on reliability, affordability, and safety metrics at both the state and federal level;
- Conducted three public policy charrettes to solicit and receive input and recommendations from Iowa rate-regulated utilities and other interested parties; and

- Examined rates and tariffs of Iowa's current rate-regulated utilities. This included both a base-rate and total-bill basis for all riders and adjustment clauses.

To perform this Study and review current Iowa Code ratemaking procedures in the context of the HF 617 policy objectives, LEI conducted a thorough review of relevant documents, including relevant statutes, IUB Decisions and Orders, utility annual reports and financial statements, as well as other publicly available reports, websites, and data. The full list of documents consulted is listed in Appendix 10. LEI also met with stakeholders in Des Moines, Iowa, on August 30-31, September 26-27, and November 1, 2023, for three public policy charrettes to discuss the current ratemaking procedures, statutes, and to weigh the pros and cons of reforms and alternative ratemaking mechanisms. These stakeholders included key representatives from the IUB, Iowa's Office of Consumer Advocate ("OCA"), investor-owned utilities ("IOUs"), and industry, consumer, and environmental groups. Additional information about the public policy charrettes is included in Appendix 1.[5]

The terms identified in each of the policy objectives form the basis of the evaluation criteria for the assessment of ratemaking procedures, industry rates, and utility services in the Final Report. LEI used a collaboration of standard industry definitions to evaluate the terms specified in the policy objectives in HF 617 for the analysis required in the Study. The evaluation criteria and their definitions are outlined in Figure 2 below.

[5] Written commentary and parties' positions, recommendations and proposed changes to ratemaking procedures and legislation from stakeholders, and presentations used for reference in the charrette discussions are included in Docket No. NOI-2023-0001 for further reference.

Figure 2. Evaluation criteria from Policy Objectives with standard industry definitions

Reference to Policy Objective	Evaluation criteria	Definition
With respect to utility services:	(1) Safety	"Facilities operate according to safety standards"
	(2) Adequacy	"Utilities generate (provide) enough supply to satisfy demand"
	(3) Reliability	"Continuity of service experienced by retail customers"
	(4) Affordability	"Prices are reasonable in relation to the customers' spending power"
With respect to utility rates:	(5) Nondiscriminatory	"Costs are fairly apportioned among different customers in rate relationships"
	(6) Just and reasonable	"The costs that are recovered are prudently incurred, and rates may not be unreasonably preferential to utility or ratepayer"
	(7) Cost-reflective	"Rates are based on the utility's cost of providing service to its customers within the state"
With respect to current ratemaking laws:	(8) Adequacy	"Regulation effectively addresses procedures with checks and balances for regulator to oversee rates and services of utilities"
	(9) Efficiency	"Clarity and transparency in regulations for regulator to address rates and services in timely manner and with proper implementation of authorities"

Sources: A collaboration of industry definitions – Bonbright, James C. *Principles of Public Utility Rates*. Web. 1961; CERTREC. "NERC Terminology Glossary." Web. Accessed October 4, 2023; EIA. "Glossary." Web. Accessed October 4, 2023; FERC. "Glossary." Web. Accessed October 4, 2023.

1.2 Overview of the report

This report outlines the recommendations from LEI on changes to current Iowa ratemaking procedures, legislation, and mechanisms (see Section 2), following with the key findings and takeaways from each section of the performed analysis (see Section 3). These findings and takeaways for each section are focused summaries of the larger analysis performed during this Study and used to formulate the recommendations, which can be found in the subsequent sections of the report (Sections 4, 5, 6, 7, and 8). Additional information for this analysis, as well as a list of documents consulted for the report, can be found in the Appendices at the conclusion of the report.

2 LEI's recommendations for changes

Based on the analysis performed in the Study, LEI provides the following recommendations on Iowa's ratemaking procedures, legislation, and mechanisms to the IUB:

1. Consider a maximum stay out provision for general rate cases;
2. Enact a statute that requires rate-regulated electric utilities to file an integrated resource plan ("IRP") and gas and water utilities to file long-term supply plans;
3. Align necessity and advantages of advance ratemaking with the resource plan;
4. Review tracker and rider mechanisms for utility operations;
5. Initiate study on evaluating the current spending cap and alternative energy efficiency ("EE") and demand response ("DR") opt-out options; and
6. Examine the implementation of a performance-based regulation ("PBR") framework and various components, which include multi-year rate plans, performance mechanisms (such as scorecards and performance incentive mechanisms), and earnings sharing mechanisms.

2.1 Consider a maximum limit on the amount of time between full general rate cases

Iowa may want to consider introducing a maximum length of time that all rate-regulated utilities can stay out from filing for a rate case as part of the general rate case process. Iowa Legislation does not require the rate-regulated utilities to file rate cases periodically. While this reduces regulatory burden, a more regular rate case proceeding or cost-of-service study would allow the IUB to better ensure that rates charged to customers reflect the utilities' current cost of service and other realities—like changes to the sector in terms of customer mix and load profile, changes in supply (both of energy and of fuel supply, like gas and water for non-electric utilities), infrastructure investments, and new technologies. While this may increase the administrative burden on parties involved in a general rate case, this increase can be managed by the IUB providing advance guidance on the information that must be filed by utilities, or by the IUB creating a system of reporting that permits the utilities to review certain future conditions when they must come in for a rate case (or if an expedited review is applicable in lieu of a full rate case). With a maximum limit on the utilities' ability to stay out from a general rate case process, rate-regulated utilities will have the flexibility to file a rate case when required, but not later than the stay out period cap. As part of this maximum limit on the time between general rate cases, LEI also recommends allowing regulatory staff to submit evidence for these contested case proceedings and cost-of-service studies—as is seen in the peer states of Kansas and South Dakota. This allowance would provide additional resources for the IUB to determine just and reasonable outcomes from the contested proceedings with all necessary and appropriate evidence under consideration. These legislative changes would support the policy objectives of just and reasonable rates and cost-reflective rates.

2.2 Enact a statute that requires rate-regulated electric utilities to file an IRP and gas and water utilities to file long-term supply plans

LEI recommends that the Legislature enact a statute mandating rate-regulated electric utilities periodically submit IRPs to the IUB for review and evaluation. The IRP should also be used as a prerequisite for advance ratemaking principles proceedings, as mentioned in Section 2.3. This

statute should clearly define the parameters of the information required in the IRP, ensuring a comprehensive assessment of the utility's resource planning strategies. These parameters should include, but not be limited to:

1) term covered under an IRP and the frequency of filing;

2) analysis to be performed by the rate-regulated utilities;

3) documents to be included in the IRP;

4) requirement for an update between filings, if any, and frequency of the update;

5) involvement of stakeholders in the process;

6) role of the IUB in the IRP process;

7) whether the IRP should be approved or acknowledged by the IUB; and

8) whether the IRP review is conducted as part of a contested case proceeding.

Regular updates should be mandated to capture evolving market conditions, technological advancements, and policy changes. The IUB and stakeholders should also have the opportunity to participate in the IRP process.

Iowa does not currently have a formal regular resource planning process in place; rate-regulated utilities can choose to file resource plans at their own discretion but are not mandated to do so by law. This absence of compulsory filing of long-term resource plans impedes the IUB's access to vital information essential for informed decision-making (such as in, for example, advance ratemaking proceedings or even in assessing the reasonableness of utility costs and rates discussed as part of the general rate case process). Most jurisdictions, including all five peer states, with vertically integrated utilities have an IRP process in place, benefiting the regulator and stakeholder alike (as discussed in Section 7.2.3). Such a process could provide greater insight into the current status and future needs of the system—in addition to addressing the policy objectives of adequate and reliable service and just and reasonable rates. An IRP process would also encourage the IUB to establish a means of processing and utilizing this information to best advance Iowa's public policy goals. Furthermore, an IRP would require the consideration of EE/DR programs alongside other resource options in short-term and long-term planning, guaranteeing that all potential solutions are given due consideration.

Transmission cost riders have become a significant portion of electric bills for Interstate Power and Light Company ("IPL") and a growing share of MidAmerican Electric Company's ("MidAmerican") electric bills, as discussed in Section 6.1.5.2. LEI recommends including transmission investment and assets (if applicable) in the IRP for rate-regulated utilities to review the costs and benefits of investing in transmission as alternatives or complementary to generation assets to meet the electric needs assessment for reliable and cost-reflective service to ratepayers.

LEI also recommends that rate-regulated gas and water utilities be required to submit long-term plans to the IUB to help stakeholders and customers be informed of projected costs and potential

long-term issues with supply. Currently, rate-regulated gas utilities are required to submit supply plans to the IUB that only cover a 12-month period, while rate-regulated water utilities are not required to file any form of supply plan. LEI recommends that this gas supply plan timeframe be lengthened to allow the IUB and stakeholders to review the long-term supply plans for rate-regulated gas utilities and introduce a supply plan for rate-regulated water utilities. This provides an avenue for evaluating the future infrastructure investments and rate component costs for both gas and water rate-regulated utilities. For example, the Purchase Gas Adjustment ("PGA") is a significant component of gas bills (as discussed in Section 6.2.5.1) that may warrant additional evaluation by the IUB in these long-term supply plan reviews to evaluate the legitimacy of costs incurred by the rate-regulated gas utility. Also, data shows that for the past few years, PGA has increased for all the rate-regulated gas utilities. This warrants a review of the rate-regulated gas utilities' supply.

2.3 Align necessity and advantages of advance ratemaking with resource plan

Advance ratemaking is a mechanism that has generated various benefits to the state since its initial implementation. Initially established in 2001, advance ratemaking helped mitigate regulatory and rate recovery risks associated with investing in renewable generation capacity. By providing certainty around recovery principles for advance ratemaking assets, rate-regulated utilities are compensated for their investment risks. This has allowed Iowa to become a top wind power producer in the nation.

Despite these benefits of advance ratemaking, it is unclear to what extent this mechanism is still necessary today. A primary concern with the advance ratemaking mechanism is that, based on the language provided in Iowa Code, advance ratemaking applications do not have to prove the need for their assets against a set of clear and rigorous eligibility criteria, nor is the process of resource selection subject to a rigorous review standard established by the Code. Based on available 2022 data, Iowa's wind generation alone (without considering other generation resources) is nearly sufficient to meet the state's demand—this may indicate generation overbuild. In comparison, South Dakota also has a majority of its electricity provided by wind generation,[6] yet it does not have advance ratemaking principles in place to incentivize the utilities to build this generation.

Moreover, advance ratemaking resources have historically been granted a higher return on equity ("ROE") than the ROE authorized by the IUB following a general rate case. The risks that may have once justified higher utility compensation may no longer be valid, as the risks associated with infrastructure build-out have been minimized or diminished through technological improvements (and improvements in the economics of renewable resource development) and regulatory certainty. Additionally, technologies eligible for advance ratemaking may now also be eligible for federal tax benefits like those available through the IRA. Consequently, reevaluating the necessity for a higher ROE seems prudent. Alternatively, limiting the types of generating facilities eligible for advance ratemaking principles could be considered.

[6] Per EIA data, in 2022 South Dakota electricity generation consisted of 57.5% wind power.

Finally, LEI has found that some previous advance ratemaking applications have not provided a rigorous analysis of the need for the proposed generation assets despite the mandated requirement from Iowa Code. If advance ratemaking is maintained, LEI recommends changes to the regulatory procedures to ensure alignment between advance ratemaking and other regulatory mechanisms such as an IRP (if such a regulatory mechanism is adopted). Additionally, regulatory practice should require applicants to demonstrate the need and benefits of proposed generation assets for the grid system before receiving advance ratemaking approval, with the utilities providing evidence from an IRP (if adopted) or alternative long-term resource plan to confirm that the proposed asset contributes to the long-term affordability and reliability of Iowa's utility services.

Thus, it may be reasonable to propose amendments to Iowa Legislation that mandate advance ratemaking applications to substantiate the necessity and advantages of the proposed generation assets to the grid system. The criteria for determining this necessity (and determining which technology types should qualify for advance ratemaking) should align with a long-term resource planning process (like an IRP) that provides evidence for the need for the applicant asset as well as its contribution to system reliability. This holistic analysis of advance ratemaking rules and procedures would support the policy objectives of just and reasonable rates, affordable rates (because only assets beneficial to and needed by the system would get built), and reliable service.

2.4 Review trackers and rider mechanisms for utility operations

Over the past decade, trackers and riders have made up an increasing portion of electric, gas, and water rates, as discussed in Section 6. This indicates a greater portion of rate-regulated utility costs are being passed through in the form of the tracker and rider mechanisms than perhaps should be—these costs may be best suited for inclusion in base rates. In such cases, the tracker and rider mechanisms also contribute to the utility's ability to stay out for an extended period of time. It may be the case that some of the trackers in effect in Iowa cover costs that may be under the direct control of utility management (for example, the Renewable Energy Rider ("RER")) and should therefore not warrant classification as a tracker mechanism.

Because the IUB has the authority to ensure that the trackers and riders that are approved are just and reasonable, it can consider exercising this authority to review the current tracker and rider mechanisms in place. Any modifications to the existing trackers and riders would not require statutory changes, and including any requirements for a tracker or rider in statute would limit the IUB's flexibility to address the costs that are proposed to be recovered and to establish criteria for the approved trackers and riders.

Ultimately, evaluating the prudency of the costs paid by ratepayers in the form of the tracker and rider mechanisms will support affordable and just and reasonable rates. Such assessment would also ensure that rate-regulated utilities have the mechanisms to support reliable and safe services. LEI recommends that the IUB does a holistic review of the current trackers and riders to determine whether to keep them "as is" or to modify them for each rate-regulated utility.

2.5 Initiate study on evaluating the current EE/DR spending cap and alternative opt-out options

LEI proposes that the IUB initiate a cost-benefit study evaluating the current spending cap for rate-regulated electric and gas utilities to spend on EE/DR plans and programs. Iowa stakeholders may want to consider taking part in an investigation looking into the reasonableness of the EE/DR spending caps as well as the exemption criteria available to customers. Ultimately, strong EE/DR programs support the policy objectives of affordable rates and reliable services and benefit ratepayers in the longer term in terms of affordability and reliability.

Since the introduction of Senate File ("SF") 2311 in 2018 (which placed a limit on EE/DR spending), EE/DR tracker rates have decreased (as discussed in Appendix 2), indicating that rate-regulated utilities have reduced spending on these programs. Although lower spending on the part of utilities has led to lower rates due to the upfront costs of the programs, ratepayers are also unable to enjoy the potential benefits of EE/DR programs that were not pursued because of the spending cap, such as availability of tools to control energy consumption and lower energy bills resulting from energy savings. The rate-regulated utilities would benefit as well, as reduced ratepayer consumptions would lessen the need for expensive, multi-year, large-scale infrastructure projects to meet increasing peak demand and loads. EE/DR programs are also typically included in resource planning processes to determine least cost options for generation portfolios as opposed to constructing or acquiring additional assets. EE/DR programs are low-hanging fruit to help both customers lower their bills and utilities to minimize costly investments. As such, the Iowa Legislature may find it useful to initiate a study aimed at evaluating the reasonableness of this cap.

In addition to the spending cap, SF 2311 introduced into Iowa Code section 476.6(15) the option for customers to opt-out of any EE or DR program or measure offered by an electric rate-regulated utility if the plan has a cumulative ratepayer impact measure ("RIM") test result of less than one. This exemption policy has the unintended consequence of shifting the costs of EE/DR incurred by the utilities to customers who have not opted out of these programs and measures. This happens because—assuming the costs associated with EE/DR programs and measures incurred by the utilities remain unchanged—these costs for the programs have to be paid by a smaller customer base. This exemption option based on the results of the RIM test is unique to Iowa; peer states have customer-based opt-out requirements (which allow customers to opt-out of participation in EE/DR programs based on demand size or existing EE programs in place, applicable in Missouri), self-direct options for larger customers (which provides customers with high electric demands or gas consumption the option to institute their own EE programs and return funds to the utility provider, applicable in Michigan and Minnesota), or no opt-out option (Kansas and South Dakota).[7] The Iowa Legislature may wish to consider these approaches to the opt-out or others, like changing the cost-effectiveness test used to determine opt-out eligibility or developing other opt-out criteria that better represent the costs and benefits of EE/DR. With that said, LEI recommends analyzing the impact of the opt-out since it has been put into legislation

[7] ACEEE. *Self-Direct and Opt-Out Programs*. Web. July 2022.

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and determining the costs vs. benefits of its impact on EE/DR programs along with the spending cap.

Furthermore, Iowa's regulations currently do not accommodate revenue decoupling or the implementation of a mechanism to address lost revenue for rate-regulated electric and gas utilities. LEI recommends that Iowa explore adopting a revenue decoupling mechanism. In essence, if the mechanism is adopted, the rate-regulated utility's earnings would no longer be intrinsically tied to the quantity of energy it sells. Revenue decoupling offers incentives to rate-regulated utilities to actively support EE and DR programs, which aim to reduce energy consumption, even if it means lower sales for them.[8]

One specific method of achieving decoupling is through a lost revenue adjustment mechanism ("LRAM"). With LRAM, the regulator evaluates the decline in sales attributed to EE programs and computes the marginal revenue loss incurred by the rate-regulated utility due to these initiatives. Subsequently, the utility can recoup the lost revenue by including an LRAM rider on customers' utility bills. This mechanism empowers the utility to recover either a portion or all the revenue lost due to decreased energy consumption, effectively mitigating the adverse financial impact caused by reduced sales. LRAM involves periodic reconciliations between the utility's actual and anticipated revenue (factoring in the effects of EE programs and other influencing factors). Any variance between these figures triggers adjustments in subsequent periods. These adjustments, which could manifest as surcharges or credits, aim to align the revenue with the predetermined targets the utility and regulatory body agreed upon.

The introduction of revenue decoupling carries multiple advantages. It significantly mitigates the risk for rate-regulated utilities associated with encouraging and implementing EE initiatives. This framework enables utilities to confidently invest in EE and DR programs without worrying about potential revenue losses. For customers, participation in EE programs translates to reduced energy costs. Furthermore, these programs grant consumers greater autonomy over their energy usage, offering opportunities to engage in DR programs for additional savings and enhanced control over their utility expenses.

2.6 Examine the implementation of a PBR framework and various components

LEI recommends that the IUB explore the feasibility of adopting PBR ratemaking principles. This exploration could involve establishing a Notice of Inquiry ("NOI") docket to collect insights from stakeholders and facilitate knowledge exchange to determine if PBR is the best approach for ratemaking in Iowa. Depending on the findings of this feasibility analysis, the IUB can request the legislature reform regulations, as needed.

PBRs can be constructed from multiple different approaches in terms of using externally derived index formulas to impose caps (which can either be a rate cap or revenue cap) on rate increases, incentivizing rate-regulated utilities to improve their operational performance and achieve policy goals. The rate of increase is determined by external factors like inflation and industry-wide

[8] Revenue decoupling is considered separate from PBR, as it focuses on adjustments to revenues rather than the rate-regulated utilities' performance. Revenue decoupling can be implemented independently from PBR.

productivity benchmarks. Several states in the US, including Massachusetts and Hawaii, and Canadian provinces (such as Alberta, Ontario, and British Columbia) have implemented this approach, and it is currently under consideration in Connecticut.[9]

PBR, when well-designed, is advantageous and offers many potential benefits to regulators, utilities, and customers, which will address affordability, reliability, and safety aspects of the HF 617 policy objectives. These benefits include superior performance, efficient spending practices, and lower administrative/regulatory costs, as discussed below:

- The most basic well-known benefit of PBR is to drive the utility to improve its performance and make efficiency gains, which leads to lower costs of service and lower rates over time. Utilities are motivated to adopt these improvements because they can benefit by having higher profits for a certain period once they lower their expenses.[10]

- A second and equally important goal of PBR is to promote more innovation and better alignment of rates and policy goals. For example, under a rate or revenue cap, the utility receives an approved budget or allowance for the PBR term and has complete discretion over how to prudently allocate this capped budget/allowance. This implies that the utility can opt to invest in capital, operational expenditures, or a combination of the two solutions that will best serve its customers.

- A significant advantage of PBR is easing the administrative burden, achieved by reducing the need for rate cases, eventually lowering costs for consumers. PBR frameworks are typically expected to lead to an overall decrease in regulatory burden in the long run, primarily due to a reduced frequency of regulatory proceedings (compared to traditional annual or bi-annual rate cases under a cost-of-service approach) and a less meticulous cost review. Additionally, regulators benefit from PBR as it relieves them of the demanding task of micromanaging the utility's activities. For utilities, reduced regulatory micromanagement allows them to focus on managing their businesses cost-effectively and seek efficiency improvements. Ultimately, this translates to lower service costs and lower rates for consumers than they would have been otherwise.

The PBR investigation can be structured into three distinct phases:

Phase 1: Assessment and Exploration

[9] Based on evidence from other jurisdictions, studies on the implementation of PBR ratemaking principles typically are a multi-year process.

[10] For instance, the regulator in Alberta (Canada) issued a report that evaluated its implementation of PBR from 2013 to 2021 (or two PBR regimes). The regulator found that most distribution utilities made superior efficiency improvements. For example, ATCO Electric Ltd. is estimated to have achieved labor savings of CAD $45 million, primarily in the areas of customer accounting and distribution O&M. Likewise, net operating costs at EPCOR Distribution & Transmission Inc. declined, all while customer accounts increased. Source: Alberta Utilities Commission. "Evaluation of Performance-Based Regulation in Alberta." Decision 26356-D01-2021. June 30, 2021.

This initial phase focuses on thoroughly examining the potential benefits and drawbacks of implementing PBR in Iowa. It involves delving into the experiences of other states and jurisdictions that have adopted PBR frameworks, drawing valuable lessons from their successes and challenges. To ensure stakeholders are well-informed about PBR's practical applications, technical workshops can be conducted, providing insights into how PBR has functioned in various environments. The insights gained from Phase 1 will guide the transition to Phase 2.

Phase 2: Defining Goals and Outcomes

In Phase 2, the IUB and stakeholders collaborate to establish clear regulatory goals that will serve as the foundation for a robust PBR framework. These goals should align with the broader objectives of the Iowa energy sector. Next, the IUB and stakeholders will define the specific public outcomes that a PBR framework in Iowa should aim to achieve. This involves evaluating the current regulatory framework and identifying the regulatory mechanisms that can most effectively drive these desired public outcomes.

Phase 3: Mechanism Identification and Design

Building upon the consensus reached in Phase 2, Phase 3 delves into the specific regulatory mechanisms and PBR components that will be employed to achieve the established goals and outcomes. This phase involves a detailed discussion and analysis of various mechanism options, considering their potential impact on energy costs, reliability, efficiency, and other relevant factors. The IUB and stakeholders will carefully evaluate the trade-offs associated with each mechanism option, selecting those that best align with the overall objectives of the PBR framework.

This phased approach allows for a systematic and comprehensive evaluation of PBR's suitability for Iowa's energy landscape. It ensures that stakeholders are actively engaged throughout the process, contributing their expertise and perspectives to shape a PBR framework that effectively serves the interests of Iowa's ratepayers.

PBR includes various components such as the multi-year rate plan ("MRP"), performance mechanisms (which includes scorecards and performance incentive mechanisms ("PIMs")), and earnings sharing mechanisms ("ESM"). In some jurisdictions, such as Minnesota, PBR is implemented gradually, meaning they have started first with implementing an MRP with some performance mechanisms before introducing other revenue adjustment mechanisms. For others like Hawaii and Massachusetts, a comprehensive PBR was introduced right away. LEI recommends that a gradual approach be implemented where MRP and some performance mechanisms be introduced first for a few years before embarking on doing a comprehensive form of PBR. Below is a discussion on these three PBR components.

MRPs

LEI recommends introducing an MRP option for the rate-regulated utilities. A MRP option sets rates for a set term during which time the utility does not file a rate case, in turn reducing regulatory expense and regulatory lag. The different possible configurations of an MRP—such as being set up in multiple test years throughout the multi-year plan can assess rates on an

incremental basis, or crafted with an index-based approach which sets rates based on a single test year and increases rates on a year-to-year basis from a pre-determined and agreed formula—gives both the rate-regulated utilities and the IUB flexibility when initially designing the MRP to ensure future costs reflect actual utility services. The stay out period also incentivizes innovation and efficiency, as revenues (and any incremental tracker mechanism) are set for the duration of the plan; utilities must plan and optimize around these revenues. The MRP—given its multi-year duration—also provides insight into the rate-regulated utility's future spending (i.e., planning). As such, MRPs support the policy objectives of cost-reflective and affordable rates.

In a similar manner to Minnesota, Iowa's legislature can introduce an MRP as an option. The IUB can initiate a docket to define and establish the rules, guidelines, and oversight mechanisms for MRP. Within this docket, stakeholders can engage in discussions regarding the duration of the MRP, the qualifications to be able to file for an MRP, the attrition revenue mechanism[11] that will be utilized under an MRP, and the operating conditions[12] for utilities while under an MRP. LEI acknowledges stakeholders' concerns regarding the implementation of an MRP, particularly stemming from their experience with the future test year process. However, with well-defined parameters in place, the likelihood of unforeseen events occurring can be mitigated. These parameters may include the following:

1) ***Regulatory oversight***: IUB oversees the development and implementation of MRPs and establishes the rules, guidelines, and oversight mechanisms to ensure transparency and compliance;

2) ***Incentivizing cost control***: Within an MRP framework, there are several ways to incentivize rate-regulated utilities to control costs. One way is to design the rate adjustments within the regulatory period through indexes that are exogenous to the utility's actual costs. Another way is to specify the actual dollar amount of allowed revenue changes for each year for the duration of the regulatory period.

3) ***Performance metrics***: Clear and measurable performance metrics are established to assess the rate-regulated utility's performance and ensure accountability. This can include setting targets and providing incentives if achieving the targets and penalties for not meeting them. This is discussed below.

[11] Attrition revenue mechanisms serve to recoup unrecovered costs for a utility based on an approved formula, forecasted revenue requirements, or a hybrid of the two approaches. It is a similar mechanism to an automatic adjustment mechanism but allows a utility to recover costs outside of a general rate case and serves the life of the MRP.

[12] Conditions refer to the operating abilities of the utility and the IUB during the MRP, such as periodic cost-of-service reviews. The conditions may also include pre-agreed performance metrics or parameters that the utility must achieve during the MRP.

4) ***Guardrails***: Mechanisms such as a reopener[13] or an offramp[14] be put in place to protect consumers' interests. These may involve provisions for rate adjustments or rate review if unforeseen circumstances significantly impact customers.

5) ***Reporting requirements***: Rate-regulated utilities are required to provide transparent reporting on their progress with the MRP objectives.

The duration of the MRP regulatory period must strike a balance between competing pressures. While a longer period offers certain benefits, such as motivating utilities to implement performance improvements and further cost reductions, it also carries inherent risks. For instance, extended terms allow utilities to delay their response to changing circumstances. Frequent resets, on the other hand, could disrupt utilities' investment planning. The preferred length of the term may also depend on whether the utility is undertaking a substantial capital program. A shorter term might be necessary to support capital expenditures ("CapEx") related to safety, reliability, and clean energy infrastructure.

Industry experience suggests that an MRP term between 3 to 5 years provides the necessary regulatory stability for companies to make long-term investment decisions while minimizing long-run capital replacement risks. A term shorter than 3 years may not allow utilities sufficient time to achieve their targeted productivity and performance goals. In addition, it will not match the planning horizon for a capital-intensive industry with long lived assets. Ultimately, the proposed docket will provide an opportunity to discuss the MRP term.

PIMs

The data analyzed by LEI indicates that Iowa rate-regulated electric utilities may have room for improvement in terms of reliability and safety performance (Section 8). To this end, LEI recommends two solutions.

In the first, the IUB may choose to consider implementing scorecards[15] that focus on reliability and safety. In the future, LEI recommends that the IUB consider financial incentives through PIMs as part of PBR. Currently, rate-regulated utilities are required to file service reliability metrics indicative of performance: SAIDI, SAIFI, and Momentary Average Interruption Frequency Index per 199 IAC 20.18. However, these filings are simply reported and "shelved," with no targets, incentives, or penalties associated with these metrics. Scorecards would introduce specific reliability, safety, and customer service targets for the utilities to meet; with

[13] A reopener provides an opportunity for the revision or modification of a particular component of the MRP before the end of the MRP term.

[14] An offramp allows for the review and possible termination of the entire MRP plan.

[15] Performance mechanisms consist of three key elements. The first element is the reported metrics where utilities report their performance on agreed-upon metrics without any associated targets or financial consequences. The second element, the scorecard, pairs reported metrics with specific benchmarks or targets. Finally, there are PIMs, which involve financial incentives or penalties tied to a utility's attainment of specific benchmarks or targets, measured by the reported metrics.

PIMs, rate-regulated utilities would be penalized or rewarded for failing to meet or exceeding targets, respectively.

Also, there are currently no tracked metrics related to customer service. While HF 617 may not explicitly include customer service as a highlighted policy goal, it is essential to acknowledge that ensuring exceptional customer service should be an integral aspect of utility services. Incorporating tracked or reported metrics related to customer satisfaction, response times, complaint resolution, and overall service quality, while not directly outlined in the policy, would significantly enhance the accountability and effectiveness of utility services. The IUB could determine, with stakeholder input, what customer service metrics should be monitored. Like with reliability and safety metrics, customer service metrics could eventually be included in scorecards (and potentially PIMs down the road).

To effectively evaluate the adequacy of current service reliability metrics and determine the need for additional ones, the IUB can initiate an NOI docket. This docket will serve as a platform to gather input from stakeholders and conduct a thorough assessment of the following aspects:

1) ***Sufficiency of current reliability and safety metrics***: The participants of the docket will examine whether the existing reliability metrics are sufficient to ensure that utility services meet the highest standards of reliability and safety. This assessment will involve evaluating the effectiveness of these metrics in capturing and measuring key performance indicators related to service outages, restoration times, and overall system reliability.

2) ***Need for new reliability and safety metrics***: Based on the findings of the initial assessment, the IUB and the stakeholders will determine whether additional reliability and safety metrics are necessary to provide a more comprehensive picture of utility performance. This may involve identifying areas where current metrics are lacking or where other operational parameters require additional monitoring.

3) ***Metric classification***: For each identified metric, the IUB, with the help of the stakeholders, will classify it into one of three categories:

    - Track/Report only: Metrics that are tracked and reported only, without any targets to achieve.

    - Scorecard metrics: Metrics that have targets but no rewards or penalties.

    - PIMs: Metrics that have rewards and/or penalties, with higher performance leading to greater rewards and lower performance resulting in penalties.

4) ***Data availability for target setting***: For metrics classified as scorecards or PIMs, the IUB together with the rate-regulated utilities would assess the availability and quality of data needed to establish meaningful performance targets. This may involve evaluating data collection methods, data accuracy, and historical data trends.

5) ***Target setting methodology:*** The IUB, based on the information received from stakeholders, would develop a methodology for setting targets for scorecard and PIM

metrics. This process should consider factors such as historical performance, industry benchmarks, and the potential impact on customer service and costs.

6) ***Incentive and penalty design***: The IUB would design a framework for incentives and/or penalties associated with scorecard and PIM metrics. This framework should be structured to motivate rate-regulated utilities to improve their performance while ensuring that customer interests are protected. The IUB would carefully consider the magnitude of incentives and penalties, ensuring they are proportionate to the potential benefits and costs associated with performance improvements.

ESMs

A PBR can also include ESMs. The National Association of Regulatory Utility Commissioners ("NARUC") states that with an ESM, "the regulator allows the operator to keep some portion of the earnings it receives from the market and requires the operator to give the rest to customers, perhaps through price reductions, refunds, or increased investment."[16] An ESM is designed so that the extraordinary earnings (or losses) are shared between the rate-regulated utility and its customers rather than retained (or absorbed) entirely by the rate-regulated utility, if formula-driven price adjustments result in too wide of divergence between prices and costs. An ESM provides "safeguards" to both customers and the rate-regulated utility, especially in a first-generation PBR plan where there may be uncertainties and unintended consequences for rate-regulated utilities and their customers. An ESM can also be beneficial to a PBR plan because it allows for the sharing of achieved productivity improvements between the rate-regulated utility and customers (ratepayers) every year of the PBR term. Customers do not need to wait until the end of the PBR term and re-setting of rates to benefit from the performance improvements achieved by the rate-regulated utility.

[16] NARUC. *Examples of Earning Sharing Mechanisms in State Utility Commissions.* Web. August 13, 2020.

3 Key findings and takeaways from the performed analyses

3.1 IUB is authorized to regulate the rates and services of investor-owned utilities in Iowa through statute[17]

Based on Iowa Code Chapter 476, the IUB oversees the regulation of the rates and services of IOUs ("rate-regulated utilities") that provide electricity, natural gas (henceforth, "gas"),[18] and water service to customers in Iowa. These rate-regulated utilities include IPL for its electric and gas businesses, MidAmerican for its electric and gas businesses, Black Hills/Iowa Gas Utility Company ("Black Hills") for its gas business, and Iowa-American Water Company ("IAWC") for its water business. The two primary electric utilities, MidAmerican and IPL, are different in their size and customer base with IPL having a more rural customer base. The two also differ in business structure, with IPL not owning its transmission assets. Both MidAmerican and IPL are members of the Midcontinent Independent System Operator ("MISO"), a regional transmission organization ("RTO") that spans many states. MidAmerican is also a participant of the Southwest Power Pool ("SPP"), so LEI includes states with dual RTO participation as another variable for consideration for selecting peer states. The two rate-regulated utilities have approached regulation differently—with MidAmerican choosing to stay out of rate cases for a long period of time and employ a revenue sharing mechanism. Most of the electrical sales go to residential customers in Iowa, while most of the gas sales go to industrial customers. Rate-regulated gas utilities also differ in their structure, with two (IPL and MidAmerican) being dual-service companies offering electric and gas services while one (Black Hills) is a solely gas service distribution company. Additional background and statistics on each rate-regulated utility in Iowa is included in Section 4.

3.2 Current ratemaking procedures, laws, and administrative rules in Iowa give IUB the authority to set "just and reasonable" rates[19]

Utilities are considered "natural monopolies"—firms operating in markets where competition is limited by circumstance rather than as a result of law.[20] This concept of the natural monopoly was first coined by John Stuart Mill in the mid-1800s, who argued that market entry into some industries is curtailed by large capital requirements and that some services could be provided at lower costs if duplicate facilities could be avoided.[21] In such industries, demand is often more cost-effectively and efficiently met by one business than a combination of many smaller businesses. Market competition is limited in such circumstances, and as a result the natural

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[17] A full overview and background of rate-regulated electric, gas, and water utilities in Iowa is provided in Section 4.

[18] Except Amana Society Service Company due to the number of customers it serves.

[19] Full analysis of the current ratemaking procedures, laws, and administrative rules in Iowa is provided in Section 5.

[20] Mill, John Stuart. *Principles of Political Economy with Some of their Applications to Social Philosophy*. London (1875). P. 248.

[21] Ibid; The Regulatory Assistance Project. *Electricity Regulation In the US: A Guide*. Web. March 2011. P. 3-4.

monopoly is able to set output and prices. There is a risk, per economic theory, that a natural monopolist may take action that does not support the public interest or maximize the value of the service to the public. This insight led to the creation of public utility regulators, like the IUB, to oversee and determine rates that intentionally meet public interest.[22]

The regulatory process, when well designed, ensures the provision of reliable electric services at just and reasonable rates. In an effective process, the regulator seeks to find a balance between meeting the interests of ratepayers—in the form of affordable rates and reliable service—and those of the utilities—in the form of cost recovery and allowing for a reasonable return on investments. As such, *regulatory* principles are grounded in the tenets of *rate* design. In his foundational thesis *Principles of Public Utility Rates* published in 1961, James C. Bonbright[23] introduced three core criteria for sound rate design: (1) recovery of total costs of service, (2) pursuit of economic efficiency, and (3) fair allocation of costs among customers based on cost-causation principles. Secondary (or ancillary) criteria include practical attributes, like simplicity, understandability, acceptability, and feasibility of application; uncomplicated in interpretation; revenue and rate stability, and avoidance of "undue discrimination" in rate relationships.[24] Though the term "just and reasonable" is not explicitly defined in Iowa Code, it is assumed to reflect Bonbright's core and ancillary criteria for sound rate design—and it is using these criteria that the IUB reviews the rates of the rate-regulated utilities and ensures the outcomes provided for by Iowa laws and policies.

A high-level evaluation of the current Iowa ratemaking rules and procedures demonstrates that the IUB has a process for reviewing and determining rates. Typically, when a utility seeks to change its base rates and charges, it files an application with the IUB. Under certain circumstances (for example, in response to a written complaint submitted by stakeholders such as the OCA), the law states that the IUB has the authority to initiate a rate case proceeding with a utility if enough evidence suggests that current utility rates are unlawful, although in practice this has not occurred.[25]

There are several ratemaking mechanisms over which the IUB has authority—it is through these mechanisms that the IUB regulates rates and services. Some of these mechanisms are provided for in Iowa law; others are a legacy of policy implemented more than 25 years ago, or a consequence of precedent (arising as a result of past settlements and approved by the IUB). To this end, LEI reviewed five core ratemaking mechanisms in place in Iowa: the general rate case, advance ratemaking, trackers and riders (and other adjustment mechanisms), revenue sharing, and EE and DR. In addition, LEI considered how current procedures have more broadly

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[22] The Regulatory Assistance Project. *Electricity Regulation In the US: A Guide*. Web. March 2011. P. 3-4.

[23] Bonbright was a former professor of finance at Columbia Business School, trustee and chairman of the New York State Power Authority, and contributor to esteemed organizations like the National Association of Regulatory Utility Commissioners.

[24] Bonbright, James C. *Principles of Public Utility Rates*. Web. 1961.

[25] "Unlawful" in application to rates is implied in Iowa Code chapter 476 as being in excess of the rates or charges previously determined by the IUB or in violation of the procedures outlined in Iowa Code chapter 476.

managed long-term resource planning. The IUB's authority to oversee rates and services is primarily accomplished through these five mechanisms. The assessment of "adequacy" consisted of evaluating whether—with appropriate checks and balances provided for in law—the regulator has sufficient authority to oversee utility rates and services. "Efficiency" was assessed based on the outcomes of these five ratemaking mechanisms—namely, by the extent to which the results of implementation of these five ratemaking components aligns with Bonbright regulatory criteria and results in desired outcomes.

3.2.1 Iowa's current ratemaking laws and procedures are generally adequate, but some improvements may be helpful

LEI evaluated current ratemaking laws and procedures with the overarching purpose of utility regulation in mind—that is, whether the regulator has the authority (granted through law) to oversee and ensure that the rate-regulated utilities' services and rates are safe, fair, adequate, affordable, just and reasonable, and balance the interests of utilities, ratepayers, and other stakeholders. Iowa's ratemaking laws and procedures identify the responsibility of the IUB and provide it with the ability to investigate and adjudicate issues brought forth by parties related to services and rates of rate-regulated utilities.[26] While Iowa Code grants the IUB a broad range of authority in the ratemaking process that allows it to adopt rules and programs that further the objectives of HF 617, there is still room to improve on some of the perceived practical limitations around the IUB's ability to regulate the rate-regulated utilities of the state. Areas for improvement identified by LEI are summarized in Figure 3 below and discussed in greater detail in Section 5.

Figure 3. Evaluation of adequacy of Iowa's ratemaking rules and procedures

Ratemaking component	Areas for improvement
General rate case	The IUB has strong authority over proceedings, but is at an informational disadvantage to initiate a general rate case
Advance ratemaking	Relatively weak evidentiary requirements; reduced opportunity for comprehensive cost review
Trackers & riders	The IUB has the authority to accept, reject, or refine trackers & riders proposed by the utilities
Revenue sharing	Safeguards against utility overearning but also allows the utilities to stay out from the general rate case
Energy efficiency/ demand response	Restrictions on cost limit based on annual revenues, preventing more widespread application of EE/DR programs
Resource planning	No such mechanism in place; the IUB lacks information from utilities on long-term resources

[26] The ratemaking process of Iowa and authority of the IUB is similar to what is seen in the peer states analyzed in this Study, but some jurisdictions have more specific regulatory bodies and authorities or use different processes to support the evidentiary record. These similarities and differences between Iowa and peer states are addressed in Section 7.2.

3.2.2 Efficiency of Iowa's ratemaking laws and procedures can be enhanced

LEI assessed the efficiency of the current ratemaking laws and procedures based on how well regulation and ratemaking processes (as a result of laws and statutes) lead to desired outcomes in Iowa. Even though LEI's quantitative review of rates and services indicates generally efficient outcomes, a qualitative review of Iowa Code and Iowa Administrative Code—complemented by feedback provided by the IUB and policy charrette stakeholders—indicates that there are various areas for improvement in Iowa laws and procedures. There are several key reasons for which improvements could benefit regulation in Iowa:

- Laws and policies have become outdated;
- External developments in the electric, gas, and water sectors outside of Iowa (i.e., federal incentives for renewable energy, changes to the strategies surrounding RTOs and transmission infrastructure, etc.)—though independent of laws and policies of the state—still have an impact on Iowa's rate-regulated utilities. Iowa may benefit from introducing regulatory approaches not necessarily needed in the past (like, for instance, an IRP process);
- New regulatory practices (like PBR) are emerging; current laws and procedures could be adjusted to better accommodate such regulatory practices, should they be pursued in the future; and
- More generally, it is good practice for policymakers to periodically review (and potentially update) regulations so that they continue to remain timely and relevant and best serve the interests of the rate-regulated utilities, ratepayers, and state policy.

LEI finds that current ratemaking laws and procedures could lead to more efficient outcomes if additional legislative clarification or, in some cases, modification is provided on the regulator's power to exercise its authorities and responsibilities to meet the objectives of HF 617 and other state policy goals. The areas of improvement for efficiency in the ratemaking laws and procedures identified by LEI are summarized in Figure 4.

Figure 4. Evaluation of efficiency of Iowa's ratemaking rules and procedures

Ratemaking component	Areas for improvement
General rate case	Few rate cases means utility costs may have diverged from rates, which reduces efficient consumption on the part of consumers and efficient operating and investment decisions on the part of the utility
Advance ratemaking	Ratepayers cover the costs of resources for which there is a low bar to demonstrate compliance with statute; utility is not held to a high standard in demonstrating benefit, need, and prudency
Trackers & riders	Trackers & riders that make up majority of costs may dilute cost containment incentives
Revenue sharing	Lower depreciation expense results in lower rates but actual utility costs may have diverged from what is reflected in rates
Energy efficiency/ demand response	More widespread adoption of EE/DR could help lower bills and investment in large-scale infrastructure
Resource planning	Utility long-term plans are unknown

3.3 Rates and tariffs of Iowa rate-regulated utilities[27,28]

LEI analyzed Iowa's electric, gas, and water rates and tariffs from 2013 to 2022,[29] examining trends, drivers, and comparisons among rate-regulated utilities and customer classes. Average electric and water rates in Iowa have generally followed the trend of inflation over time while gas rates have increased in line with commodity costs. Residential electric and gas customers in the state have consistently paid higher rates than commercial and industrial ("C&I") customers, but this is not unique to Iowa as this trend can also be seen in the peer states that were reviewed. Automatic adjustment mechanisms, which include riders and trackers, have been a sizable portion for IPL's average electric rates and increasing share of MidAmerican's average electric rates. For rate-regulated gas utilities, the PGA rider has been a sizeable share of the average gas rates.

3.3.1 Electric rates have generally trended in line with inflation over time

Over the past decade, average electric rates in Iowa have grown at a pace that is consistent with the Consumer Price Index ("CPI" or referred to here as "inflation"), as shown in Figure 5 which documents IPL's and MidAmerican's average electric rates for residential customers. IPL has had

[27] Full analysis of the historical rates and tariffs of Iowa's rate-regulated utilities is provided in Section 6.

[28] LEI did not perform a formal cost benchmarking analysis to compare Iowa's rate-regulated utilities' efficiency to their counterparts in MISO/SPP. This type of in-depth efficiency assessment falls outside LEI's current scope of work. However, if the IUB desires a deeper understanding of the rate-regulated utilities' relative efficiency, a cost benchmarking analysis would be highly valuable.

[29] LEI based its analysis from 2013 to 2022, leveraging the data that rate-regulated utilities provided to the IUB.

and continues to have substantially higher electric rates than MidAmerican across all three customer classes due to its specific circumstances:

- IPL's higher base rates can be attributed primarily to the type of customers that it serves which are mostly in rural areas, and that is very prominent when comparing certain costs related to distribution service.[30] IPL also covers 38,000 square miles in Iowa compared to MidAmerican (10,000 square miles), which means that it needs more investments to serve its customers. These factors contribute to its higher distribution asset costs per customer. Based on LEI's analysis, in 2022, IPL's distribution asset costs $7,706 per customer compared to MidAmerican's $4,711 distribution asset costs per customer.[31] In addition, IPL has higher distribution asset costs per customer than MidAmerican. For instance, in 2022, IPL's total O&M expenses per customer was $2,267.4, which is 76.6% higher than MidAmerican's total O&M expenses per customer at $1,285.2.[32]

- The network integration service rate charged by MISO to MidAmerican is significantly lower (at $2.834/kW-month) than the rate charged to IPL ($11.032/kW-month).[33] This network integration service rate is reflected in the transmission cost rider rate.

- IPL charges a RER to recover costs and tax benefits related to its wind generation facilities that were placed in service in 2019 and 2020. MidAmerican does not charge an RER.[34]

In summary, IPL's average electric rates for all customer types were higher than those of MidAmerican. For residential customers, IPL's average electric rates were higher by about 53.9% as of 2013 and have continued to be higher – in fact, that difference has expanded in recent years to 61.3% by 2022.

Although MidAmerican has not filed an electric rate case since 2013, its electric rates have risen due to its automatic adjustment mechanisms. MidAmerican's electric rates have increased by an average of 2.4% to 4.1% per year for all customer types for the past 10 years. In contrast, IPL's

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[30] IPL's customer density (or the number of customers per square miles that the utility serves) is lower at 13.2 customers per square miles served compared to MidAmerican's 72.0 customers per square miles served in 2022.

[31] LEI calculated the distribution asset costs per customer by looking at IPL's and MidAmerican's FERC Form 1 for 2022 using the Total Distribution Plant End of the Year, which can be found on Page 209, Line 109. Number of customers data is derived from EIA 861 data for 2022.

[32] LEI calculated the total O&M costs per customer using the IPL's and MidAmerican's FERC Form 1 for 2022. For the total O&M costs, LEI used the Total Electric O&M Expenses on Page 323, Line 198. For the number of customers, LEI used the EIA 861 data.

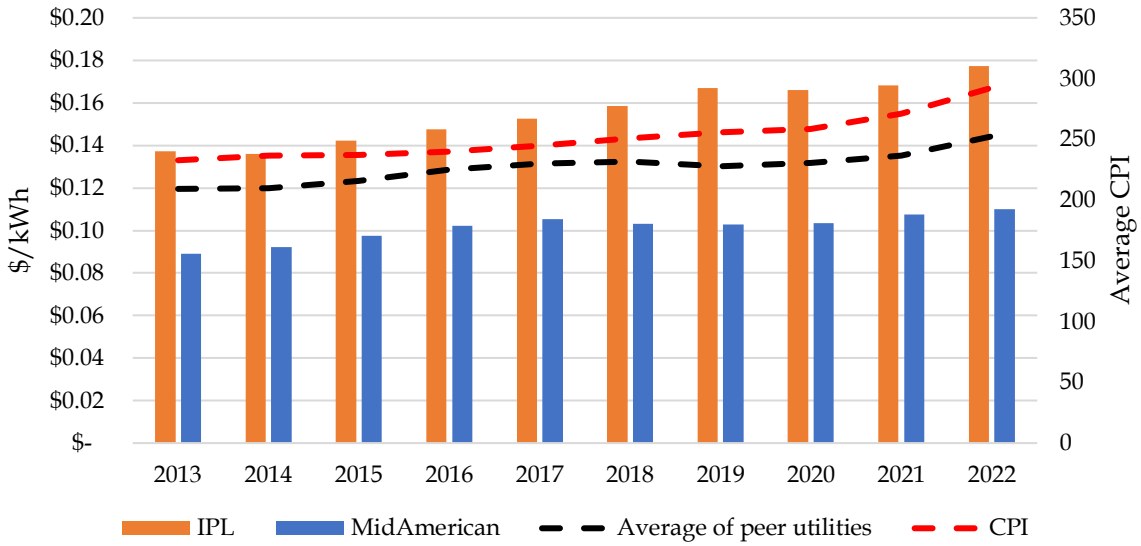
[33] MISO. *Transmission Owner Rate Data*. Web. Accessed November 29, 2023.

[34] As discussed in Section 5.2.2.1, the costs of new wind generation are not yet reflected in MidAmerican's current rate base and will only be reflected once the utility files for a rate case.

electric rates for all customer types have increased by an average of 2.9% to 3.2% per year from 2013 to 2022.

MidAmerican's average electric rates were among the lowest among the peer utilities[35] in the five states examined, whereas IPL's average electric rates (average of residential, commercial, and industrial rates) were slightly higher than the average of the five peer utilities' rates but follow the industry trend (see black dotted line in Figure 3 below). MidAmerican has had lower rates than IPL and the peer rate-regulated utilities in the 2013 to 2022 timeframe due in part to its higher customer density and lower components of revenue requirements per customer.[36] Section 7.3 provides a more detailed discussion on this comparison to other peer utilities.

Figure 5. IPL and MidAmerican's average electric rates for residential customers



Source: IUB, *Utility Annual Reports* (2013-2022).

As mentioned earlier, residential customers of rate-regulated utilities in Iowa have been paying higher average electric rates than C&I customers over the past decade. This relative relationship in rates between different customer classes is also observed across the United States ("US"), where 83% of IOUs have average residential rates exceeding those of commercial and industrial rates.[37] Residential electricity customers face higher rates due to the higher costs associated with

[35] The peer rate-regulated utilities include Evergy Kansas Central, Evergy Kansas South, DTE Electric Company in Michigan, Northern States Power Co. in Minnesota, Union Electric Co. in Missouri, and Northern States Power Co. in South Dakota. This is discussed in detail in Section 7.

[36] See Figure 73.

[37] LEI examined the 2022 average residential, commercial, and industrial electric rates of 182 IOUs using the Energy Information Administration ("EIA") Annual Electric Power Industry Report, Form EIA 861. A total of 151 IOUs have residential rates that are higher than commercial and industrial rates. Additionally, these IOUs'

managing variable demand patterns and distributing electricity to individual households, which frequently requires more investment and higher operations and maintenance ("O&M") expenses due to the loss of economies of scale.

3.3.2 Automatic adjustment mechanisms have been a growing share of the rate-regulated electric utilities' average electric rates

Automatic adjustment mechanisms have been a sizable share of IPL's electric rates for the past decade and have been a growing share of MidAmerican's electric rates in the past few years.

IPL's automatic adjustment mechanisms account for a significant portion of its overall electric rates. In 2022, residential customers paid an average of $0.07/kWh for all trackers and riders, which represents 38.6% of the total average rate of $0.18/kWh, as seen in the last column of Figure 6. IPL's transmission rider (called the Regional Transmission Service or "RTS") and its Energy Adjustment Clause ("EAC")[38] stand out as the biggest contributors among automatic adjustments, but this trend extends beyond IPL, with similar riders forming a major part of rates for the peer rate-regulated utilities:

- IPL's RTS rider accounted for 20.4% of the total electric rate in 2022. The RTS, which is represented by the red bars in Figure 6, allows IPL to recover transmission costs incurred by ITC Midwest and other transmission providers. In the peer rate-regulated utilities reviewed, DTE Electric, Evergy Kansas, and Evergy Kansas South also had their transmission delivery charge rider as the largest rider.[39] DTE Electric also has its transmission serviced by ITC Midwest with costs being passed through its Power Supply Cost Recovery rider. The Evergy utilities include costs for SPP transmission services, which include additional costs above what is typically included in MISO transmission services. This means that this is not a unique case for IPL to have transmission be its most expensive rider.

- The EAC rider stands as another substantial component, making up 13.8% of IPL's overall 2022 residential electric rates. IPL's EAC, depicted by the green bars in Figure 6, covers various expenses such as energy (fuel costs), alternative energy production costs, and rate case expenditures. This trend is not exclusive to IPL (or MidAmerican, as discussed below), as observed in rate-regulated utilities like Union Electric, Northern States Power Minnesota, and Northern States Power South Dakota. LEI similarly found their Fuel and

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average residential rates are higher than commercial and industrial customers by an average of 17.3% and 58.1%, respectively.

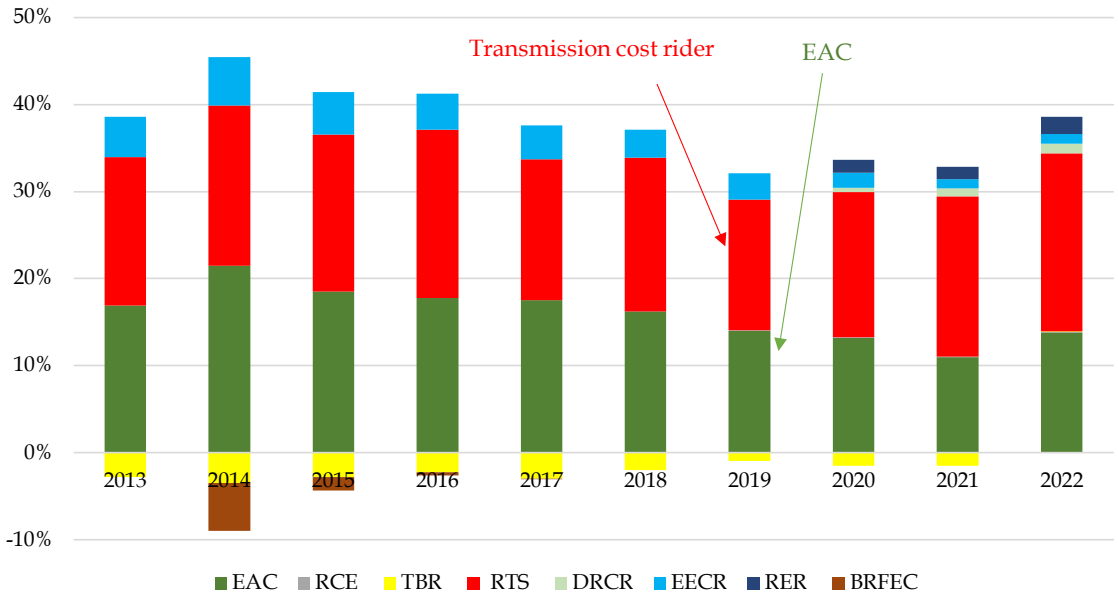
[38] As discussed in Section 6.1.5.1, IPL's EAC is the sum of the following expenses: the energy (fuel) costs, the rate case expense, the alternative energy production clause factor, and the tax benefits. Source: IPL. *Electric Tariff*. Filed with the IUB on November 28, 2022, Docket No. EAC 2022-0150. P. 1.

[39] DTE Electric Company. *Rate Book for Electric Service*. Web. Accessed November 29, 2023; Evergy. *Detailed Tariffs*. Web. Accessed November 29, 2023.

Purchased Power Adjustment Clause contribute the most among their riders and trackers.[40]

MidAmerican's trackers and riders account for a smaller share of its overall residential electric rates, but they have been increasing since 2014, as shown in Figure 7. In 2014, the total trackers and riders of MidAmerican only comprised 2.0% of its total electric rates for residential customers, as shown on the second bar of the graph in Figure 7. By 2022, the share of trackers and riders has increased to 11.7% as illustrated on the last bar of the graph in Figure 7. The largest contributor was the Energy Efficiency Cost Recovery ("EECR") (which is depicted in light blue bars) from 2014 to 2018 but this was overtaken by the EAC (represented in green bars) starting 2019, when MidAmerican's production tax credits ("PTCs") began to expire.[41]

Figure 6. Percentage of total electric rate represented by trackers and riders for a typical IPL residential customer (%)



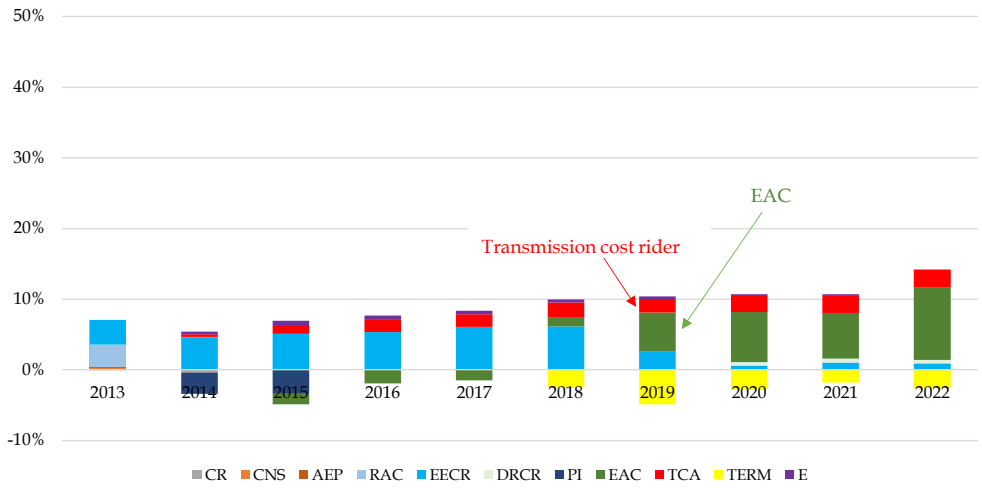
Note: EAC = Energy Adjustment Clause; RCE = Rate Case Expense; TBR = Tax Benefit Rider; RTS = Regional Transmission Service; DRCR = Demand Response Cost Recovery; EECR = Energy Efficiency Cost Recovery; RER = Renewable Energy Rider; BRFEC = Base Rate Freeze Extension Credit Tariff.

Source: LEI's analysis from the data provided by IPL through Docket No. NOI-2023-0001; IUB. Information from Utility Annual Report Filings – Tables 1 and 2. Web. Accessed September 22, 2023.

[40] Union Electric Company. *Electric Rates*. Web. Accessed November 29, 2023; Northern States Power Company. *Minnesota Electric Rate Book - MPUC No. 2*. Web. Accessed November 29, 2023; Northern States Power Company. *South Dakota Electric Rate Book*. Web. Accessed November 29, 2023; and DTE Electric Company. *Rate Book for Electric Service*. Web. Accessed November 29, 2023.

[41] As discussed in Section 6.1.5.1, MidAmerican's EAC includes energy fuel costs, Alternate Energy Production, and PTCs.

Figure 7. Percentage of total electric rate represented by trackers and riders for a typical MidAmerican residential customer (%)



Note: CR = Carbon reduction cost recovery rider; CNS = Cooper Nuclear Station; AEP = Alternate Energy Production; RAC = Revenue Adjustment Clause; EECR = Energy Efficiency Cost Recovery; DRCR = Demand Response Cost Recovery; PI = Phase In; EAC = Energy Adjustment Clause; TCA = Transmission Cost Adjustment; TERM = Tax Expense Revision Mechanism; E=Equalizer Rider; For more information on these trackers and riders, see Section 6.

Sources: Data acquired through a data request response from MidAmerican through Docket No. NOI-2023-0001; IUB. Information from Utility Annual Report Filings – Tables 1 and 2. Web. Accessed September 22, 2023.

3.3.3 Gas rates have risen steadily in tandem with commodity costs over the last 10 years

The trend in average gas rates for the three rate-regulated gas distribution utilities in Iowa has tracked commodity prices over the last 10 years, and that pattern is similar to the rate increases observed for gas distribution utilities in the five peer states. Figure 8 shows the gas rates of Black Hills, IPL, MidAmerican, and the average among the gas distribution utilities in the five peer states (dotted black line), as well as the Henry Hub from 2013 to 2022.

Of the three rate-regulated utilities studied, Black Hills was observed to have the highest average gas rates across all customer groups. Its average gas rates have risen by an average of 7.4%, 10.0%, and 10.2% per year for residential, commercial, and industrial customers, respectively, for the past 10 years. Although these average growth rates are higher than IPL and MidAmerican, they are lower than the average growth of Henry Hub prices, which was 12.8% per year. Black Hills' higher gas rates compared to IPL and MidAmerican are due to several factors. First, Black Hills serves mostly rural areas in Iowa as discussed in Section 4.2.1. According to the classification of the Census Bureau Data, 70.5% of the counties served by Black Hills are considered rural areas.[42,43] This means that most of the areas served by Black Hills have a lower number of customers per

[42] Census Bureau Data. *County-level 2020 Censure Urban and Rural Information for the US, Puerto Rico and Island Areas sorted by state and county FIPs codes*. Web. and IUB. *State of Iowa Natural Gas Operators*. Web. May 28, 2009.

[43] Whereas, MidAmerican's and IPL's service territories serve 56.6% and 66.1% rural areas, respectively.

mile of pipeline (see Section 4.2.3). This requires Black Hills to maintain more gas infrastructure per customer. Black Hills' total distribution expenses per customer in 2022 were 3% higher than MidAmerican and IPL, which means it is more expensive for Black Hills to operate and maintain its distribution infrastructure than the other two rate-regulated utilities studied.[44] Indeed, these costs are reflected in Black Hills' higher monthly service charges compared to the other rate-regulated utilities. Black Hills also has a capital tracker called the System Safety Maintenance Adjustment ("SSMA"), which is specifically for costs associated with safety-regulated gas infrastructure enhancements. MidAmerican has a similar tracker called the Capital Investment Charge ("CIC") although the monthly charge was significantly lower than Black Hills' SSMA. IPL did not have any capital-related tracker. Lastly, Black Hills has other automatic adjustment mechanisms that are not present within the rate design of the other two rate-regulated gas utilities in Iowa that were studied. These include the farm tap tracker[45] and polar vortex recovery.[46] Nevertheless, despite its higher gas rates compared to the other two Iowa rate-regulated utilities studied, Black Hills' average gas rates are in line with the average of the five peer states in most of the years for all customer types, as discussed in Section 7.3.2.

IPL's average gas rates have risen between 4.4% and 5.2% per year over the past decade for all customer types. These average rate increases are in line with the five peer states, as illustrated in Figure 8. This increase is primarily driven by (1) higher base rates (which reflected the cost of investing in new gas distribution infrastructure and increasing safety-driven national mandates),[47] and (2) PGA rate, particularly in recent years. The PGA comprises different components that contribute to the overall cost of gas provided by gas utilities to customers. These include the actual cost of purchasing gas, costs related to the transportation of gas through the pipelines, and storage costs (see Section 6.2.5.1).

MidAmerican has consistently maintained lower gas prices compared to IPL and Black Hills over the last decade (as represented by the blue line in Figure 8), primarily due to economies of scale and its higher proportion of customers in urban areas with higher customer density (which means a greater opportunity to enjoy economies of scale). MidAmerican's larger customer base also translates to lower costs per customer. The presence of these factors has allowed MidAmerican to maintain lower gas rates as compared to its peers in Iowa and even relative to gas distribution utilities in other peer states (represented by the dotted black line in Figure 8).

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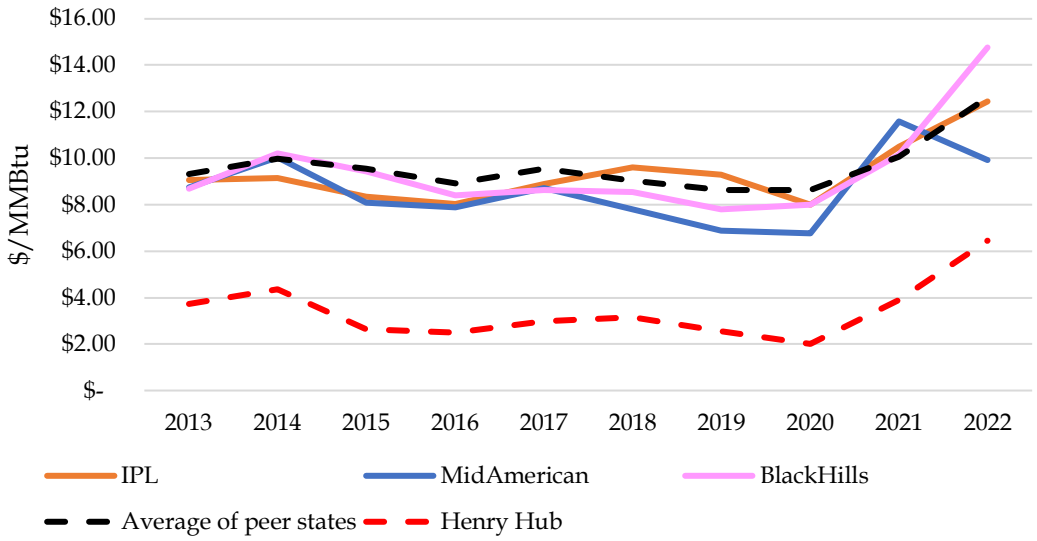
[44] Based on LEI's calculation, Black Hills' total distribution expenses was $86.3 per customer compared to MidAmerican's and IPL's distribution expense of $84.0 and $84.3 per customer, respectively. Source: Black Hills, IPL, and MidAmerican's 2022 FERC Form 2 (for the total distribution expenses) and EIA 861 for the number of customers.

[45] This is a charge to recover Black Hills' cost of testing, line replacement, and acquisition of farm tap customers.

[46] This is a surcharge for the recovery of gas costs related to the Polar Vortex. See Section 6.2.6.2. LEI notes that other rate-regulated gas utilities previously had a polar vortex recover tracker.

[47] Examples of these safety mandates include: the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Hazardous Materials Safety Improvement Act of 2012, and Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016.

Figure 8. Rate-regulated gas utilities' average gas rates for residential customers and average Henry Hub prices ($/MMBtu)



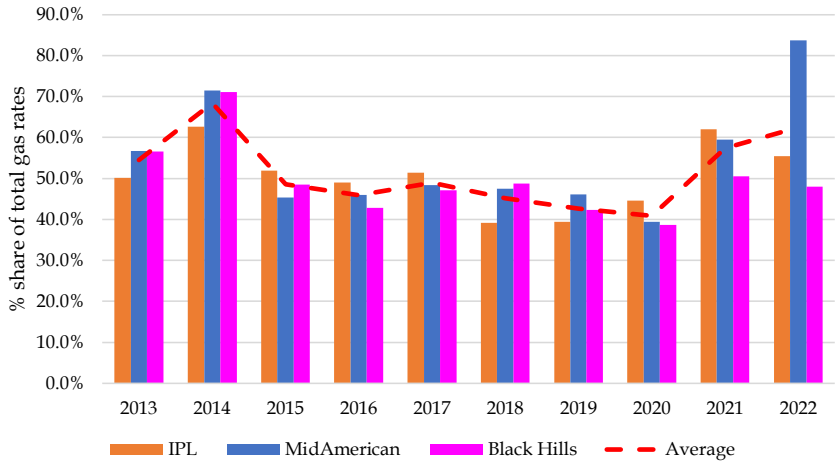
Sources: IUB, *Utility Annual Reports* (2013-2022), S&P Global for the Henry Hub prices, and EIA 861 for the average gas prices of the peers.

3.3.4 The PGA accounts for over 90% of trackers and riders for gas utilities, with an average residential gas rate share of 62.4% in 2022 for all the three rate-regulated utilities

The PGA constitutes a significant portion of the total trackers and riders charged by regulated gas utilities. It is denominated in terms of usage ($/MMBtu or $/therm). As mentioned earlier, the PGA reflects the cost of gas purchased by the utility to fulfill customer needs, including commodity costs, transportation costs, storage costs, and charges associated with maintaining a balance between gas supply and customer demand. Thus, as illustrated in Figure 9, the PGA rates mirrored the fluctuations seen in the average Henry Hub prices.

On average, the PGA makes up over 90% of MidAmerican, and Black Hills' trackers and riders across all customers. Even though the PGA rates across the three Iowa rate-regulated gas utilities were generally close to each other, they were a relatively different share of total average gas rates. In terms of the total average gas rates, the PGA accounts for roughly 55.5%, 83.7%, and 48.0% of the gas rates for residential customers of IPL, MidAmerican, and Black Hills in 2022, respectively, as shown in Figure 9. MidAmerican has the highest share of the PGA in its total average gas rates compared to IPL and Black Hills because its base rates for residential customers were low and its other gas rider, the EECR, had decreased significantly since 2019, as discussed in Section 10.1.

Figure 9. Share of PGA to the residential customers' gas rates (%)



Sources: IUB, *Utility Annual Reports* (2013-2022).

3.3.5 IAWC's modest water rate increases over the past decade stem from incremental base rate increases and the absence of capital tracker charges

As discussed in Section 6.3, IAWC has a dual rate design where it has a fixed rate called the water service charge and a volumetric rate or the water usage charge. These two charges make up the water base rate. This is a common rate design for water utilities. Water service charges remained the same across all meter sizes for the last five years. Unlike electric and gas utilities, water service charges are also the same across all customer classes. Likewise, monthly usage charges are the same across customer categories (residential, commercial, and industrial) but vary by consumption segment.

In the past ten years, the lowest consumption group (0 to 224 gallons) was charged the highest rate. This pricing structure, known as the declining block pricing, where the unit price of each succeeding block of usage is charged at a lower unit rate than the previous block is not uncommon. Other water utilities also apply this rate structure, because of the observed patterns of consumption and cost causation.[48] Smaller customers are observed to have greater peaking (capacity or demand) factors than larger customers.[49] As a result, a water utility typically faces higher unit costs to meet the peaking requirements of these smaller customers, relative to the

[48] Some other US cities, such as Philadelphia, Cincinnati, and Columbus are using this declining block pricing structure. *See* Stantec. New York City Department of Environmental Protection. *BEPA-SRSA Comparative Rate Structure Analysis Final Report.* August 4, 2021. P. 40, and Black & Veatch. *Alternative Rate Structure Analysis*. November 6, 2019. P. 10.

[49] American Water Works Association, *Principles of Water – Rates, Fees, and Charges*. 2017. P. 117.

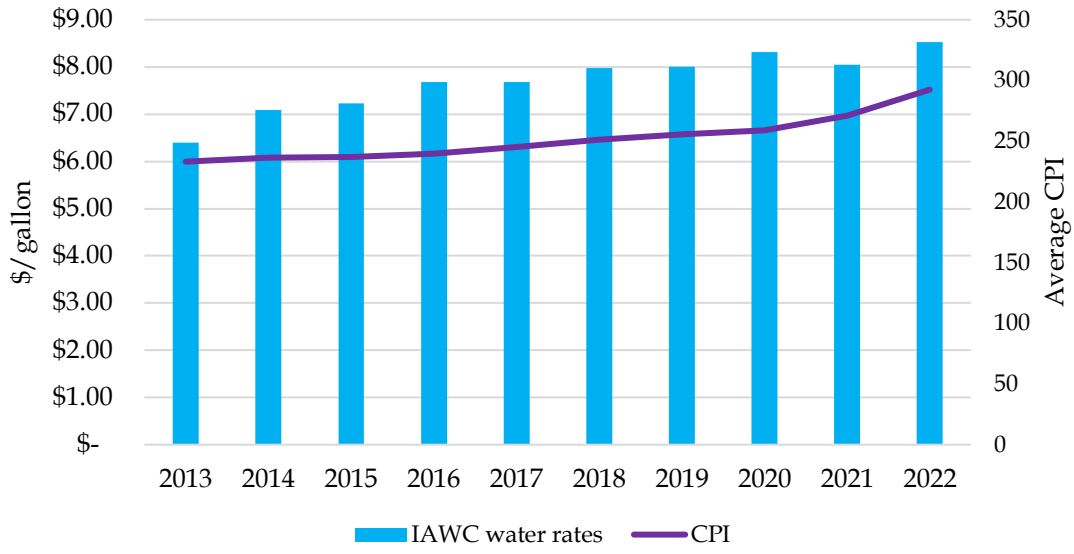
larger customers.[50] In addition, certain economies of scale[51] may be achieved with increased consumption and therefore, these cost savings are reflected within the rates.

IAWC also implements a Qualified Infrastructure Plant ("QIP") Surcharge, a capital tracker specifically designed to cover costs associated with infrastructure replacements. Customers have not been charged this fee since 2018 due to offsets with the Federal Tax Cuts and Jobs Act.

Over the past decade, IAWC's customers have seen their rates go up by 3.3% per year on average, primarily driven by some adjustments in water usage charges alongside increases in water service charges in the earlier part of the decade. Average water rate increases over the last 10 years have generally trended in line with inflation, as shown in Figure 10.

Water rates charged by IAWC were higher than those of the two other private water companies and three municipal water systems in the peer states, with a noticeable difference between the rates of rate-regulated utilities and municipal water systems; private water companies make greater investments in infrastructure to maintain reliable and safe services, which municipal water systems cannot match.[52] This is discussed in Section 7.

Figure 10. Average water rates for IAWC ($/gallon) relative to inflation



Source: IUB, *Utility Annual Reports* (2013-2022).

[50] Ibid.

[51] These economies of scale are primarily realized through improved capacity utilization of existing infrastructure.

[52] Zhang et al. "Water pricing and affordability in the US: public vs. private ownership." *Water Policy (2022) 24 (3)*. World Water Council. March 17, 2022.

3.4 Ratemaking legislation, procedures, and mechanisms in peer MISO/SPP states[53]

LEI reviewed the ratemaking procedures and utility rates in five states in the MISO and SPP regions in order to ascertain trends outside of Iowa. Kansas, Michigan, Minnesota, Missouri, and South Dakota were chosen for this analysis (referred to in this document as "peer states"). LEI selected these states based on similarities to Iowa in terms of demographics (population), similarity in size (proxied by installed generating capacity), composition of generation fleet (presence of wind generation in the fleet of the regulated utilities), and consumer profile (relative size of C&I loads).

LEI began by reviewing and comparing the ratemaking procedures, and regulatory mechanisms across the five peer states and Iowa. Next, LEI compared the peer states' electric, gas, and water rates to the rates of the respective Iowa utilities in each sector. Finally, LEI compared the quality of Iowa's utility services against those of select peer states' utilities to assess the affordability, reliability, and safety of the utilities, with an overall comparison of Iowa's performance relative to the peer states.

3.4.1 Iowa and the peer states have generally similar regulatory authority and ratemaking processes but varying practices

Similarities between Iowa and the peer states regarding the ratemaking process include the role of the regulatory commission in ensuring safe and reliable utility services at just and reasonable rates. The regulatory commissions also oversee the ratemaking process to make a final decision. Municipal utilities and cooperatives are excluded from rate regulation in all peer states. Like Iowa, the regulators in Kansas and Missouri regulate the rates of electric, gas, and water utilities. The regulators of Michigan, Minnesota, and South Dakota only regulate the rates of electric and gas utilities.

At the highest level, the ratemaking process is similar in that the regulated utilities apply for a rate increase, and the state regulator decides whether to approve the rate application.[54] The differences lie with practical aspects of regulation. For example, some states allow regulatory staff to prepare and file evidence in rate cases, and other states use administrative law judges ("ALJs"), as explained further below. In addition, LEI observed a difference in the cadence of rate cases in some of the other states. The frequency of electric rate cases in Iowa is similar to that of South Dakota, where rate-regulated utilities file rate cases less frequently than the utilities of the other peer states. Specifically, electric utilities in Kansas, Michigan, Minnesota, and Missouri tend to

[53] Full analysis and review of the ratemaking legislation, procedures, ad mechanisms in other selected MISO/SPP states and its comparison to Iowa is provided in Section 7.

[54] LEI found that all peer states examined allow the use of trackers and riders for utilities to recover certain costs, with some states offering more opportunities than what exists in Iowa currently. The exact structure of trackers and riders varies amongst the peer states and their respective utilities, so while the use of the basic mechanism is the same, there are still differences in its overall application.

file general rate cases every two or three years.[55] The frequency of gas and water rate cases in Iowa aligns with the peer states, in that these occur more often than for the electric utilities.[56]

LEI identified some practical differences in the functional process of the regulators in other states. Michigan and Minnesota employ ALJs to provide a report on the general rate case ruling during the proceeding to the regulator. This report includes a proposed decision for the regulator to review before ruling on the final rate case decision. This additional review step in the rate case proceeding is a unique feature not observed in Iowa or the other peer states. An additional difference in Kansas and South Dakota is the ability for Commission staff to submit evidence in a contested proceeding to be considered by the Commission in its review for final decision. The Commission in these states does not have to rely on the utility or intervenors to submit all the key evidence required for review in such proceedings but can essentially provide its own evidence to assist in its ruling.

A final key difference between Iowa and most other peer states is the use of advance ratemaking. In order to increase the amount of renewable generation in Iowa (and incentivize conversion of coal-fired plants to natural gas), advance ratemaking principles were introduced by way of legislation in 2001. Of the peer states, only Kansas employs similar legislation regarding nuclear generation facilities; no other peer state has codified advance ratemaking principles in legislation. Michigan, Minnesota, and Missouri have renewable energy standards in place for the requirement of electricity sales and production to come from renewable energy—a tool for indirectly incentivizing renewable investment in each of these states without the use of advance ratemaking principles.

3.4.2 Peer states implement ratemaking mechanisms that are not currently implemented in Iowa

Iowa does not have a legislatively mandated IRP requirement for electric utilities. In contrast, all five peer states that LEI reviewed have some form of integrated resource planning that is statutorily mandated, the results of which are required to be filed with the state regulator. The IRPs are reviewed and then approved by the regulator to ensure that the resource plans are in the best interest of customers. Some states, such as Minnesota, require the IRP to be aligned with statewide energy targets and renewable energy goals. The IRPs range in scope from 10 to 20 years and are submitted to the regulator every two or three years. In all states, the developed IRP is not directly required by law to be included in the rate case process but can be referenced for the proposed generation assets included in the overall rate base to confirm the prudency of assets.

[55] The latest electric rate case for IPL was filed in 2023 with the previous one being in 2019 (four years apart). The last electric rate case for MidAmerican was filed in 2013. Northern States Power Company of South Dakota filed an electric rate case in 2023 with the previous one filed in 2015.

[56] As of 2023, IPL and MidAmerican both have a pending gas rate case filed. Prior to that, the previous gas rate case for IPL was filed in 2019. For water utilities, the latest rate case of IAWC was filed in 2020.

LEI observed that one peer state—Minnesota—has implemented a MRP and PIMs. MRPs and PIMs are elements of a PBR framework for ratemaking procedures. Minnesota legislation directed the state regulator to consider such a regulation framework in 2019.[57]

Another ratemaking mechanism that is considered by regulators to be a form of PBR is ESMs. ESM is a form of hybrid regulation that allows the utility to keep some of its revenues and return excess revenues (defined by a pre-agreed level) to its customers.[58] This pre-agreed level can vary, for example symmetric sharing between the utility and its customers or defined ranges around allowed ROE levels for the utility to trigger sharing. ESMs are not uncommon but are not currently in place among utilities in the peer states. ESMs are similar conceptually to the revenue sharing mechanism that MidAmerican currently uses. Revenue sharing is utilized in Iowa as a result of a Settlement Agreement and not legislation—and it has been revisited and revised over the years as part of MidAmerican's advance ratemaking and general rate case proceedings. At the moment, Iowa's revenue sharing mechanism does not issue any credits or refunds to customers directly. South Dakota has adopted revenue sharing mechanisms. In contrast to Iowa, South Dakota has multiple utilities that employ a revenue sharing mechanism using fuel and purchased power adjustment clauses and return of revenues associated with new load growth or generation facilities in the form of customer credits.[59] This is more in line with a traditional ESM than what is used in Iowa.

3.5 Evaluating rate-regulated utilities' performance relative to the policy objectives[60]

3.5.1 Iowa's electric sector is improving in reliability, yet faces affordability challenges while maintaining safety records on par with peer states

Iowa's electric sector has shown a consistent improvement in reliability from 2013 to 2022, as evidenced by declining System Average Interruption Duration Index ("SAIDI"), System Average Interruption Frequency Index ("SAIFI"), and Customer Average Interruption Duration Index ("CAIDI") indices, which are described in detail in Section 8.1.1 of the report. MidAmerican's performance has been consistently above average when compared to the peer states. IPL presents below average reliability compared to the peer states but has shown improvement over recent years. Between 2013 and 2022, both MidAmerican and IPL outperformed the national reliability averages. MidAmerican's SAIDI, SAIFI, and CAIDI numbers were 91.9, 0.92, and 100.13 respectively, while IPL's figures were 113.17, 1.13, and 100.63, all of which are favorable compared to the national averages of 136.23, 1.25, and 120.48. Comparing MidAmerican and IPL, particularly in rural and urban areas, unveils distinct patterns. In rural regions, IPL exhibits lower SAIDI and SAIFI than MidAmerican, suggesting fewer and shorter service interruptions. In urban

[57] NARUC. *State Commission Staff Surge Call: Performance-Based Regulation*. March 25, 2019.

[58] Costello, Ken. *Multiyear Rate Plans and the Public Interest.* National Regulatory Research Institute. October 2016.

[59] S&P Global. *RRA Regulatory Focus Adjustment Clauses.* November 12, 2019.

[60] Full analysis and assessment of the performance of rate-regulated utilities relative to the policy objectives for utility services is provided in Section 8.

areas, MidAmerican overall shows a stronger performance. However, IPL has made significant strides in reducing the average length of interruptions, as reflected by its CAIDI figures.[61]

Although electric rates have increased in line with inflation, affordability challenges are emerging for electricity service in Iowa, as evidenced by the rising trend in disconnection notices post-2020. Energy bills are a significant portion of annual income for low-income households, placing Iowa in the middle range of affordability compared to peer states according to a study by the Home Energy Affordability Gap ("HEAG").[62]

Iowa's electric utilities demonstrated a generally strong safety record, with a gradual decline in fatal injuries. Despite an increase in safety rule violations and contact accidents[63] around 2020 as reported in IUB annual reports, the non-fatal incident rates for all Iowa electric utilities align with peer state averages as derived from US Bureau of Labor Statistics ("BLS") data.[64]

3.5.2 Iowa's gas sector exhibits commendable reliability, affordability, and safety

The gas rate-regulated utilities in Iowa have managed service interruptions well, indicating reliable services despite some operational challenges. Overall, the sector does not show a systemic increase in incidents, highlighting a stable reliability landscape. In Iowa, there were no documented pipeline failures, a notable contrast to incidents in peer states such as Missouri, Minnesota, South Dakota, and Kansas based on reports from the Pipeline and Hazardous Materials Safety Administration ("PHMSA").[65]

Affordability concerns for some gas customers in Iowa have emerged recently, as evidenced by a rise in disconnection notices post-2020, though the rate remains below 5%, which is similar to the rate in other peer states.[66]

The safety record in Iowa's gas utility industry is robust, with few major incidents reported. Compliance with safety standards is high, and Iowa compares favorably to peer states in terms of pipeline safety, reflecting effective regulatory oversight, and safety practices, as indicated by PHMSA data.[67]

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[61] The review of these metrics for IPL and MidAmerican in rural and urban values can be found in Appendix 9.

[62] Fisher, Sheehan, and Colton. *Home Energy Affordability Gap.* Web. Accessed November 6, 2023.

[63] Contact accidents are defined as injuries resulting from contact with electric lines.

[64] US Bureau of Labor Statistics, US Department of State.

[65] PHMSA. *Pipeline Failure Investigation Reports.* December 13, 2021.

[66] Center for Biological Diversity, Energy and Policy institute, and BailoutWatch. *Powerless in the United States*. Web. Accessed October 30, 2023.

[67] PHMSA. *Pipeline Incident Flagged Files from 2010 to Present.* Web. November 6, 2023.

3.5.3 IAWC displays above average reliability and safety, but faces affordability issues

Iowa's rate-regulated water utility has performed well in terms of reliability, with fewer violations of Environmental Protection Agency ("EPA") drinking water standards compared to rate-regulated water utilities in peer states.[68] IAWC's robust performance becomes particularly notable, when contrasted with states like Michigan, affected by crises like the Flint water issue (understanding that this is an extreme case). This may be due in part to IAWC having the financial resources to invest in maintaining reliable services, relative to municipal water systems, but the reliability of IAWC is higher than peer rate-regulated utilities which should have the same financial ability.

Affordability is a growing concern in Iowa's water sector. IAWC's data reveals fluctuations in residential disconnections,[69] with a significant increase post-2020, suggesting financial strain for customers. This trend is mirrored in the Nicholas Institute's 2023 study,[70] which indicates that Iowa's water affordability challenges are slightly higher than the peer average.

LEI did not find any major safety incidents reported for IAWC from 2013 to 2022, and there were minimal EPA violations. Water quality data published by the EPA show contaminant levels were well below federal guidelines,[71] reflecting the sector's strong commitment to safety and regulatory compliance, and positioning Iowa ahead of many peer states in ensuring safe water services.

[68] EPA. *ECHO tool.* Web. Accessed October 27, 2023.

[69] IAWC must give advance notice of outstanding bill charges 12 days prior to shutting off water service. If the outstanding charges are not paid in full after notice is given, then IAWC disconnects service to the customer.

[70] Nicholas Institute for Energy, Environment & Sustainability. *Affordability of Household Water Services Across the United States.* Web. Accessed November 29, 2023.

[71] EPA. *Detailed Facility Report – Iowa-American Water Company*. Web. Accessed November 10, 2023.

4 Overview of the Iowa rate-regulated industries

Key findings

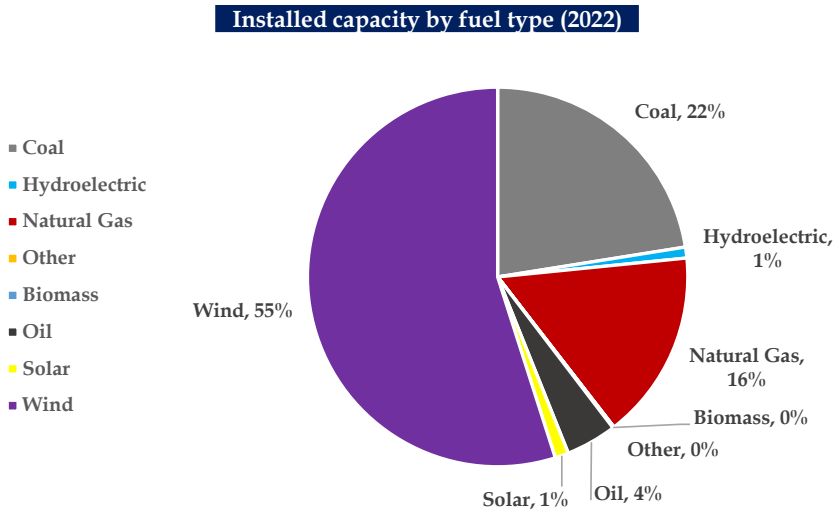
- The IUB regulates the rate and services of certain IOUs that provide electricity, gas, and water to customers in Iowa. It does not regulate the rates of municipal utilities and electric cooperatives.
- Electric generation installed capacity in Iowa is dominated by wind, gas, and coal resources. Rate-regulated utilities make up 82.4% of the electricity sales in Iowa.
- Both MidAmerican and IPL are members of MISO, while MidAmerican is also a member of SPP. MidAmerican owns its transmission network, while IPL uses the transmission service of ITC Midwest to serve its customers.
- MidAmerican's fuel mix is dominated by wind at 62%, while IPL's largest resource type within its fuel mix is natural gas at 46%.
- Residential customers are the majority of both MidAmerican and IPL, comprising 86% and 82.6% of total customers respectively.
- MidAmerican has more customers and electric sales than IPL, but based on the service territory covered, IPL has a more rural customer base compared to MidAmerican.
- The IUB regulates the rates and services of four gas utilities in Iowa, with most of the sales going to the residential sector.
- The largest gas utility in terms of coverage and number of customers is MidAmerican.
- Only one water utility is rate-regulated (IAWC); most customers in Iowa are served by municipal-owned water utilities.

4.1 The electric industry is dominated by two rate-regulated utilities

Electric generation in the state includes over 22.6 GW of installed capacity as of 2022, with wind being the dominant generation fuel/technology. As of 2022, wind generation capacity comprised 55%, gas-fired generation was 22%, and coal made up 16%. A snapshot of Iowa's key electricity statistics is illustrated in Figure 11.

Figure 11. Snapshot of Iowa's electric profile

Key facts (2022)	
Installed capacity (MW)	22,546
Generation (GWh)	72,982
Demand (TWh)	54.2
Transmission lines (miles)	26,611
Distribution lines (miles)	25,400
Population	3,200,517
Population density (ppl/ sq mile)	57.9



Source: EIA. *Form 861*. Web. Accessed November 1, 2023.

4.1.1 MidAmerican and IPL together provide a majority of the electricity sales in Iowa

In Iowa, there are 181 electric utilities, of which two are rate-regulated utilities, 136 are municipal-owned utilities, and 43 are rural electric cooperatives ("RECs"). The IUB regulates the rates and services of the two rate-regulated utilities (IPL and MidAmerican).[72] MidAmerican is a vertically integrated utility that has its own generation, transmission, and distribution operations. IPL does not own its transmission capability but does provide generation and distribution services to its customers.[73] The two rate-regulated utilities, along with Amana Society Service Company,[74]

[72] IUB. *Jurisdiction & Regulatory Authority of the Iowa Utilities Board*. Web. Accessed November 14, 2023.

[73] IPL formerly owned and operated its own transmission but sold all these transmission assets to ITC Midwest in 2007.

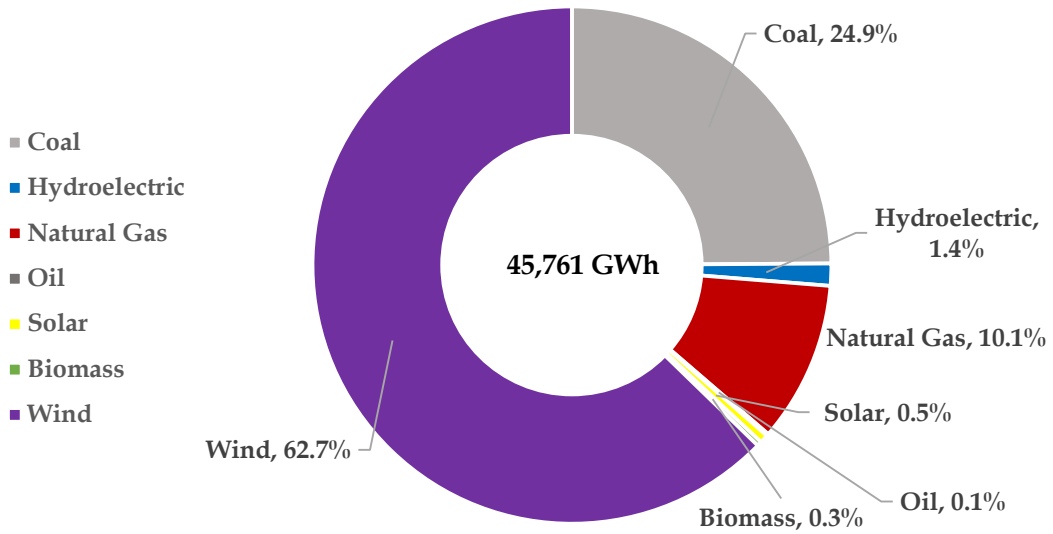
[74] Per IUB's website on Iowa electric profile, Amana Society Service Company is an IOU, but it is not rate-regulated due to the number of customers it serves.

provide 82.4% of the electricity sales in Iowa, while the municipal-owned utilities provide 7.6% and the RECs provide 9.97% of the electricity sales to customers in Iowa. The IUB has limited regulatory authority over the municipal-owned utilities and RECs; it only oversees their safety standards and engineering practices.

4.1.2 Generation, transmission, and distribution

In terms of generation, 62.7% of Iowa's total electricity generation in 2022 was from wind (see Figure 12). This is followed by coal at 24.9% and natural gas at 10.1%.

Figure 12. Generation in Iowa (2022)



Source: EIA. *Form 861.* Web. Accessed November 1, 2023.

Per IUB regulations, any electric transmission line 69 kilovolts or above that is located outside of the corporate limits of a city must have a franchise from the IUB before it can be built. The transmission line company must obtain necessary rights from the owner of the land if it wishes to construct the line on private property.[75]

Both IPL and MidAmerican own distribution lines and substations to provide electricity to their customers in Iowa. Other customers in Iowa are served by distribution lines owned by municipal-owned utilities or RECs.[76]

[75] IUB. *Electric Transmission Line Franchise Process.* Web. Accessed November 18, 2023.

[76] IUB. *On-site (Distributed) Generation.* Web. Accessed November 21, 2023.

4.1.3 Both MidAmerican and IPL provide electric and gas services to a diverse mix of Iowa customers

MidAmerican, a subsidiary of Berkshire Hathaway Energy, operates from its headquarters in Iowa, extending its utility services across various states. The company serves a substantial customer base, in Iowa, Illinois, and South Dakota regions. MidAmerican boasts a diverse customer base, approximately 47% of which are residential customers, with the majority (76%) based in Iowa. In Iowa, MidAmerican provides electric services to an estimated 722,142 customers and gas services to an estimated 611,419 customers.[77]

MidAmerican provides electric services—including electricity generation, transmission, distribution, and sales services—to 51 counties in the State. Its customer mix comprises 86% residential, 12% commercial, 0.25% industrial, and 2% classified as other.[78] MidAmerican has made significant capital investments in Iowa to create a diverse portfolio of electricity-generating facilities, with the company currently having ownership interest in 53 plants: 32 wind, 7 natural gas, 6 coal, 6 solar, 1 nuclear, and 1 hydroelectric.[79] The company's total generating capacity in Iowa surpasses 11,000 MW (see Figure 13).[80] MidAmerican's electric portfolio also consists of 4,600 circuit miles of transmission lines, 25,400 circuit miles of distribution lines, and 345 substations as of the end of 2022.[81] MidAmerican participates in the MISO capacity, energy, and ancillary services markets as a transmission-owning member and operates its transmission assets at the direction of MISO.[82] MidAmerican is also an asset-owning market participant in SPP's Integrated Marketplace, meaning it represents both load and generation in the marketplace.[83]

IPL, a subsidiary of Alliant Energy Corporation, is a public utility entity primarily focused on generating and distributing electricity and distributing and transporting gas in Iowa. As of 2022, IPL serves approximately 498,046 electric and 226,146 gas retail customers in Iowa.[84] IPL provides electric services to 75 counties in Iowa and sells electricity to retail and wholesale customers, with

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[77] Iowa customer base estimated using total electricity and gas customer base of 800,000 each and multiplying by percentage of resources sold to Iowa (92% of electricity and 76% of gas). These numbers are from Ibid.

[78] Ibid.

[79] Ibid.

[80] MidAmerican Energy Company. *2022 Annual Report*. February 2023.

[81] Ibid. Note that transmission/distribution line infrastructure information is for all four states covered by MidAmerican, Iowa specific information is not available for this.

[82] MidAmerican Energy Company. *2022 Annual Report*. February 2023.

[83] SPP. "Members & Market Participants." Web. Accessed November 2, 2023.

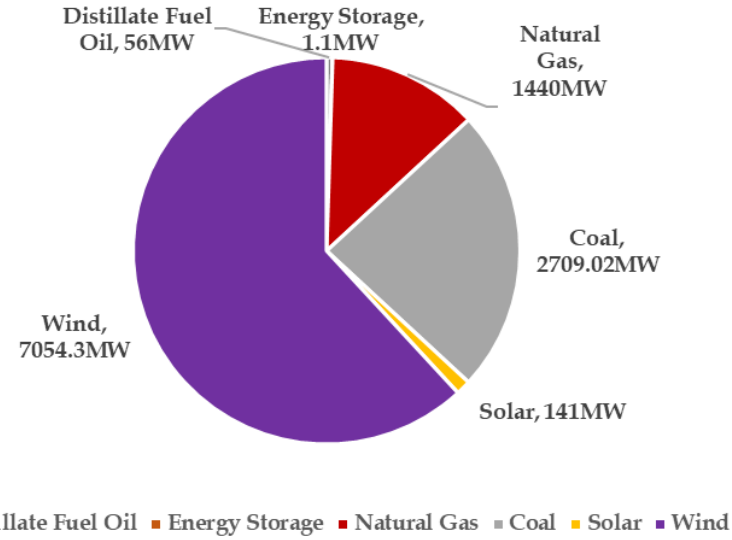
[84] Alliant Energy. *2022 Annual Report*. March 2023.

the retail customers operating primarily in the farming, agriculture, manufacturing, packaging, and food industries.[85]

Alliant Energy Corporation's assets include a portfolio of electric generating units across Iowa, Wisconsin, and Minnesota. IPL's portfolio (Iowa only) features a blend of gas, renewable resources, and coal at a combined capacity of 4,123.6 MW (see Figure 14). IPL owns 22 power plants: 1 gas plant, 7 wind plants, 6 coal plants, 1 oil plant, and 2 solar plants. IPL does not own its own transmission assets as it transferred 6,800 miles of transmission lines and related assets to ITC Midwest in 2007.[86]

IPL and MidAmerican together provide 56.6% of the total electricity generation (GWh) sold in Iowa, while owning a combined total of 69% of the installed capacity (MW) in the state in 2022. The composition of their installed capacity mix is different. IPL's installed capacity is dominated by natural gas at 46%, followed by wind at 35% and coal at 16%. On the other hand, the installed capacity of MidAmerican is dominated by wind at 62%, followed by coal at 23% and natural gas at 13%.

Figure 13. Installed capacity of MidAmerican (2022)

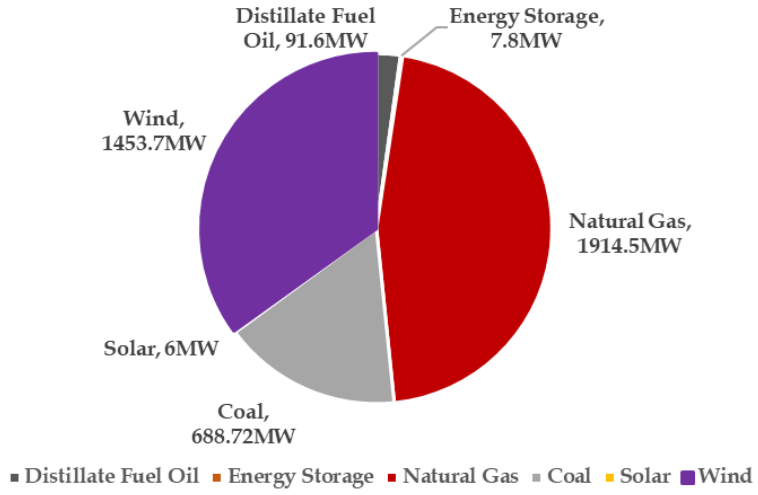


Source: EIA. *Form 861.* Web. Accessed November 1, 2023.

[85] Ibid.

[86] Power Grid International. *Interstate Power and Light closes transmission assets sales with ITC Midwest.* December 21, 2007.

Figure 14. Installed capacity of IPL (2022)



Source: EIA. *Form 861.* Web. Accessed November 1, 2023.

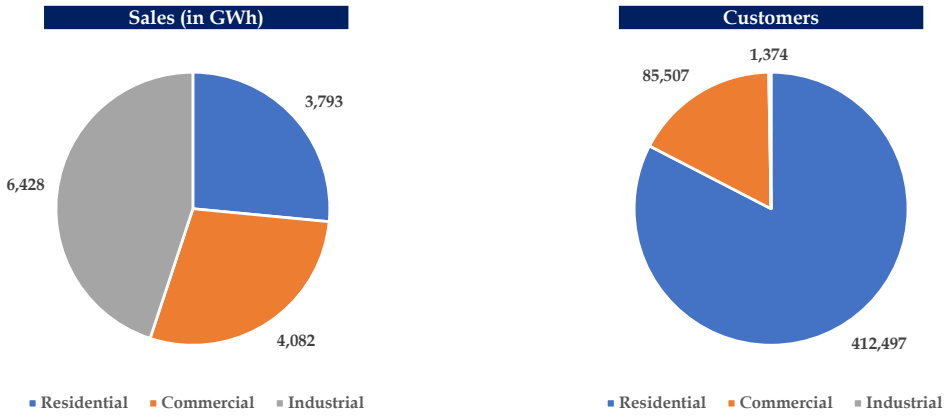
Residential customers constitute a majority of both rate-regulated utilities' customers, making up 82.6% and 86.0% of IPL and MidAmerican's customers, respectively. In terms of sales, industrial customers constitute a majority of the utilities' sales, making up 44.9% and 58.2% of IPL and MidAmerican's sales, respectively. Commercial sales also make up a similar proportion for both the rate-regulated utilities, at 17% and 14% for IPL and MidAmerican, respectively (see Figure 15 and Figure 16). IPL's electrical sales to residential, commercial, and industrial customers have changed on average by -0.4%, 0.3%, and -0.3% respectively each year from 2013 to 2022. MidAmerican's electrical sales to residential, commercial, and industrial customers have changed on average by 0.9%, -0.7%, and 6.2% respectively each year in the same time frame.

Likewise, IPL's count of residential, commercial, and industrial customers has changed on average by 0.1%, 1.5%, and -1.4% respectively each year from 2013 to 2022. MidAmerican's count of residential, commercial, and industrial customers has increased slightly higher than IPL—on average by 1.2%, 1.5%, and 0.9% respectively each year from 2013 to 2022.

Both IPL and MidAmerican own electric distribution lines and substation distribution transformers for distribution of electricity to customers in Iowa. Figure 17 shows the service territory of IPL and MidAmerican. IPL's service territory is shaded purple, covering a mix of urban and rural areas, with the largest city being Cedar Rapids. MidAmerican's service territory is shaded yellow, covering mostly urban areas in Iowa, especially the Des Moines metropolitan area, Davenport, and Iowa City. Furthermore, IPL's customer count of around 500,000 in Iowa and its service territory of 38,000 square miles in the state gives it a customer density of 13.16 customers per square mile. MidAmerican's customer count of around 720,000 in Iowa and its service territory of 10,000 square miles gives it a customer density of 71.98 customers per square

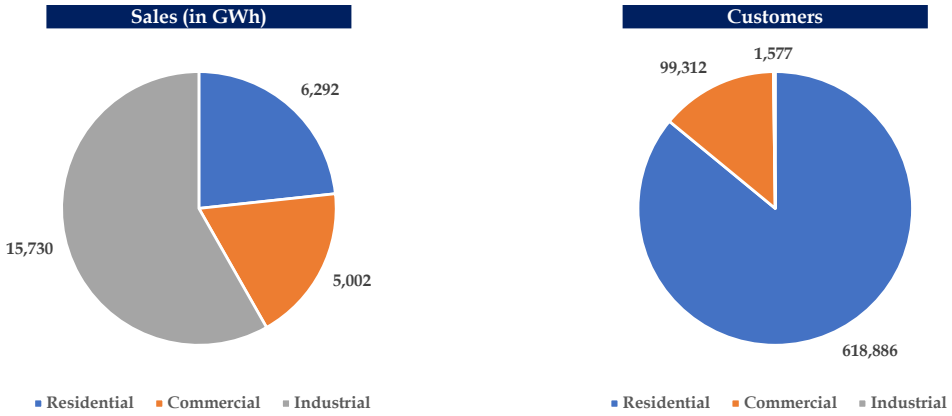
mile. This also shows that MidAmerican's customer mix for electricity customers is more urban than that of IPL.[87]

Figure 15. Sales and customer counts of IPL (2022)



Source: EIA. *Form 861.* Web. Accessed November 1, 2023.

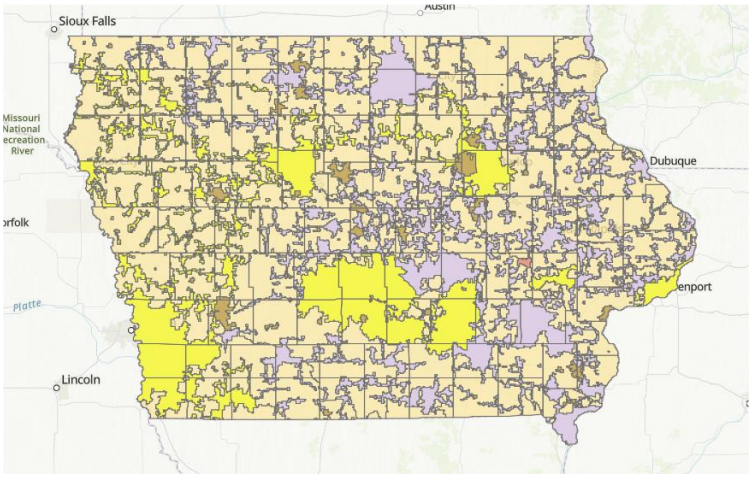
Figure 16. Sales and customer counts of MidAmerican (2022)



Source: EIA. *Form 861.* Web. Accessed November 1, 2023.

[87] Alliant Energy. *Operations, values and compliance.* Web. Accessed November 29, 2023. MidAmerican Energy Company. *Service Territory and Communities.* Web. Accessed November 29, 2023.

Figure 17. IPL and MidAmerican service territory



Source: IUB. *Electric Service Area Boundary Map.* Web. Accessed November 15, 2023.

4.2 The gas industry in Iowa has dual-service and single service utilities

4.2.1 Rate-regulated gas utilities in Iowa

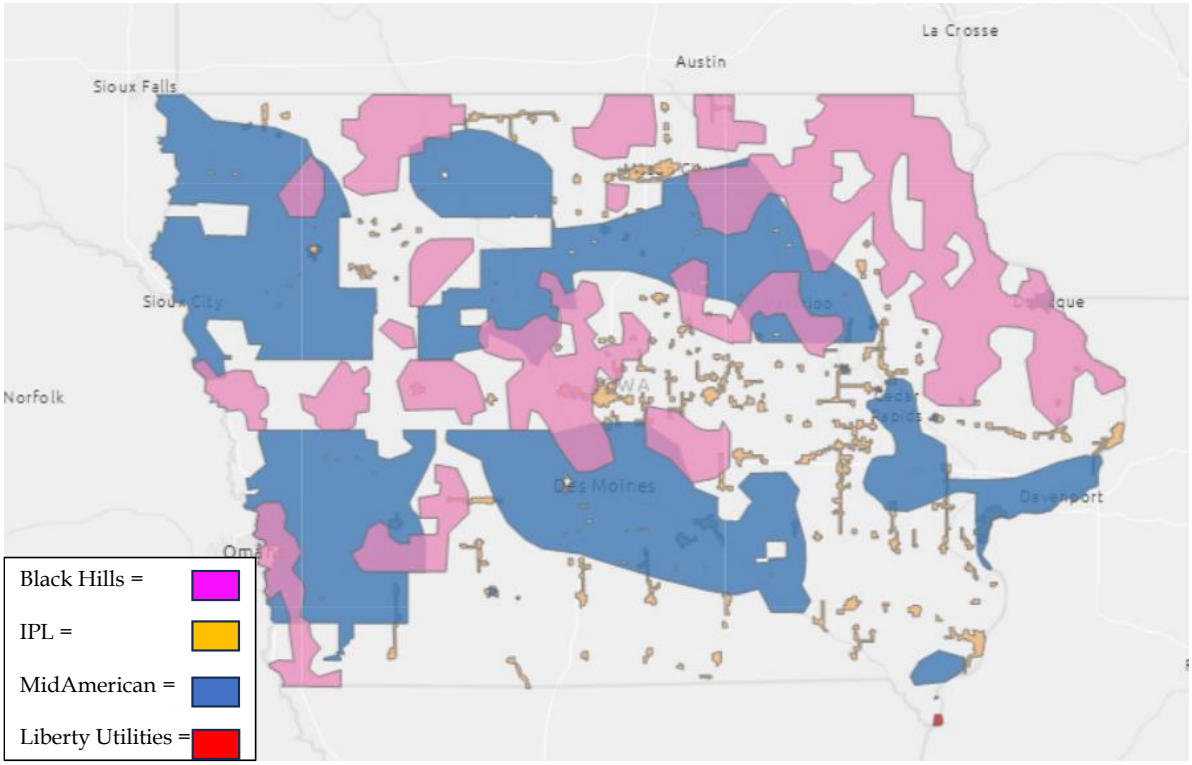
The IUB regulates the rates and services of four gas IOUs:

- MidAmerican;
- IPL;
- Liberty Utilities (Midstate Natural Gas) Corp. d/b/a Liberty Utilities ("Liberty Utilities"); and
- Black Hills.

Figure 18 shows the service territories of the rate-regulated gas utilities in Iowa.[88]

[88] As agreed upon with the IUB, LEI did not review Liberty Utilities as a part of this Study.

Figure 18. Service territories map



Source: S&P Global.

4.2.2 Major gas utilities in Iowa own their own transmission and distribution systems

Out of the three gas utilities, MidAmerican serves the most counties and customers and has the longest network of distribution pipelines in Iowa. Most of the sales for all three utilities go to residential customers.

Black Hills, a subsidiary of the Black Hills Corporation, provides gas procurement, transportation, and distribution services to more than 163,000 customers in Iowa.[89] Black Hills serves 133 communities in 44 different counties across the state.[90]

In Iowa, Black Hills owns 173 miles of intrastate gas transmission pipelines, 2,879 miles of gas distribution mains, and 2,503 miles of gas distribution service lines.[91] Black Hills procures gas for distribution from a mix of producers, processors, and marketers, which is then transported using interstate pipelines and the company's existing infrastructure. Moreover, the transportation of

[89] Black Hills Corporation. *2022 Annual Report – Proxy Statement*. February 2023.

[90] Ibid.

[91] Ibid.

procured gas is primarily conducted through interstate pipelines. This is managed under firm transportation service agreements, ensuring a reliable and consistent supply chain for its Iowa operations. This strategic approach underlines Black Hills' commitment to maintaining a stable energy provision in the region.[92]

MidAmerican purchases gas from various suppliers and contracts with interstate gas pipelines for transportation of the gas to MidAmerican's service territory. MidAmerican sells gas to end-use customers through its distribution system. The company's gas infrastructure encompasses 24,600 miles of mains and service lines as of the end of 2022, providing gas services to 53 counties in Iowa.[93] MidAmerican serves both retail and wholesale customers, with approximately 26% of sales by volume being to wholesale customers, 47% to residential retail, 22% to commercial retail, and 5% to industrial retail.[94]

IPL provides gas services to 62 counties in Iowa. The company focuses on the transportation and distribution of gas. IPL provides its gas services exclusively to retail customers, including in the research, education, hospitality, and manufacturing industries.[95] IPL maintains purchase agreements with numerous suppliers of natural gas from various producing regions of the US and Canada. IPL moves the purchased gas to customers through Alliant Energy's distribution systems to the customers' meters.[96]

4.2.3 Residential customers make up a majority of customer count and gas sales for the three gas utilities

MidAmerican has the most gas customers in the state, more than Black Hills and IPL combined. Residential customers constitute a majority of each utility's customers, making up 90.2%, 91.3%, and 89.1% of Black Hills, MidAmerican, and IPL's customers, respectively. In terms of sales, residential customers constitute a majority of each utility's sales, making up 63.2%, 64.9%, and 57.0% of Black Hills, MidAmerican, and IPL's sales, respectively (see Figure 19). Sales in gas for the three sectors have mostly averaged a 1.0% growth rate for each year from 2013 to 2022. The exceptions are IPL's industrial gas sales and Black Hills' industrial gas sales, which have averaged a 2.5% and 4.6% decrease in growth, respectively, each year from 2013 to 2022. Customer counts for the three utilities have averaged a 0.3% growth each year from 2013 to 2022. The exception is IPL's industrial customer count that averaged a 3.1% decrease each year in the same timeframe.

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[92] Ibid.

[93] MidAmerican Energy Company. *2022 Annual Report*. February 2023.

[94] Ibid.

[95] Alliant Energy. *2022 Annual Report*. March 2023.

[96] Ibid.

Figure 19. Sales and customer counts of gas utilities (2022)

Sales (in MMBTU)	Residential	Commercial	Industrial	Total
Black Hills Energy	11,827,526	6,552,319	343,862	18,723,707
MidAmerican Energy Co	43,431,167	19,000,244	4,488,760	66,920,171
Interstate Power and Light	16,249,627	10,257,094	1,985,469	28,492,190
Customers	Residential	Commercial	Industrial	Total
Black Hills Energy	145,295	15,772	93	161,160
MidAmerican Energy Co	555,899	52,240	546	608,685
Interstate Power and Light	200,823	24,285	170	225,278

Sales (in MMBTU) in %	Residential	Commercial	Industrial
Black Hills Energy	63.2%	35.0%	1.8%
MidAmerican Energy Co	64.9%	28.4%	6.7%
Interstate Power and Light	57.0%	36.0%	7.0%
Customers in %	Residential	Commercial	Industrial
Black Hills Energy	90.2%	9.8%	0.1%
MidAmerican Energy Co	91.3%	8.6%	0.1%
Interstate Power and Light	89.1%	10.8%	0.1%

Note: Data not available for Liberty Utilities.

Source: IUB. *Information from Utility Annual Report Filings 2004-2022.*

Based on the total pipeline mileages and customer counts, Black Hills has the lowest number of customers per mile of pipeline out of the three rate-regulated gas utilities. Black Hills, IPL, and MidAmerican have 5,116,[97] 4,388,[98] and 16,820[99] miles of pipeline, respectively. Using the 2022 customer count from the utilities' annual report filings, this gives Black Hills 31.5 customers per mile of pipeline, IPL 51.3 customers per mile of pipeline, and MidAmerican 36.2 customers per mile of pipeline.

4.3 IAWC is the only rate-regulated water utility in Iowa

4.3.1 IAWC owns water treatment, storage, and pumping facilities

The IUB regulates one water IOU, IAWC, a subsidiary of American Water. The company has approximately 905 miles of pipeline in the state, two treatment plants, over 8,200 fire hydrants, 13 water storage facilities (with a combined capacity of 12 million gallons), and 13 water pumping stations.[100] The company cites the source of its water supply as the Mississippi River in the Quad Cities District and the Cambrian-Ordovician and Jordan aquifers in Clinton and Dixon.[101]

[97] Black Hills Corporation. *2022 Annual Report – Proxy Statement*. February 2023.

[98] Pipeline Safety Info. *Alliant Energy*. Web. Accessed December 13, 2023.

[99] Pipeline Safety Info. *MidAmerican Energy Company*. Web. Accessed December 13, 2023.

[100] Iowa-American Water Company. *2022 Water Quality Report.* May 12, 2023.

[101] Ibid.

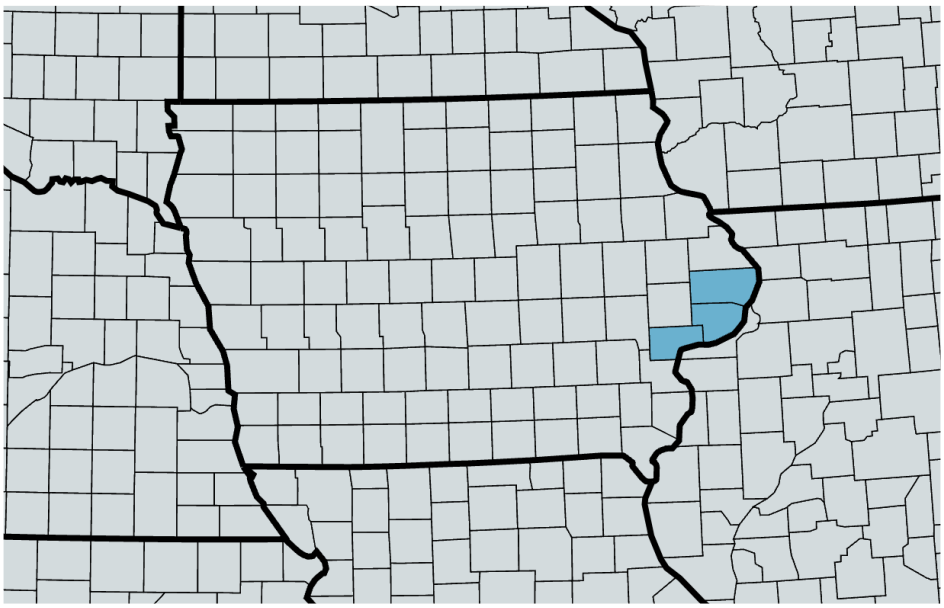
4.3.2 Most Iowans are served by municipal water utilities

The IUB does not regulate municipal water utilities or rural water districts. Most Iowans are served by municipal water utilities. For example, Des Moines Water Works is a municipal water utility that serves more than 600,000 customers in the Des Moines metro area and is the state's largest water utility by customer count. Other cities like Cedar Rapids, Sioux City, and Iowa City provide their own water utility services. The Iowa Regional Utilities Association provides water services to 15,000 rural customers in 18 counties in central and northeast Iowa with 4,656 miles of pipeline.[102]

4.3.3 IAWC's customers are concentrated in Eastern Iowa

IAWC provides water services to approximately 68,000 customers in the state.[103] Customers are concentrated in Scott, Muscatine, and Clinton counties.[104] The majority of IAWC's customer base is residential customers.[105] Figure 20 shows the approximate service territory of IAWC in blue.

Figure 20. Approximate service territory of Iowa-American Water Company



Source: LEI based on information from Iowa-American Water Company's *2022 Annual Water Quality Report – Quad Cities District*.

[102] Iowa Regional Utilities Association. *Homepage.* Web. Accessed November 15, 2023.

[103] Iowa-American Water Company. *Annual Report Rate Regulated Water Utilities – Class A & B*. April 1, 2023. P. 57.

[104] Iowa-American Water Company. *2022 Water Quality Report.* May 12, 2023.

[105] IUB. *Information from Utility Annual Report Filings 2013-2022.*

5 Review of Iowa's ratemaking procedures, laws, and administrative rules

Key findings

Laws are generally clear, but policy objectives may have shifted and/or authority of the IUB may be limited to new developments (e.g., the IUB may not be able to proactively review utility costs and rates, increase EE/DR programs, or have sufficient information on identifying least cost plans) with the utilities at an advantage to initiate most proceedings.

- The **general rate case** process is robust, but general rate cases have not occurred frequently in the last 20 years;
- **Advance ratemaking** (for the electric sector) was established to incentivize new generation and transmission that provide reliability and economic benefits as well as the altering of existing facilities to achieve environmental policy, but it is unclear to what extent it is still necessary and whether the IUB has the ability to thoroughly review overall utility expenditures;
- As of 2018, advance ratemaking is also captured in Iowa Code related to **acquisition approval for water utilities**, but there is concern whether the set threshold limit (i.e., the fair market value price limit under which acquisition does not require approval by the IUB) is still appropriate;
- **Trackers and riders** allow for on-going recovery of certain costs and investments, reducing administrative burden and regulatory lag—but also reducing the incentive for efficiency on the part of utilities;
- **Revenue sharing** provides a safeguard against utility overearning, but only one electric utility currently uses this rate mechanism, and it may dull the incentives for the utility to contain costs;
- **EE/DR programs** could be more ambitious—current limitations are imposed by Iowa law;
- **Long-term resource planning** studies are not currently a filing requirement by law; such process could help identify infrastructure and resource needs in the state and, in turn, benefit ratepayers.

5.1 The IUB has a toolbox of ratemaking mechanisms that it oversees to ensure utility compliance with state policies

Iowa Code chapter 476 sets out the fundamental principles and procedures to be followed within the IUB's regulatory processes.[106] The IUB has jurisdiction over the ratemaking process of the

[106] Iowa Legislature. *Public Utility Regulation, Iowa Code chapter 476*.

rate-regulated electric, gas,[107] and water[108] utilities in Iowa;[109] it ensures that the rate-regulated utilities are in compliance with state policies through regulation and oversight of several ratemaking mechanisms.

The proceeding wherein base rates are set is a contested case proceeding over the course of a 10-month period and follows administrative rules of procedure. One of the first decisions made by the rate-regulated utility seeking rate review is to determine whether to base its proposal on costs and revenues using a historic or future test year. Outside of a traditional rate proceeding, rate-regulated electric, gas, and water utilities are allowed to recover some types of costs that are not part of base rates through automatic adjustment mechanisms—like trackers and riders—while rate-regulated electric utilities[110] can apply for approval of new generation assets and infrastructure through advance ratemaking treatment determinations. The rate-regulated water utility, in the acquisition of water, sanitary sewage, or storm water utilities, can also apply for a form of advance ratemaking—through which the IUB authorizes pre-determined rates that will apply to the rate-regulated utility's customers. Costs consistent with advance ratemaking determinations will go into the utility's base rates following a rate case proceeding. Other ratemaking components are not a result of Iowa Code but of rate case precedent; for instance, the revenue sharing mechanism (through which utility revenues over a defined threshold are shared with ratepayers through reducing the depreciation of assets) that was not legislatively mandated

[107] Gas utilities with fewer than 2,000 customers are exempt from the IUB's rate and service regulations. The IUB also has oversight over certain areas of gas service provided by municipal utilities pertaining to safety and reliability.

[108] The IUB also regulates public utilities that offer piped water, sanitary sewage, and storm water drainage services. For private companies, the regulatory landscape varies based on the size of the utility; private entities serving 2,000 or more individuals fall under state regulations, with specific guidelines determined by the IUB. In contrast, smaller private utilities are not bound by IUB directives. Within this regulatory environment, IAWC is the sole rate-regulated utility under the IUB's purview, providing water to approximately 68,000 customers in Iowa. A discussion on sewer regulations and rates is outside of LEI's scope of work. Source: Iowa-American Water Company. *Annual Report Rate Regulated Water Utilities – Class A & B.* April 1, 2023. P. 57.

[109] Rural electric cooperatives and municipal utilities do not fall under the jurisdiction of the IUB for rate regulation purposes as they are governed by a board elected by those entities' customers. The governing bodies of these municipal utilities and electric cooperatives can choose to have the IUB regulate their rates, but they are not required to do so by Iowa Code. The IUB does, however, monitor safety and reliability standards of such entities

[110] Gas utilities are not eligible for advance ratemaking per Iowa Code 476.53. Nevertheless, gas utilities may file for IUB approval of a capital infrastructure investment automatic adjustment mechanism to allow for the recovery of certain costs from customers (a discussion of trackers—a form of automatic adjustment—is discussed further in Section 5.2.5.). An example of this is Black Hills' System Safety Maintenance Adjustment. Per 199 IAC 19.18, to be eligible, the costs must either meet certain criteria or be "costs for a capital infrastructure investment which (1) does not serve to increase revenues by directly connecting the infrastructure replacement to new customers, (2) is in service but was not included in the gas utility's rate base in its most recent general rate case, and (3) replaces or modifies existing infrastructure required by state or local government action, to meet state or federal natural gas pipeline safety regulations, or to otherwise enhance safety as approved in advance by the board." Source: Iowa Administrative Code. *Service Supplied by Gas Utilities, 199 IAC chapter 19.*

but was instead the result of a Settlement Agreement. The IUB oversees the application of this mechanism, as well.

Other tools available to the IUB to achieve HF 617's policy objectives include: for the state's electric utilities, the review of EE and DR plans and the procurement and contracting of fuels used in generating electricity;[111] for the state's gas utilities, the review of EE plans and gas procurement and contracting practices;[112] and for the state's rate-regulated water utility, a review of acquisitions proposed by the utility to increase the service area and customer base.[113]

According to Iowa Code section 476.3, the IUB has the authority to conduct investigations into the rate-regulated utilities on "anything done or omitted to be done" pursuant to Chapter 476 of Iowa Code.[114] If the IUB determines that the utility's response to customer complaints is inadequate, and if there appears to be reasonable grounds for investigating the complaint, the IUB can initiate a formal proceeding. Once the proceeding is initiated, the IUB can set a hearing and give notice, as it deems appropriate.[115] This investigation process is undertaken frequently in Iowa; customers have filed complaints against the utilities on issues such as net metering, requesting clarification on the inclusion of renewable generation in tariffs, failure to repair service lines, passing unnecessary costs onto customers, and others.[116] Each of those issues has seen a complaint filed within the past 12 months; the IUB has reviewed each complaint and the accompanying response from utilities to determine whether there have been reasonable grounds presented for further investigation. The IUB also has the ability to initiate an audit of utility transactions and management.[117]

5.2 Key regulatory mechanisms within current ratemaking procedures

Within the procedures described above, there are specific mechanisms for regulation of the utilities that help to address the balance of interests between utilities and ratepayers. The most prevalent mechanisms from LEI's current understanding of the ratemaking process in Iowa are outlined in the subsections that follow.

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[111] Iowa Legislature. *Public Utility Regulation, Iowa Code sections 476.6 (12), 476.6(13), and 476.6(15)*.

[112] Iowa Legislature. *Public Utility Regulation, Iowa Code sections 476.6(11), 476.6(13), and 476.6(15)*.

[113] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.84*.

[114] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.3*.

[115] Iowa Legislature. *Public Utility Regulation, Iowa Code chapter 476.*

[116] IUB. "Electronic Filing System." Web. October 2, 2023.

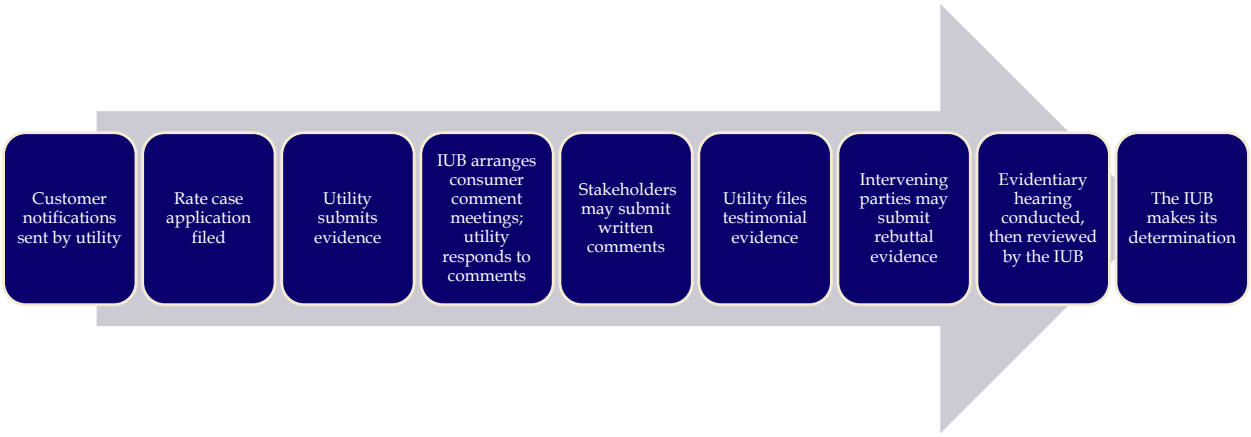
[117] See for example: IUB. *Order Accepting Filing and Closing Docket*. Docket No. INU-2011-0001. April 14, 2016.

5.2.1 The general rate case occurs too infrequently

A key authority and responsibility of the IUB is the regulation of rates of rate-regulated utilities in the electric, gas, and water industries. The IUB has the authority through the Iowa Code to investigate the rates and services provided by these regulated utilities, with the primary responsibility being to ensure just and reasonable rates for Iowa ratepayers. "Just and reasonable" is not directly defined in Iowa Code but is assumed from the legislative context to mean that the IUB has the authority to review proposed rates from the utilities and determine if the evidence provided to change rates is justified relative to the procedures outlined in Iowa Code chapter 476.

To set just and reasonable rates for rate-regulated utilities in the electric, gas, and water industries, the IUB enforces Iowa Code section 476.6, which outlines the steps and procedures that rate-regulated utilities must follow if they wish to change their rates or charges. The ratemaking process is completed through a series of steps, as summarized in Figure 21. These steps in and of themselves are relatively comprehensive: they ensure that the filing rate-regulated utility submits the data necessary for the IUB to make a determination in the rate case and allow for parties to the process to submit comments and evidence that support the decision-making process. In practice, however, there is room for improvement in this process.

Figure 21. Ratemaking process in Iowa



Note: The process depicted in this graphic is simplified; please see the description below for additional details.

Source: Iowa Legislature. *Public Utility Regulation, section 476.6*.

The ratemaking process commences when a utility notifies customers of proposed changes to rates, charges, schedules, or regulations through a written notice no more than 62 days before the application filing date. This notice must be provided by the utilities to inform customers both of the proposed changes and also of their right to petition the utility's proposed modifications within 62 days of being served the notice. The rate-regulated utility then submits an application to the IUB seeking modifications to its rates, charges, schedules, or other service terms. The IUB retains the authority to initiate a rate case with a utility if it determines that there are reasonable grounds for an investigation into the reasonableness of a rate-regulated utility's rates, but in this instance the burden of proof for justifying a rate change rests with the IUB. For this reason (of having the burden of proof), the IUB has not initiated utility rate cases—this is a weakness in

Iowa's general rate case process, which impacts the IUB's ability to ensure just and reasonable rates.

The utility may implement proposed increased rates (or other changes) on an interim (or temporary) basis 10 days after filing its application, with the understanding that it may be ordered to refund customers for overpayments if the IUB finds that the utility's proposed changes are not consistent with established regulatory principles. The utility's application is required to include evidence in the form of testimony and exhibits, which support its request, and any other additional information requested by the IUB. Though required by law, based on feedback LEI heard during the policy charrettes, in practice, the IUB does not always receive the information requested from the applying utilities, which negatively impacts the IUB's ability to ensure state policy objectives. The general rate case process may be improved if the IUB receives more explicit permission in law to solicit information from the rate-regulated utilities that has not already been submitted over the course of the proceeding. Such information may allow the IUB to better understand the rationale for and reasonableness of the new rate request.

In most instances, the IUB arranges a series of public meetings, allowing relevant stakeholders and customers to provide comments on the rate-regulated utility's application. During this phase, the utility also has the opportunity to respond to the comments received. Individuals may also submit written comments to the IUB. Written comments become part of the permanent case file but are not considered evidence in the rate proceeding.[118] It may be beneficial for the IUB to be able to consider this feedback received from stakeholders as evidence—in order to have access to a wider array of information from a broader set of affected parties that informs the IUB's assessment of just and reasonable rates.

Subsequently, the applying rate-regulated utility is required to furnish the IUB with supporting evidence, written arguments in favor of the filing, and any additional information requested by the IUB. The OCA and intervening parties are allowed time to respond in the form of rebuttal testimony. Furthermore, an evidentiary hearing is conducted wherein the issues are litigated by the parties. The IUB then proceeds with a thorough review of the evidentiary record and ultimately issues a decision on all pertinent issues raised by the parties. The IUB is required to issue a decision on a utility's application to rate changes within 10 months; if the IUB does not make a determination on rates within 10 months of application submission (plus any extension to this timeline), then the temporary rates, if introduced by the rate-regulated utility, become permanent rates. If the rate-regulated utility does not introduce temporary rates, and the IUB does not approve new rates, then the rates proposed by the rate-regulated utility in the rate filing cannot become effective.

Applications for a general rate increase can be based on either a historic test year or a future test year. In rate cases that use the historic test year approach, the rate base is calculated by utilizing a 13-month average of month-ending balances.[119] The revenue requirement includes operating

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[118] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6*.

[119] Iowa Administrative Code. *Rates Cases, Tariffs, and Rate Regulation Election Practice and Procedure, 199 IAC section 26.4(4)(d)(1).*

expenses such as O&M expenses, depreciation and taxes, rate base, and the return on the rate base. For rate-regulated utilities proposing to change rates based on a historic test year, they must provide:

- statements of the original costs of the items of plants and facility equipment;
- operating revenues and expenses and the balance sheet of the relevant year;
- test year and pro forma income statements; and
- any additional testimony and exhibits required for the rate cases.

Utilities also have the opportunity to propose rates using a future test year. These utilities must provide:

- a forecast for each major cost component;
- projected capital structure and proposed capital cost for each component;
- O&M expenses for the test year;
- three years of historic billing information; and
- any additional testimony and exhibits required for the rate case.[120]

In cases where a utility seeks to include a new generation asset in its rate base, the IUB evaluates the asset to ascertain its appropriateness and viability for the customers who will bear the costs through rates. If the IUB deems the utility's proposed rates (which would be based on its proposed test year costs and revenues) to be just and reasonable, the proposed rates would be approved. However, it is more common for the IUB to approve some of the detailed components of the utility's proposal and some of the detailed components of the intervenors' proposals. Under this scenario, the IUB would then direct the utility to calculate and file proposed compliance rates based on those decisions. The IUB reviews compliance rates in order to determine if they result in just and reasonable rates. The IUB can also find that the application is insufficient or inconsistent with law and deny the request entirely. This describes the IUB's review process applicable to a fully litigated contested case proceeding.[121]

If the parties reach a settlement during the contested case proceeding, the settlement would be presented, along with required supporting information, to the IUB for its consideration. The IUB has the authority to accept, reject, or modify the terms of the settlement—in order to make a determination that the settlement is in the public interest. This is significant, as it shows that the

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[120] Iowa Administrative Code. *Rates Cases, Tariffs, and Rate Regulation Election Practice and Procedure, 199 IAC section 26.4(5).*

[121] This description is not applicable to advance ratemaking proceedings; for the authority of the IUB in relation to advance ratemaking, please see Section 5.2.2.

IUB maintains oversight and decision-making authority even if a general rate case proceeding is settled rather than litigated.

Overall, general rate case procedures in the Iowa Code give the IUB fairly comprehensive authority, as it maintains oversight over every step of the general rate case process. If any complaints arise from public stakeholders (such as customers) about the affordability or appropriateness of rates charged by utilities, the IUB also has the authority to investigate the concern.

5.2.2 Advance ratemaking should be reassessed for current system needs

Advance ratemaking principles exist for both the electric and water industries, although it has been used more commonly by electric rate-regulated utilities in Iowa. The two applications of advance ratemaking for the electric and water industries are addressed in the subsequent sections.

5.2.2.1 Electric industry advance ratemaking applications lack robustness in the data submitted to the IUB

In general ratemaking cases, as outlined in Iowa Code section 476.6, the IUB reviews the utility's filing to ensure that (1) the costs associated with assets or investments are both used and useful to customers and (2) the associated costs are prudently incurred. Under the concept of advance ratemaking pursuant to Iowa Code section 476.53, the IUB predetermines whether future assets will be used and useful and pre-authorizes the costs that will be recovered by the utility. Rules around the costs recoverable by the utility are not set by legislation but rather through regulatory precedent. Specifically, through advance ratemaking proceedings, the IUB has typically set a "soft cap" for costs that the utility can recover without a prudency review. Any costs above this soft cap would require a prudency determination by the IUB.[122] This can be an advantage seeing as the IUB has greater flexibility to make determinations on a case-by-case basis based on project-specific circumstances. Advance ratemaking decisions approved by the IUB cannot be revisited in a general rate case proceeding, and the decisions apply for the life of the generation assets.

Under Iowa Code section 476.53, a rate-regulated electric utility can seek advance ratemaking principles when it intends to construct or acquire an electric power generating facility with a nameplate capacity of at least 300 MW, a combined-cycle electric power generating facility, an

[122] The utility earns a return on the applicable advance ratemaking asset (as determined in the advance ratemaking proceeding for that asset) up until the soft cap. The soft cap, if applied, is determined in each advance ratemaking proceeding. See, for example, a 2018 decision on IPL's New Wind II Project application: IUB. *Final Decision and Order*. Docket No. RPU-2017-0002. April 17, 2018.

alternate energy production facility,[123] or significantly alter an existing generating facility.[124] The eligible "significant alteration of existing facilities" includes:

- converting a coal-fueled facility into a gas-fueled facility;
- adding carbon capture and storage facilities to a coal-fueled facility;
- adding gas-fueled capability to a coal-fueled facility;
- adding biomass-fueled capability to a coal-fueled facility; or
- replacing an existing alternate energy production facility in order to increase energy production or reduce load.[125]

Iowa Code section 476.53 was enacted to address the uncertainty raised by rate-regulated electric utilities: that a utility may not be able to recover the cost of investments made in large generation facilities.[126] This mechanism is meant to incentivize utilities to undertake construction of generation assets as it is the objective of the Iowa state government to encourage the development of electric power generation and transmission facilities that ensure that the state has sufficient electric service.[127] This mechanism is also intended to meet another objective of the state government: to encourage the rate-regulated utilities to lower the carbon intensity of their existing electric generating facilities.[128] The Iowa legislature goes further in Iowa Code section 476.53A to explain that the intent of advance ratemaking principles is to encourage the use of renewable electric power generation both for use by Iowa customers and the development of transmission capacity for exporting power generated in Iowa, specifically wind power.[129] To this end, rules and procedures guaranteeing investment recovery and generously defining eligible resources were set up to allow for the achievement of these objectives.

When determining whether to approve advance ratemaking principles, the IUB examines the necessity of the requested generation asset based on seven factors defined by the legislature.

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[123] "Alternate energy production facilities" are defined in Iowa Code section 476.42 as (1) a solar, wind turbine, waste management, resource recovery, refuse-derived fuel, agricultural crops or residues, or woodburning facility; (2) land, systems, building, or improvements that are located at the project site and are necessary or convenient to the construction, completion, or operation of the facility; or (3) transmission or distribution facilities necessary to conduct the energy produced by the facility to users located at or near the project site.

[124] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.53.*

[125] Ibid.

[126] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.53.*

[127] IUB. *Final Decision and Order*. Docket No. RPU-2022-0001. April 27, 2023.

[128] Ibid.

[129] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.53A*.

These factors include (1) sufficient quantity of generation to meet customer need, (2) reliability impacts, (3) economic benefits/cost-effectiveness, (4) environmental benefits/impact on carbon intensity, (5) diversity of fuel type in the portfolio, (6) availability and reliability of fuel sources, and (7) volatility of fuel prices. Assessment of these factors allows the IUB to determine whether the risks that would be transferred from the rate-regulated utility to customers (through increased rates) with the approval of the proposed project is adequately justified under Iowa Code 476.6.[130] Under Iowa Code section 476.53, the IUB must make the following findings to support the granting of advance ratemaking principles:

- the application must address qualifying facilities under the statute;
- the facilities must be needed in the context of sufficient quantity of generation for reliable long-term electric supply;
- the rate-regulated utility must have an IUB-approved EE plan in place; and
- the IUB must determine that the proposed facilities are reasonable when compared to other feasible alternative sources of supply to meet the identified need.[131, 132]

These findings were loosely defined to support the generation and transmission build-out sought by state policymakers, but at the expense of enabling the IUB to conduct a thorough assessment of prudence and need for the applying asset. These principles have also been loosely defined through precedent set by the Iowa Supreme Court in a case that deliberated whether advance ratemaking applications should provide (1) evidence indicating the need for the proposed generation capacity and (2) analysis comparing the proposed project to alternative generation sources.[133] As a result, rate-regulated utilities can argue in ratemaking proceedings that their

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[130] Iowa Administrative Code. *Utilities Division, 199 IAC chapter 26.*

[131] Ibid.

[132] The acquisition approval procedure for rate-regulated water utilities outlined in Iowa Code section 476.84 and discussed in Section 5.2.2.2 is also considered a form of advance ratemaking in Iowa. Prior to the completion of the acquisition, the acquiring utility can apply for advance ratemaking, which would authorize rates to be charged to customers of the acquired utility. This advance approval can also allow the IUB to specify the ratemaking principles that will apply to the customers of the acquired utility in future rates. Source: Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.84*.

[133] In NextEra Energy Resources LLC vs. Iowa Utilities Board, independent power producer NextEra requested a review of the IUB's decision pertinent to MidAmerican's advance ratemaking application for the Wind VII project. NextEra questioned whether the IUB had "substantial" evidence to approve Wind VII; MidAmerican did not have to submit as part of its application an analysis of future considerations (like fuel diversity, compliance with environmental regulations, etc.), comparison of the proposed project with alternative generating facilities, or evidence that the proposed project satisfied electric demand, among other information. NextEra also questioned whether approval of advance ratemaking for Wind VII was "improper discriminatory restriction on interstate commerce." Ultimately, the Iowa Supreme Court ruled that the IUB interpreted Iowa legislation correctly and wrote that the IUB "does not have binding interpretive power regarding interpretation of specific statutory terms in public utility regulation statutes, and thus Supreme Court reviews board's interpretation of such terms for correction of errors at law." Source: Supreme Court of

proposed new generation is necessary based on broad interpretation of future federal regulations, fuel diversity needs, projected lowered costs for customers, and the promotion of renewable energy generation as advocated for by the Iowa State Legislature. The rate-regulated utility's evaluation also only needs to take into account a comparison between the proposed assets and other long-term energy sources—this comparison does not need to take place at the time of application for advance ratemaking principles.[134] This precedent set by the Iowa Supreme Court ruling highlights the fact that rate-regulated utilities have not had to provide extensive utility-specific, quantitatively-backed analysis when proposing advance ratemaking principles for new generation assets. Because it has been 20 years since the introduction of advance ratemaking, the structure of this mechanism may be outdated and no longer reflect system realities and future needs. The limited evidence submitted as part of the advance ratemaking process—and the relative ease with which rate-regulated utilities can receive advance ratemaking approval—restricts the IUB in its ability to determine whether an asset would truly benefit the electric system and the ratepayers that pay for it.

More recently, in an effort to promote visibility into the need for new generation assets, approved settlements for advance ratemaking principles have required the completion of so-called "Resource Evaluation Studies" ("RES") by the applying rate-regulated utilities.[135] These resource studies—conducted as part of a public process in which proceeding stakeholders can participate—provide insight into unit retirements and new generation, and make available the results of capacity expansion modeling undertaken by the utility. This new precedent—if applied as part of the advance ratemaking process or as part of a separate resource planning proceeding—could significantly improve the ability of the advance ratemaking mechanism to achieve policy objectives by providing insight into utility long-term planning (i.e., the anticipated future resource mix, generation fleet, reliability assessment, etc.), which in turn would inform advance ratemaking approval.

Complementing its role in advance ratemaking, the IUB also issues generating certificates for renewable energy and storage facilities greater than 25 MW. According to Iowa Code section 476.2(1), an entity cannot commence construction of a facility unless a generating certificate has been issued by the IUB. The application for a generating certificate can coincide with the application for advance ratemaking principles. Typically, under Iowa Code chapter 476A, generation facilities of 25 MW of capacity or more with associated transmission capacity can only be constructed (or apply so-called "significant alteration") once they receive a certificate of public convenience, use, and necessity (the "generating certificate") issued by the IUB.[136] The IUB can waive this requirement to obtain a generating certificate for facilities between 25 MW and 100

Iowa. *NextEra Energy Resources LLC, Appellant, v. Iowa Utilities Board, Appellee, MidAmerican Energy Company and Office of Consumer Advocate, Intervenors – Appellees*. 815 N.W.2d 30. No. 10-2080. June 8, 2012.

[134] Iowa Supreme Court. *Advance Ratemaking Principles – Wind Energy Application*. June 8, 2012.

[135] See for example a recent advance ratemaking application by IPL in Docket No. RPU-2021-0003.

[136] This legislation does not apply to facilities that—prior to July 1, 1976—acquired siting, publicly announced development plans, or had any equipment contracts in place.

MW in size if it deems that such waiver would not negatively impact the public interest. The IUB makes such determination through a contested case proceeding.[137] Per Iowa Code section 476A.6, the IUB issues a generating certificate for a facility if:

1. the services and operations resulting from the construction of the facility are consistent with legislative economic development policy and will not be detrimental to the provision of reliable and adequate electric service;

2. the applicant is willing to construct, maintain, and operate the facility; and

3. the construction, maintenance, and operation of the facility will be consistent with reasonable land use, environmental policies, and utilization of air, land, and water resources.[138]

However, following a 1997 declaratory ruling, firms that have applied for advance ratemaking for proposed wind generation facilities have been able to circumvent the generating certificate application process. In its petition to the IUB, the Zond Development Corporation ("Zond"), a developer of two wind power facilities, argued that—based on the language in Iowa Code—"facility" is defined as wind turbines connected to one gathering line.[139] As a result of the Zond decision, wind generation facilities of 25 MW or less connecting to a single gathering line have been allowed to proceed construction without being granted a generating certificate from the IUB. While this supported the nascent wind industry of the late 1990s, today this precedent further facilitates infrastructure build-up without thorough assessment by the IUB.

Once the IUB issues a final decision on the advance ratemaking application based on the information submitted, the rate-regulated utility has the right per Iowa Code to withdraw or proceed with its application;[140] on top of these options, Iowa Code not specific to utility regulation but rather to administrative procedures ("general" statute)[141] gives the utility additional options on how to proceed after receiving the IUB's final decision, like requesting adoption, amendment, or repeal of rules, or file for rehearing.

5.2.2.2 Water industry acquisition procedures incentivize rate-regulated water utilities to provide reliable and safe services

In the context of the water industry, the rate-regulated utility may apply for advance ratemaking principles following the acquisition of certain assets (which may necessitate a rate adjustment). Specifically, Iowa Code section 476.84 and 199 IAC 41.5(476) outline specific acquisition

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[137] Iowa Legislature. *Electric power Generation and Transmission, chapter 476A*.

[138] IUB. *Order granting applications for certificates of public convenience*. Docket No. GCU-2021-0005. October 28, 2022.

[139] IUB. *Declaratory Ruling*. Docket Nos. DRU-97-5, DRU-97-6 (WRU-97-25, WRU-97-26). November 6, 1997.

[140] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.53.*

[141] Iowa Legislature. *Iowa Administrative Procedure Act, Iowa Code sections 17A(7) and 17A(16).*

requirements for rate-regulated water utilities that seek to acquire a water, sanitary sewer, or storm water utility from a non-rate-regulated entity.[142,143]

The IUB reviews the costs associated with the acquisition during its review of the proposed acquisition. The applicable ratemaking principles for the proposed acquisition are determined by the IUB such that the acquisition results in just and reasonable rates to all customers of the rate-regulated utility. The IUB also has the authority to approve ratemaking principles that restrict the ability of the rate-regulated utility to seek an increase in rates for a period after the acquisition takes place.[144] The ability of IAWC to apply for advance ratemaking principles and agree to provisional rates for the acquired service outside of a general rate case during the acquisition approval process may increase the incentive to acquire more water utility assets. This increases the customer base that now has access to regulated water service (i.e., customers for which the IUB can ensure just and reasonable rates and quality of service).

In an example of the benefits of this mechanism, the rate-regulated water utility may seek acquisition approval of a municipal water system that does not have the financial ability to invest in its infrastructure to maintain reliable, safe, and affordable utility services. The use of advance ratemaking in these cases to allow IAWC to pre-determine rates when acquiring the failing municipal system creates the incentive to purchase the system and invest the necessary capital to restore and renew the infrastructure for its customers.

5.2.3 Legislatively mandated EE/DR spending caps are too restrictive

The IUB is also responsible for reviewing EE and DR programs and regulating the EE and DR plans of rate-regulated utilities; IUB authority and program rules are established in 199 Iowa Administrative Code chapter 35. Iowa Code requires that each rate-regulated electric and gas utility have in place an IUB-approved five-year EE plan; in addition to EE programs, five-year DR plans are also mandatory for electric rate-regulated utilities. Both EE and DR plans must include:

- a range of programs that address all customer classes;
- a cost-effective test analysis (discussed further below) and assessment of the potential of each program;[145]
- estimated annual energy and demand savings for each program;

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[142] An acquisition with a fair market value of $500,000 or more requires approval of the IUB; acquisition of fair market value below this threshold amount does not require prior approval from the IUB.

[143] The Iowa Code does not have any such provisions on acquisition for electric and gas utilities.

[144] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.84*.

[145] An assessment of program potential refers to a study that helps to determine the cost-effective energy and capacity savings possible from actual and projected customer engagement in an EE/DR program.

- budget for each program for each of the next five years of implementation;
- a monitoring and evaluation plan;
- forecasted electric or natural gas revenue for each of the five plan years; and
- rate impacts and average bill impacts by customer class resulting from the plan.[146]

Energy efficiency vs. demand response

EE involves using less energy to produce the same outcomes without significant behavioral changes. EE leads to cost savings, enhances grid resilience and reliability and it also plays a role in transitioning to renewable energy sources.

DR programs allow consumers to adjust their electricity usage during times of high demand or when the electric grid is under stress. This adjustment can be a reduction in overall electricity use or shifting consumption to off-peak times. Consumers are often incentivized financially by utilities to participate. DR helps to balance the grid during peak usage times, reducing the need for expensive, less-efficient power generation and stabilizing the grid during extreme weather events or outages.

EE aims for consistent, long-term energy use reductions, while DR focuses on reducing electricity use during peak times. EE lowers overall electricity demand, whereas DR specifically targets periods of peak demand to alleviate strain on the power system. Both strategies help defer the need for new power plants and reduce electricity costs.

Sources: Department of Energy. *Energy Efficiency: Buildings and Industry*. Web. Accessed November 22, 2023; Department of Energy. *Demand Response*. Web. Accessed November 22, 2023.

As a filing requirement for the five-year plan filing, the rate-regulated electric utilities must also file additional data, including: load forecasts (including summer and winter reserve margin, annual energy requirements, highest peak demand over the past five years, a comparison of actual and weather-normalized demand forecasts, etc.), class load data, existing capacity and firm commitments (including the most recent load and capability report submitted to MISO as well as summer and winter net generating capability ratings submitted to NERC, among other information), capacity surpluses and shortfalls, capacity from outside of the utility's system that can be used to meet future needs, future supply options and costs, and avoided capacity and energy costs. The filing requirement for gas utilities is similar. Required information for filing includes: demand and transportation volumes forecasts (including annual throughput, peak day demand, and reserve margin based on the PGA year, as well as highest peak demand over the past five years, a forecast of the utility's demand for transportation, and a comparison of demand forecasts with actual and weather-normalized peak day demand and annual throughput, among

[146] Iowa Administrative Code. *Utilities Division, 199 IAC section 35.6(476).*

others), capacity surpluses and shortfalls, supply options, and avoided energy and capacity costs.[147]

This list of information submitted to the IUB is relatively comprehensive though not exhaustive as it does not consider the contribution of EE/DR to the resource mix. A resource planning process would provide this information, as well as project the potential contribution of EE/DR to the future grid system. This is important in that it can inform the IUB's authorization of new infrastructure assets (such as through advance ratemaking proceedings, since EE/DR reduces load), which in turn impacts the rates paid by ratepayers.

The IUB's ability to promote policy objectives through EE/DR is also limited by the spending cap on these programs. Namely, Iowa Code section 476.6(15)(c)(2) limits EE and DR implementation by capping the amount of utility spending on EE and DR programs. On EE programs, rate-regulated gas utilities cannot incur cumulative average annual costs of more than 1.5% of the expected retail rate revenue; for rate-regulated electric utilities, the cap is no more than 2% of the expected retail rate revenue. On DR programs, rate-regulated electric utilities cannot spend more than 2% of the expected retail rate revenue on a cumulative average annual basis.[148] When filing their EE/DR plans, the rate-regulated electric and gas utilities also submit their respective EE/DR program budgets and retail rate revenues for the duration of the five-year plan period (discussed in more detail below). If requested by the rate-regulated utility and approved by the IUB, the retail rate revenue calculation may be kept confidential. These caps greatly restrict the amount of EE/DR uptake in the state, a low-hanging fruit that can both reduce the need for new generation (resulting in savings for ratepayers) and at the same time support improved reliability of the system. As a consequence of these caps, the IUB is limited in its ability to support policy objectives through EE/DR.

Furthermore, Iowa Administrative Code allows the utility to choose one cost-effectiveness test out of a pool of five: participant test, ratepayer impact test, societal test, total resource cost test, utility cost test. The cost-effectiveness test estimates the benefits to the present value of EE/DR plan costs. Though five cost-effectiveness tests are permissible by law, only one—the RIM test—is used to determine whether customers can request exemptions (opt-out) from EE/DR programs. Specifically, customers can request opt-out if the combined RIM test score for the rate-regulated electric utility's five-year EE and DR plan falls below 1.0.[149] This opt-out policy also limits the ability of the IUB to support policy objectives through EE/DR; customers do not have the option to opt-out of other existing programs in the electric industry. Notably, the opt-out was introduced by Iowa Legislation in SF 2311 at the same time as the EE/DR spending cap.[150] Of the peer states

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[147] Iowa Administrative Code. *Utilities Division, 199 IAC section 35.5(4).*

[148] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(15)(c)(2).*

[149] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(15)(b)*; Iowa Administrative Code. *Energy Efficiency and Demand Response Planning and Reporting for Natural Gas and Electric Utilities Required to be Rate-Regulated, 199 IAC section 35.7(476).*

[150] Senate File 2311. *An Act Modifying the Various Provisions Relating to Public Utilities Providing for A Study of Electric Vehicle Infrastructure Support, and Including Effective Date Provisions.* Web.

studied, only Missouri has a strict opt-out policy for customers that meet specific high-demand criteria; Michigan and Minnesota customers have an option to self-direct, whereas Kansas and South Dakota have no opt-out policy in place.[151]

The IUB conducts contested case proceedings to review EE and DR plans and budgets filed by rate-regulated electric and gas utilities. When a request to modify an approved plan or budget is filed, the IUB will initiate a formal proceeding if it determines that any reasonable grounds exist for investigating the request.[152] The IUB also requires each utility to file by May 1st of each year an EE annual report that compares actual energy and demand savings with the performance standards approved by the IUB.[153] The reasonableness and prudence of the utility's implementation of EE and DR plans and budgets are also reviewed periodically through the contested case proceeding.[154]

5.2.4 Revenue sharing benefits ratepayers in the form of lower bills, but also helps the utilities avoid rate cases for extended periods of time

In general, revenue sharing is a mechanism under which the utility is required to share earnings over an established threshold with customers. Sharing can occur in the form of rate reductions, refunds to customers in the form of a credit, or accelerating depreciation of the utility's investment in the system. In some jurisdictions, revenue sharing in utility regulation is assessed as a component of performance-based ratemaking. Revenue sharing is akin to ESMs that have been used by many regulators throughout the country to reduce the risk of utility over-earning by giving back some of the utility's profits to ratepayers (and in some cases to also protect the utility from the risk of under-earning). ESMs have also been used to reduce incentives for "bad behaviors" such as underinvestment.[155] To this end, the revenue sharing mechanism in place for MidAmerican creates benefits for its Iowa electric ratepayers.

In Iowa, the only utility that incorporates revenue sharing as an additional ratemaking mechanism for recovering and distributing excess operational profits is MidAmerican.[156] MidAmerican's revenue sharing mechanism was adopted as a result of a 1997 Settlement

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[151] ACEEE. *Self-Direct and Opt-Out Programs*. Web. July 2022.

[152] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(15)(c)(3)-(5).*

[153] Iowa Administrative Code. *Utilities Division, 199 IAC section 35.8.*

[154] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(15)(e)(2).*

[155] Lower capital spending by a utility would, holding all else constant, raise the ROE and therefore more likely trigger an ESM payout. Source: NARUC. *Examples of Earning Sharing Mechanisms in State Utility Commission.* August 13, 2020.

[156] For additional information on the structure of MidAmerican's revenue sharing mechanism, see Appendix 4.

Agreement and is not mandated by statute;[157] as such, there is no legal requirement for other rate-regulated utilities to adopt a revenue sharing mechanism.

MidAmerican's core objectives for revenue sharing include the following:

- establishing a simplified calculation relative to how rate case filings are calculated;
- avoiding the need for frequent rate cases and providing rate predictability for customers;
- providing an incentive to manage the company over the long run without the need for rate resets; and
- mitigating future rate increases by accelerating the depreciation of generation assets.[158]

Since its inception, all changes to revenue sharing have occurred through either rate cases or advance ratemaking principles proceedings. The latest terms and conditions for revenue sharing, along with the specific items considered in the calculation of the revenue sharing threshold, have been officially incorporated as an approved principle within MidAmerican's Wind XII docket.[159] Currently, funding retained by MidAmerican through revenue sharing—calculated based on its total electric annual revenues—is used to pay down the depreciation balances of the company's assets with the highest ROE.[160] The mechanism is asymmetric, as it only requires the company to share profits with customers when revenues exceed the designated ROE earning threshold; customers are not penalized (through surcharges or increased rates) if the earnings threshold is not achieved.

At the same time, however, MidAmerican has used the revenue sharing mechanism as an avenue through which to avoid filing a rate case proceeding since 2013. By using earnings above the allowed threshold to pay off the depreciation balance of generation assets, the revenue sharing mechanism has allowed MidAmerican to stay out of rate cases even as advance ratemaking assets were being approved by the IUB. The benefits to customers include the reduced base rate due to lower administrative expenses associated with rate cases and the accelerated depreciation of generation assets—but also the disadvantage of not understanding the extent to which utility costs have diverged from rates due to the extended amount of time between rate cases.

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[157] IUB. *Order Approving Settlement, Granting Waivers, and Requiring Additional Information*. Docket No. APP-96-1, RPU-96-8. June 27, 1997.

[158] MidAmerican Energy Company. *Iowa Revenue Sharing Presentation.* February 10, 2023.

[159] IUB. *Response to Board order and motion for clarification.* Docket No. SPU-2021-0005. July 26, 2021.

[160] MidAmerican Energy Company. *Environmental Intervenors' Comments on Proposed Settlement*. Docket No. RPU-2022-0001. December 16, 2022.

5.2.5 Trackers, riders, and other adjustment mechanisms in Iowa make up a disproportionately high share of residential customer bills

There are two complementary automatic adjustment mechanisms in place in Iowa: trackers and riders. Trackers and riders allow for on-going recovery of certain costs and investments outside of the general rate case, reducing administrative burden and regulatory lag. Specifically, trackers monitor actual costs relative to costs estimated through a historic or future test year; they allow the utility to recover expenditures on an on-going basis by adjusting rates quarterly or biannually for certain categories of costs, which means utilities do not have to wait for the next rate case to recover those costs.[161] Riders adjust customer bills for any "unfunded" tracker amounts.[162] Typically, trackers and riders require regulatory review and approval in a general rate case or in an advance ratemaking principles proceeding in order to be applied to customer rates. If approved, these mechanisms allow the utilities to address unrecovered costs that can arise during operations.

Iowa has various trackers and riders for the rate-regulated electric, gas, and water utilities:

- for regulated electric utilities, they cover costs associated with taxes; transmission; fuel; EE, DR, and renewable energy programs; rate case expenses ("RCEs"); economic development incentives[163], compliance with certain government mandates; and the recovery of rate discounts provided to customers,[164] among others;

- for regulated gas utilities, they cover pipeline safety maintenance, EE expenditures, payments to incentivize customers to fulfill all their energy needs with firm gas (as opposed to petroleum-based fuels), and discounts for customers who will increase consumption (or become a new user) because of such discounts,[165] among others; and

- for regulated water utilities, trackers include distribution system improvements and non-recurring expenses.

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[161] Citizens Action Coalition. "The Utility Agenda: Trackers." Web. Accessed October 4, 2023.

[162] NARUC. *Electric Utility Cost of Service and Rate Design.* June 2009.

[163] See, for example, IPL's Economic Development Rate (which supports the rate-regulated electric utility's ability to offer discounts to customers to incentivize them to stay on the system or increase electric consumption) or Infill Economic Development Rate (applicable to new large customers locating to an eligible redevelopment area).

[164] See, for example, MidAmerican's Mitigation Cost Recovery Adjustment, which recovered the costs of discounts provided to certain customers through the Increase Mitigation Adjustment rider (introduced to help mitigate bill increases resulting from rates approved in Docket No. RPU-2013-0004).

[165] See, for example, the Black Hills' Economic Development Discount and Incentive Rate, which covered the costs associated with discounts offered to customers in exchange for enhanced load or the commencement of new operations.

Some trackers are included in Iowa Code while others have been a result of contested case proceedings. The IUB reviews trackers for inclusion in rates to ensure that the rate-regulated utilities are properly recovering the costs of providing services to customers and the expenses associated with programs and policies provided for in Iowa Code, such as EE and DR programs, transmissions costs, and safety maintenance expenses.[166]

Two important trackers in the Iowa context include the EAC for electric utilities and PGA for gas utilities. The EAC adjusts a portion of customer rates according to changes in costs incurred by the rate-regulated electric utility, such as amount of fuel, transportation costs, emissions allowances, and other relevant costs.[167] The rate-regulated utility submits all invoices and data to the IUB, as well as an explanation of the difference between forecast and actual wholesale energy market costs.[168] Rate-regulated gas utilities are also able to pass through fuel costs to customers through the PGA, which regulates any over- or under-collections of fuel commodity and storage costs accrued over the course of the 12-month period ending May 31.[169, 170] The IUB periodically conducts contested case proceedings to evaluate the reasonableness and prudency of a rate-regulated utility's gas procurement and contracting practices.[171] As part of the periodic prudence review,[172] a gas utility must file a complete gas procurement plan describing the expected sources and volumes of its gas supply. If the IUB determines that a rate-regulated utility is not all taking reasonable actions to minimize its fuel costs, the IUB will disallow recovery of any purchased gas costs in excess of costs incurred under responsible and prudent policies and practices. This

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[166] Iowa Legislature. *Public Utility Regulation, Iowa Code chapter 476*.

[167] Rate-regulated utilities can make (and file) monthly adjustments or: file the required information on a quarterly basis, file a reconciliation and update of the EAC annually, and file a semiannual adjustment if cumulative over- or under-recovery is more than 20% of the forecasted EAC net recoverable energy costs for the year. Source: Iowa Administrative Code. *Electric energy automatic adjustment, 199 IAC 20.9(3).*

[168] Iowa Administrative Code. *Electric energy automatic adjustment, 199 IAC 20.9(476).*

[169] Iowa Administrative Code. *Purchased gas adjustment (PGA), 199 IAC 19.10(476).*

[170] The February 2021 polar vortex (and the resulting high gas prices resulting from this extreme weather event) initiated a discussion in Iowa on the costs recoverable through the PGA. In Docket Nos. PGA-2020-0150, PGA-2020-0156, PGA-2020-0222, and PGA-2020-0225, the OCA made two recommendations to the IUB with respect to the PGA. First, it recommended that the IUB open a contested case proceeding for each utility to conduct a prudency review of vortex-related costs. Second, the OCA recommended that the IUB open periodic contested case proceedings for each utility to review the utilities' procurement plans, specifically to check the extent to which these plans help protect consumers from extreme weather events. With respect to the former, the IUB made a determination that a contested case proceeding would likely not result in the desired outcome and had no reason to believe that the utilities' actions were unreasonable; the IUB allowed the utilities to defer fuel costs over a period that is longer than the 12-month PGA year. With respect to the latter, the IUB made a determination that periodic contested case proceedings investigating the utilities' fuel procurement plans are unnecessary given the detailed information provided to the IUB by the utilities in PGA proceedings (i.e., an additional contested case proceeding would be duplicative).

[171] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(11)*; Iowa Administrative Code. *Periodic review of gas procurement practices, 199 IAC 19.11(476).*

[172] "Periodic" is not explicitly defined in Iowa Code section 476.6(11).

disallowance is implemented via a prospective adjustment to the utility's PGA.[173] Additional trackers utilized by Iowa rate-regulated utilities as allowed by Iowa Code and the IAC are discussed in Appendix 3.

These trackers along with other automatic adjustment mechanisms are included in customer rates as line items in addition to the base rate, accounting for an average of 82% of the gas utilities' residential total rates and 24% of the electric utilities' residential total rates in 2022, as shown in Figure 22 below. These rough averages were calculated as the total percentage of riders relative to the sum of the residential base rate and rider expenses (using a monthly average of rider expenses in 2022).

$$Rider\ \%\ of\ total\ rates = \ average\left(\frac{rider\ expenses}{base\ rate + rider\ expenses}\right)$$

The percentages in Figure 22 show the importance of riders and adjustment clauses for Iowa utilities as a mechanism for recovering costs, particularly for gas utilities.

Figure 22. Electric and gas rate-regulated utility rider expenses relative to residential total rates (2022)

	Gas				Electric	
	IPL	MidAmerican	Liberty Utilities	Black Hills Energy	IPL	MidAmerican
Rider % of total rates	71%	94%	72%	89%	36%	12%

Note: Base rates used above are an average of summer monthly base rates and do not include monthly service charge, which is charged in $/month.

Source: IUB – IOU_Gas_&_Electric_Rates_-_5_Years.xlsx.

Though administratively efficient, according to these calculations, automatic adjustment mechanisms in Iowa make up a disproportionately high portion of electric and gas total rates. This appears to indicate that some cost categories may actually be in the control of utility management, in which case the costs would be better suited for the base rate rather than automatic adjustment mechanisms.

Section 6 provides a more detailed discussion of the trackers and riders used in rates for Iowa utilities.

[173] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6.*

5.3 Evaluation for improvements of the adequacy and efficiency of Iowa ratemaking laws and procedures

LEI defines "adequacy" as comprehensive authority on the part of the IUB to oversee utility rates and services that meet policy objectives; "efficiency"[174] is based on the outcomes of regulation—namely, whether the rates and utility services meet basic regulatory principles like Bonbright. Based on LEI's assessment and conclusions provided in Section 5.2 and summarized in Figure 23, some improvements may be possible to Iowa's laws and procedures to improve the adequacy and efficiency of the ratemaking process in Iowa. These are discussed in the subsections below.

Figure 23. Summary of LEI's assessment of current ratemaking mechanisms

Ratemaking component	Areas for improvement for adequacy	Areas for improvement for efficiency
General rate case	The IUB has strong authority over proceedings, but is at an informational disadvantage to initiate a general rate case	Few rate cases means utility costs may have diverged from rates, which reduces efficient consumption on the part of consumers and efficient operating and investment decisions on the part of the utility
Advance ratemaking	Relatively weak evidentiary requirements; reduced opportunity for comprehensive cost review	Ratepayers cover the costs of resources for which there is a low bar to demonstrate compliance with statute; utility is not held to a high standard in demonstrating benefit, need, and prudency
Trackers & riders	The IUB has the authority to accept, reject, or refine trackers & riders proposed by the utilities	Trackers & riders that make up majority of costs may dilute cost containment incentives
Revenue sharing	Safeguards against utility overearning but also allows the utilities to stay out from the general rate case	Lower depreciation expense results in lower rates but actual utility costs may have diverged from what is reflected in rates
Energy efficiency/ demand response	Restrictions on cost limit based on annual revenues, preventing more widespread application of EE/DR programs	More widespread adoption of EE/DR could help lower bills and investment in large-scale infrastructure
Resource planning	No such mechanism in place; the IUB lacks information from utilities on long-term resources	Utility long-term plans are unknown

5.3.1 Criteria for the evaluation of adequacy and efficiency of ratemaking laws and procedures

Public utility commissions ("PUCs") were originally founded in the 1900s with the purpose of ensuring equitable and quality service. Since then, the purpose of the regulator has more broadly developed to ensure that the services provided by the state's public utilities are—through rate

[174] The policy objectives as provided in HF 617 are to ensure "safe, adequate, reliable, and affordable utility services provided at rates that are nondiscriminatory, just, reasonable, and based on the utility's cost of providing service to its customers within the state." In addition to these objectives, IUB staff requested that LEI also focus on the "efficiency" of current laws and procedures.

design—adequate, efficient, fair, non-discriminatory, affordable, just, and reasonable through rate adjudication and determinations on, for instance, infrastructure, resource development, and quality of service. The regulator balances the interests of ratepayers, the utilities it regulates, and other stakeholders. It is also the purpose of regulation to oversee that state public policy goals are met. The Energy Information Administration ("EIA") broadly defines regulation as "the government function of controlling or directing economic entities through the process of rulemaking and adjudication."[175]

Generally, PUCs in the US are responsible for:

- ensuring that utility rates are adequate, efficient, just, and reasonable;
- ordering service quality improvements;
- resource planning (or overseeing utility planning) and approval of the construction and siting of infrastructure, or otherwise overseeing utility investments;
- determining incentives to achieve funding for and compliance with achieve clean energy and decarbonization targets;
- enforcing standards and rules (once adopted) and imposing remedies if a utility is found to be in violation of these standards and rules;
- accepting and taking into consideration evidence from public stakeholders in proceedings (which include, but are not limited to, proceedings related to rates, rulemaking, IRP determinations, quality of service issues, customer complaints, rule enforcement, and EE design and funding);
- approving mergers and acquisitions, asset transfers, and other transactions; and
- issuing certificates (for example, pursuant to water quality), among other functions.[176]

Chapter 476 of Iowa Code gives the IUB the general authority listed above, but in practice enforcement is challenging. For instance, for both electric and gas, the IUB has the authority to conduct rate proceedings (during which it can make determinations on the reasonableness and prudency of contracting practices and rates), require utilities to file demand forecasts and make

[175] EIA. "Glossary." Web. Accessed October 4, 2023.

[176] This list is illustrative of the role of the regulator in the context of regulation in US jurisdictions, meant to provide examples of the portfolio of powers that the regulator typically has. For more, please see: National Conference of State Legislatures. "Engagement Between Public Utility Commissions and State Legislatures." Web. October 28, 2019; EPA. *An Overview of PUCs for State Environment and Energy Officials*. State Climate and Energy Technical Forum Background Document. Web. May 20, 2010; "What FERC Does." US Federal Energy Regulatory Commission. Web. Accessed October 2, 2023; Ervin IV, Sam J. *The State of Energy Regulation in the United States*. NARUC Committee on Electricity. Web. Accessed October 2, 2023; Duncan, Jake, and Julia Eagles. *Public Utilities Commissions and Consumer Advocates: Protecting the Public Interest*. National Council on Electricity Policy Mini Guide. Web. December 2021.

determinations on peak-load energy conservation, among other powers. However, on an ongoing basis, the IUB is limited in the information it has available to determine whether a rate case should be initiated. With respect to EE, the IUB also has the ability to modify programs, adopt new rules, approve budgets, as well as evaluate the cost effectiveness, reasonableness, and prudence of such programs and initiatives in a contested case proceeding—but it is limited in expanding EE/DR given the legislatively mandated cost cap. Moreover, the IUB has the ability to investigate the reasonableness of rates, charges, schedules, service, regulations, or any other facet of regulation subsequent to a written complaint being filed by either a public stakeholder or the IUB itself but is limited in its ability to initiate a rate case from a practicality standpoint.

Measuring the efficiency of ratemaking procedures involves assessing various factors to determine how well the procedure results in outcomes that align with generally accepted regulatory principles. It can be evaluated through the lens of criteria developed by Professor James C. Bonbright in his widely cited work *Principles of Public Utility Rates* (1961).[177] Specifically, Bonbright found that there are three primary criteria underpinning sound rate design: (1) ability of the utility to recover its revenue requirement, (2) fair distribution of costs among recipients of the utility's services (i.e., ratepayers), and (3) the economically efficient use of public funds by the utility. In addition to these core criteria, second order (or "ancillary") ratemaking criteria of sound rate design include the following:

- simplicity, understandability, public acceptability, and feasibility of the rate design;
- easily interpretable;
- the provision of stable revenues for the utility;
- rate stability; and
- and the ability to avoid discrimination in rates.[178]

In other words, a sound ratemaking process should encourage efficient investments, consumption, and operations on the part of the utilities, while not being overly complex or administratively burdensome. In this regard, current ratemaking practices in Iowa may not necessarily be efficient. For instance, Iowa Code chapter 476 does not require regularly recurring rate case proceedings; this reduces administrative burden and implies utility revenue stability (were this not the case, utilities would more regularly request rate changes through a rate case proceeding) but prevents the IUB from regularly checking that rates reflect actual utility costs. The most recent electric rate case for MidAmerican was filed in 2013—MidAmerican's first electric rate case in the 16 years prior, during which time the IUB could not assess the economic efficiency of rates.

[177] Bonbright, James C. *Principles of Public Utility Rates*. Web. 1961.

[178] Ibid.

Rate cases in Iowa have also tended to be settled rather than fully litigated. A rate case that is decided through a settlement can often be more efficient than one that is fully litigated. For one, a fully litigated case can be a lengthy process, involving extensive discovery, testimony, cross-examination, and sometimes appeals. Settlements can often resolve matters more quickly, but not without completing extensive discovery and review by the IUB (which the IUB uses to determine whether a settlement is reasonable). Consequently, a fully litigated case can be expensive. Moreover, settling provides an added degree of flexibility, allowing for more bespoke and mutually agreeable terms. A shortened process means freeing up regulatory staff for other proceedings, which is a reduction in regulatory burden—this supports the Bonbright criterion of administrative ease. Nevertheless, a faster process does not equate to increased efficiency or better results for all parties—a goal of swiftness can come at the cost of achieving many other reasonable attributes. One of the key drawbacks of having all rate cases settled is that, when reviewing rate cases, it is harder for the regulator to utilize review standards or methodologies developed in previous rate cases since those standards or methodologies were not explicitly approved in previous rate cases. There are several examples of new mechanisms that were agreed upon in Settlement Agreements, such as the RES and revenue sharing, as discussed earlier. As such, the methodology used to review each rate case may not be consistent.

Greater insight into these adequacy and efficiency findings in the context of each ratemaking mechanism is provided in the subsections that follow.

5.3.2 The IUB should have greater authority to initiate a general rate case and utilize all evidence submitted into the dockets

LEI finds that the IUB's authority is generally adequate and efficient given that:

- the IUB process allows for extensive discovery as part of the rate case proceeding (and prior to Settlement Agreements) to determine whether rates are just and reasonable;
- rate cases for rate-regulated electric, gas, and water utilities are mostly settled, either unanimously or non-unanimously;
- rate case duration is relatively short—limited to a 10-month period (and cadence of regulatory lag also supports a reduced administrative burden); and
- the IUB can initiate a general rate case through its investigative authority per statute.

Nevertheless, there are several drawbacks (inefficiencies) to the general rate case process:

- there is no provision that limits the number of years that the rate-regulated utility can go without filing a rate case;
- despite its investigative powers, the IUB faces significant informational asymmetry in "converting" an investigation into a general rate case; and

- due to this informational asymmetry, utilities have more control over the cadence of general rate cases, which means limited opportunities for the IUB to evaluate and determine (update) rates and programs.

Informational asymmetry serves as an impediment for the IUB to initiate rate case reviews. The regulator does not appear to have sufficient information from the rate-regulated utilities to justify the need for a rate review. While the IUB holds significant authority, those authorities are not always invoked when they legally could be. Reviewing the Iowa dockets reveals that the IUB has not initiated a rate case despite having the investigative authority to do so. This has supported efficiency in the form of a decreased number of rate cases received from each rate-regulated utility and relatively quick rate case proceedings, but it has not encouraged proactive investigations of potential issues including investment efficiency and rate design. According to stakeholder commentary in the policy charrettes and submitted written comments, there is no consensus as to the efficiency of investments made by the utilities, or an understanding of what future investments may be required and how those investments would impact rates. This uncertain compliance with Bonbright's criteria of economic efficiency and rate stability suggests ratemaking inefficiency.

The IUB and stakeholders also do not have information about rate-regulated utilities' investment plans into the future and there is no expectation in Iowa law for the rate-regulated utilities to perform any recurring, multi-year, long-term resource planning study.[179] Additionally, rate-regulated gas utilities only have to file a supply plan and not an IRP (that considers both distribution system investment and supply), while the rate-regulated water utility does not have any regulatory requirements regarding its business plans. The IUB may, as such, see benefits to introducing a regular long-term resource planning requirement through which the utilities provide transparent information on their future plans.

Moreover, in terms of the adequacy of current laws and procedures, the IUB should be able to utilize all submitted comments by stakeholders as evidence (rather than just becoming part of the permanent case file), which supports the IUB's ability to make a determination on rate design. Giving the IUB access to additional information that is submitted or brought forth during a rate case proceeding allows all stakeholders the opportunity to have a clear understanding of the information available to the IUB when making its decision.

Lastly, the lack of a stay out provision—while administratively efficient—has led to a situation where re-basing (or a review that ensures the alignment of utility costs with rates) has not been completed in over a decade. This means that the IUB cannot have certainty that MidAmerican's rates are still cost-reflective. This situation can (in part) be attributed to the revenue sharing mechanism, as discussed in Section 5.2.4. Cost-reflective rates would do a better job at incentivizing rational consumption on the part of ratepayers and efficient operations on the part of the rate-regulated utilities.

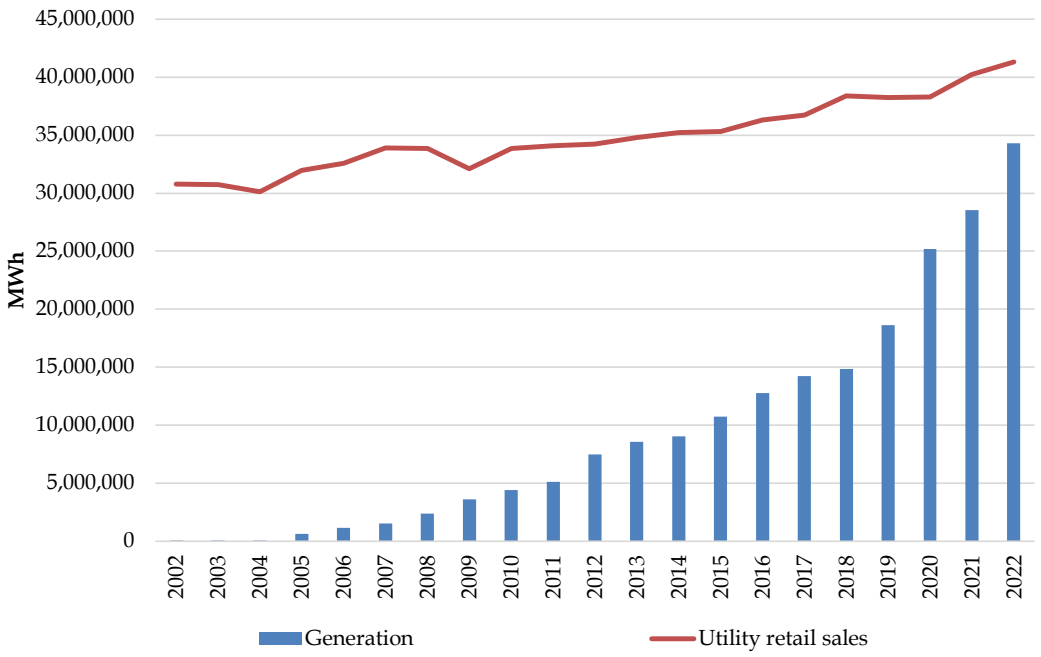
[179] Long-term resource planning is not mandated through Iowa law. However, recent advance ratemaking settlement agreements included a provision that both IPL and MidAmerican complete RES assessments.

5.3.3 Advance ratemaking applications should undergo greater scrutiny and be paired with a resource planning study

For the electric industry, advance ratemaking (with the combination of revenue sharing, discussed in Section 5.2.4) has resulted in fewer general rate cases, supporting administrative efficiency by not requiring prudency review of the approved assets in ensuing general rate cases. While there is no set duration for an advance ratemaking proceeding, the process usually takes two years or less (including rehearing and settlement)—so not necessarily shorter than a general rate case.

The mechanism has encouraged rate-regulated utilities to pursue clean energy generation by removing prudency risk—as a result, wind capacity accounts for 62.7% of generated electricity. As of 2022, Iowa has 12,200 MW of installed wind capacity; under advance ratemaking, since 2008, nearly 5,300 MW of wind generation has been approved for MidAmerican, and since 2016, nearly 1,000 MW of wind generation has been approved for IPL. Total wind generation in Iowa jumped from about 13.4 GWh in 2002 to 45,760 GWh in 2022, or as much as 83% of total annual electricity consumption by retail customers of MidAmerican and IPL—this trend is depicted in Figure 24. Most recently, the IUB approved advance ratemaking principles for 400 MW of solar.[180]

Figure 24. Wind generation and retail electricity consumption, MidAmerican and IPL (2002-2022)



[180] IPL's initial application for advance ratemaking principles included a solar plus battery energy storage system project, which the IUB denied. Source: IUB. *Rehearing Final Order*. Docket No. RPU-2021-0003. October 19, 2023.

Notes: This chart provides wind generation by wind facilities owned by MidAmerican and IPL. Utility retail sales likewise reflect retail sales (all sectors) of MidAmerican and IPL as reported by the EIA.

On top of wind generation, advance ratemaking also encouraged the construction of gas-fired facilities. As of 2022, Iowa has about 3,600 MW of installed gas capacity (which accounts for just under 10% of generated electricity). Under advance ratemaking, 578 MW of gas has been approved for MidAmerican and 1,267 MW of gas has been approved for IPL. Thus, a significant portion of Iowa's electric demand is already being met by wind and gas generation alone. The legislature may choose to investigate the extent to which advance ratemaking for generation assets is still a necessary policy.[181]

Though advance ratemaking has helped the state reach reliability and environmental objectives, there have also been consequences to advance ratemaking. Namely, there have been reduced opportunities for the IUB to perform a comprehensive review of a rate-regulated utility's total cost of service and rate review (and generally a review of overall utility expenditures). The authorization of higher fixed ROE levels for approved generation assets magnifies this concern. Stakeholders have expressed concern that advance ratemaking may be shifting the risk of cost recovery from rate-regulated utilities to ratepayers. Also, given the precedent set by the Zond decision, advance ratemaking applications for wind facilities also do not have to obtain a generating certificate from the IUB, further reducing the regulatory scrutiny of proposed infrastructure projects.

For the water industry, review of acquisitions and proposed ratemaking principles by the IUB ensures just and reasonable rates will be in effect upon final approval. By setting a threshold fair market value that determines what acquisitions require the IUB's oversight, legislation reduces regulatory lag and administrative burden. Nevertheless, the IUB may find it necessary to reconsider the level of this fair market value price threshold, specifically to determine whether it should be increased (to incentivize acquisitions below the threshold limit) or remain unchanged.

Iowa may want to consider introducing a periodic resource planning process akin to the IRP process implemented in other states with vertically integrated rate-regulated utilities. Currently, IPL has submitted resource plans as a result of Settlement Agreements (ex. Docket No. RPU-2019-0001), but this is not a universal requirement for rate-regulated utilities. Under advance ratemaking, cases have not required the rate-regulated utilities to justify their investment in great detail, although Iowa Code section 476.53(3)(c)(2) requires that "the rate-regulated public utility has demonstrated to the board that the public utility has considered other sources for long-term electric supply."[182]

[181] Some stakeholders participating in the policy charrettes also questioned the need for advance ratemaking in light of new federally-introduced incentives for the construction of wind and solar facilities, like the Inflation Reduction Act. They expressed interest in understanding how these federal-level incentives could interact with and/or impact existing state incentives.

[182] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.53(3)(c)(2).*

5.3.4 The EE/DR spending cap should be raised or eliminated, and the opt-out policy should be revisited

Laws and procedures for electric EE/DR and gas EE programs have given the IUB the authority to conduct a rate case proceeding to develop capacity and performance standards as well as to review utility EE/DR plans. The IUB also has access to information on program outcomes—utilities file annual reports with the IUB that compare actual energy and demand savings. As such, the IUB carries out its duties according to Iowa Code section 476.6, which provides adequate authority for it to oversee and regulate EE/DR programs and plans. Nevertheless, the law limits the impact that this ratemaking mechanism could have on potential energy savings from customer energy usage; other types of resources are not similarly capped. Peer states in the MISO/SPP region have not placed restrictions on EE/DR implementation—this has resulted in an increased amount of electricity savings for retail sales in these states relative to Iowa's savings. It may be beneficial to assess and incorporate EE/DR as part of a comprehensive integrated resource planning process.

In addition, the ability of customers to opt-out based on the results of a RIM test further reduces the positive ratepayer impacts of EE/DR programs. It is recommended that any changes to the EE/DR spending cap be complemented by either a higher threshold for opt-out, a review of the best cost-effectiveness test to determine whether exemption from EE/DR programs is justified, or the removal of such option. The RIM test may not be the most appropriate to reflect the benefits of EE/DR. According to 199 IAC 35.2, the benefits of an EE or DR measure of program is calculated as the present values of the utility's (1) avoided capacity and energy costs and (2) revenue gains from the implementation of an EE/DR program over the life of the program. This definition of benefits does not account for reduced load (and reduced need to construct new generation to meet load) and the energy savings enjoyed by ratepayers. As such, the RIM test may understate the value of EE/DR relative to the costs associated with implementing such programs of measures. This puts EE/DR at a mathematical disadvantage in the calculation of the RIM test; programs or measures that have failed to meet the threshold score of 1.0 may have passed other cost-effectiveness tests that better reflect other benefits of EE/DR.

Because EE leads to lower load being served, this can impact the utility's ability to recover costs of service; a revenue decoupling mechanism is typically introduced as a way to mitigate utility revenue loss resulting from demand-cutting initiatives. Therefore, to address utility concerns surrounding revenue recovery, the IUB may want to consider such decoupling mechanisms should the Iowa Legislature update the state's EE/DR policy.

5.3.5 Revenue sharing may remain, but should not be used to avoid periodic rate case proceedings

As a reconciliation mechanism, revenue sharing does not impact the rates charged to customers; MidAmerican collects revenues from other sources (not related to rates, such as wholesale market activities), and those go into the calculation of revenues that are to be shared with customers in the form of the accelerated depreciation of MidAmerican's assets. As of February 2023, over $900

million has been shared via this mechanism,[183] and between 2018 and 2022, actual ROE exceeded allowed ROE by 79-118 basis points.[184] MidAmerican's upside-only revenue sharing scheme has contributed to it staying out of rate cases, which stakeholders have argued supports administrative efficiency; MidAmerican has had only had two electric rate cases since the introduction of the mechanism in 1997. Though administratively efficient, fewer rate cases have also meant that the IUB has not had the opportunity to ensure that current rates reflect utility costs. Because revenue sharing is the result of a Settlement Agreement, the IUB may want to consider proposing amendments to Iowa law that introduce a limit on how long utilities can avoid filing for a general rate case. This would allow utilities and customers to continue benefiting from revenue sharing but would not allow utilities to use the revenue sharing mechanisms as a tool to avoid a general rate case filing for an extended period of time.

5.3.6 Trackers, riders, and other adjustment mechanisms in Iowa should be reviewed, as some costs may be better collected through base rates

Iowa's tracker and rider mechanisms are generally efficient in that they allow utilities to recover expenditures on an on-going basis through monthly, quarterly, annual, or biannual rate adjustments pertinent to certain cost categories. The IUB has also, in the past, been able to reject requests for trackers and riders when they were not just and reasonable. While this allows the utility to avoid a general rate case (or advance ratemaking proceeding) without impacting cost recovery, some of the costs may be best reviewed in rate cases as—in principle—trackers and riders do not create a strong incentive to seek out cost efficiencies. LEI's calculations indicate that trackers make up 71-94% of 2022 gas total rates paid by residential customers, while trackers for electric utilities make up 12-36% of 2022 electric total rates paid by residential customers—indicating that a large portion of rates originate outside of rate base.

[183] MidAmerican Energy Company. *Iowa Revenue Sharing Presentation*. February 10, 2023.

[184] Determined based on annual revenue sharing filings in Docket No. RPU-2013-0004.

6 Review of historical rates and tariffs of Iowa rate-regulated utilities

Key findings

- Average electric rates for the past ten years have mirrored inflation trends with residential customers consistently paying higher rates than C&I sectors.
- Despite being the highest among customer classes, residential electric rates have shown slower growth, averaging 2.9% for IPL and 2.4% for MidAmerican from 2013 to 2022. Meanwhile, industrial electric rates experienced higher average growth rates at 3.2% and 4.1% for IPL and MidAmerican, respectively.
- IPL consistently maintains higher electric rates than MidAmerican, due to its customer base (mostly rural customers) and business model (it does not currently own any transmission assets).
- Automatic adjustment mechanisms have been a growing and substantial portion of the rate-regulated electric utilities' total bills and operating revenues. For the past decade, trackers and riders have accounted for 35.1% and 48.1% of IPL's residential and commercial customers, respectively. The share of the trackers and riders for MidAmerican's residential and commercial customers was lower than IPL, with an average of 6.5% and 14.7% per annum, respectively, for the same period.
- The EAC and transmission cost riders have the largest portions of the electric rates for both IPL and MidAmerican. In the case of IPL, the RTS and EAC constituted a significant portion, averaging 17.7% and 16.0%, respectively, for its residential customers over each year. For MidAmerican, the share of its TCA and EAC comprised on average 1.8% and 3.2% per year for the past ten years.
- Over the past decade, gas rates have increased in line with Henry Hub gas prices, with Black Hills consistently exhibiting the highest average gas rates. Residential customers had the highest rates, while industrial customers had the lowest rates.
- The PGA represents the most significant component among the trackers and riders for gas utilities, but in terms of the total gas price, it accounts for approximately 55.5%, 83.7%, and 48.0% of gas costs for residential customers of IPL, MidAmerican, and Black Hills, respectively.
- IAWC's water rates rose moderately over the past decade due to incremental growth in base rates and the absence of charges on the capital investment tracker.

To review the electric rates of rate-regulated utilities, LEI assessed the different components of the revenue requirements, namely the rate base, allowed rate of return ("ROR"), operating expenses, and sales trends. Subsequently, LEI evaluated the different elements comprising electric rates by conducting an in-depth analysis of base rates and automatic adjustment mechanisms across residential, commercial, and industrial customer segments, with the aim of explaining prevailing trends. Furthermore, LEI performed a comparative evaluation of rates

across various rate-regulated utilities, examining the factors contributing to observed rate differences.

6.1 Electric industry

Electric rates are composed of two primary components: the 'base rate' and automatic adjustment mechanisms known as riders and trackers. The base rate comprises fixed and variable costs. The fixed cost, billed monthly ($/month), remains constant in each billing period regardless of the customer's electricity consumption, while the variable cost depends on actual electricity usage and is charged in $/kWh. This will be discussed in Section 6.1.4.

Apart from the base rates, consumers also pay for the riders and trackers. These mechanisms serve to recover costs beyond the base rate that are outside the rate-regulated utilities' control. In Iowa, various examples of riders and trackers are used, including the recovery of energy (fuel) expenses, costs for EE and DR programs, purchased power, emission allowances, as well as transmission costs regulated by the Federal Energy Regulatory Commission ("FERC"), and expenses associated with rate cases. Section 6.1.5 provides a detailed discussion on riders and trackers.

To determine the electric rates, a rate-regulated utility calculates the revenue requirement, which is the expected amount of revenue it requires to cover its costs of providing utility service, including the cost of the capital invested. Revenue requirement comprises three primary elements: the rate base, the ROR, and operating costs that include O&M expense, depreciation, and taxes. These are discussed in the succeeding subsections.

6.1.1 MidAmerican's rate base per customer has been higher than IPL due to its transmission assets

The rate base is comprised of investments made by the utility to provide electric service and includes the net cost of plant in service, inventories of fuel and other materials, and regulatory assets. The rate base is the investment base to which an ROR is applied to arrive at the allowed return for the rate-regulated utility. At a high level, the rate base at the end of a year is calculated as the sum of the net book value of physical and regulated assets at the beginning of the year, plus the annual CapEx, and minus the annual depreciation /amortization of assets.

The rate base per customer has increased annually over the past decade for the two rate-regulated electric utilities. This increase can be attributed to additional investments in plant and infrastructure. For example, IPL started its deployment of automatic metering infrastructure in October 2017.[185] This infrastructure and IPL's new wind capacity were included in the rate base.[186]

MidAmerican's ratio of rate base to the total number of customers grew by an average of approximately 10.2% per year between 2013 and 2022 (see Figure 25). The rate base increased

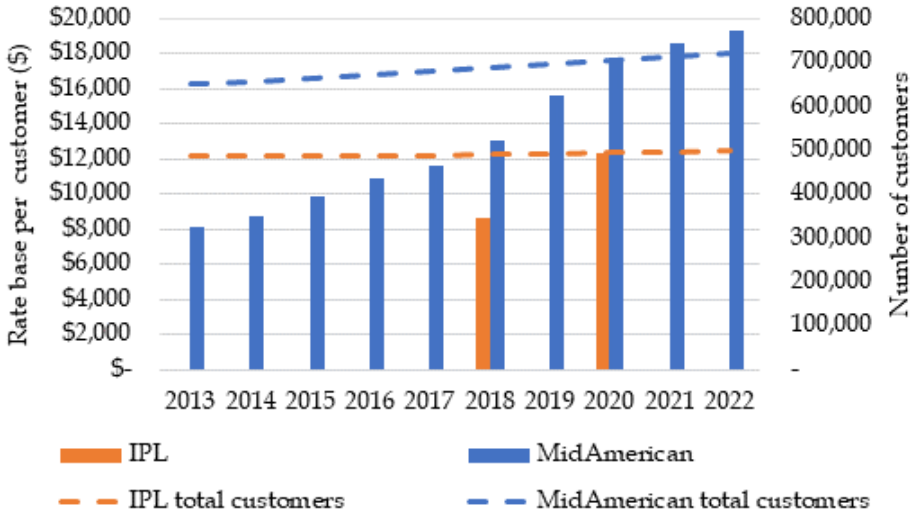
[185] IPL. *Letter to the Iowa Utilities Board Docket No. C-2018-0007*. May 31, 2018.

[186] IUB. *Final Decision and Order*. Docket No. RPU-2019-0001. January 8, 2020.

faster, averaging 11.5% per year, while the total number of customers rose by only 1.9% per annum on average. Likewise, IPL's rate base rose by 45% from 2018 to 2020, but its customers only increased by less than 1.0% during this period.

MidAmerican's rate base per customer exceeds that of IPL, reflecting a greater investment in capital assets and infrastructure. This elevated rate base per customer can be attributed to MidAmerican's ownership of transmission facilities. IPL, on the other hand, divested its transmission assets to ITC Midwest in 2007, excluding these assets from its rate base.

Figure 25. MidAmerican and IPL's rate base per customer and number of customers



Note: Rate base numbers for IPL are only available for the years when the rate decision was issued. The rate base figures presented for MidAmerican from 2014-2022 include assets that have not yet been incorporated into the electric rates because MidAmerican has not filed for a rate case since 2013.

Sources: Rate base figures for MidAmerican are from its Revenue Sharing filings, while IPL's rate base numbers are from the IUB Order for RPU-2017-0001 and RPU-2019-0001; Number of customers came from the Utility Annual Reports.

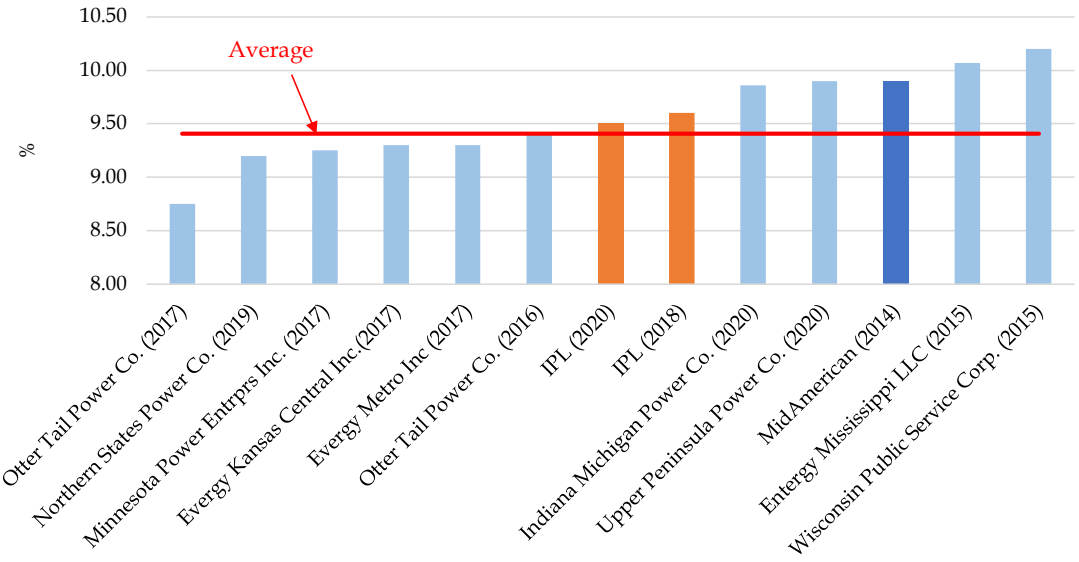
6.1.2 Authorized ROEs for IPL are in line with the average authorized ROEs of other electric utilities in the peer states reviewed while MidAmerican's is slightly higher than average

The second component of the revenue requirement is the allowed ROR. This is expressed as a percentage and essentially represents the amount of return that investors will receive on their investment—the asset base. In essence, determining the allowed ROR involves striking a balance between two equally vital goals: encouraging ongoing investment in the sector and guaranteeing that customers are charged fair and reasonable rates. There is ultimately no single correct allowed ROR but rather a 'zone of reasonableness' within which judgment must be exercised. Indeed, the

IUB recognizes this in its rate case decisions and notes that the ROE set needs to be "at a level that is commensurate with the returns of companies with comparable risks."[187]

The authorized ROEs of IPL and MidAmerican[188] granted in their last electric rate cases are slightly higher than the average ROEs of comparable electric utilities in the five peer states, as presented in Figure 26.[189] However, it is important to highlight the differences in commission-authorized ROEs, which may also reflect variations in the regulatory approach and priorities of the utilities' regulator as well as the perceived risks that the rate-regulated utilities are facing.

Figure 26. Authorized ROE of the rate-regulated electric utilities in Iowa and select utilities in the five peer states with rate cases approved from 2014 to 2020 (%)



Note: The authorized ROE for these utilities became effective from 2014 to 2020, coinciding with the period when the rate-regulated utilities in Iowa's ROE were in effect.

Sources: IPL's ROEs are from the IUB Order for Docket Nos. RPU-2017-0001 and RPU-2019-0001, while MidAmerican's ROE is from the IUB Order for Docket No. RPU-2013-0004. S&P Global.

[187] IUB. *Final Decision and Order*. Docket Nos. RPU-2020-0001 and TF-2020-0250. June 28, 2021. P. 21.

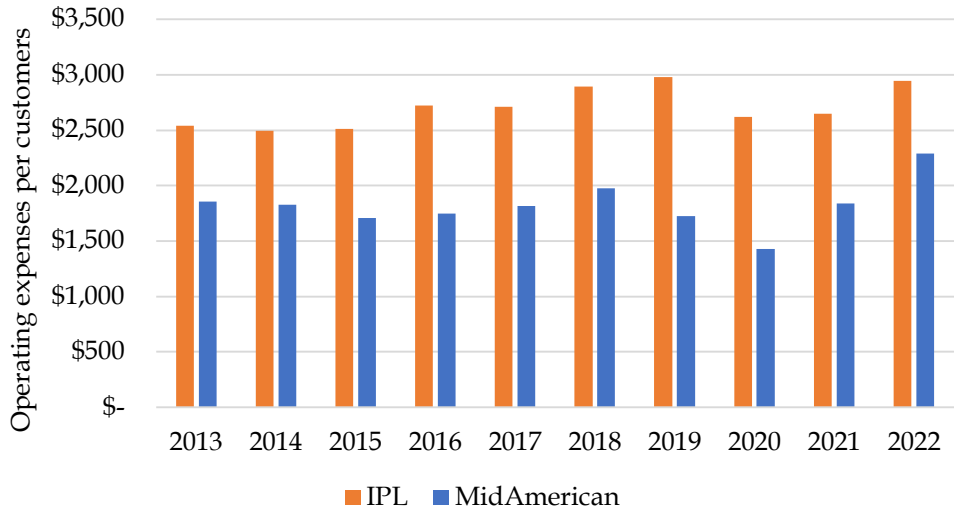
[188] MidAmerican's ROE in Figure 26 is the authorized ROE from its last filed rate case. This is not the ROE granted in advance ratemaking or the blended ROE from combining these two ROEs.

[189] LEI selected the ROE from the latest rate case for utilities that filed multiple cases between 2014 and 2020.

6.1.3 MidAmerican's operating expenses per customer have been lower than IPL's due to economies of scale

The third component of the revenue requirement is operating expenses, which are the costs associated with the day-to-day O&M of the utility.[190] Similar to the evaluation of rate bases, LEI evaluated the operating expenses per number of customers for each electric utility. As shown in Figure 27, MidAmerican's operational expenses per customer are, on average, 33% lower than those of IPL over the 2013-2022 period. This implies that MidAmerican was able to operate and maintain its utility services at a lower average cost per customer compared to IPL. There are several explanations for this. For one, MidAmerican's customers are mostly in the urban areas and therefore, the operating costs to serve them are lower than in rural areas where customers are spread out and less dense. Additionally, MidAmerican has more customers than IPL which promotes the benefits of economies of scale—increased savings on expenses from having more customers and production.

Figure 27. MidAmerican and IPL's operating expenses per customer ($)



Sources: IUB, *Utility Annual Reports* (2013-2022).

6.1.4 IPL has higher average base rate charges in the last several years, which can be attributed to its predominantly rural customer base

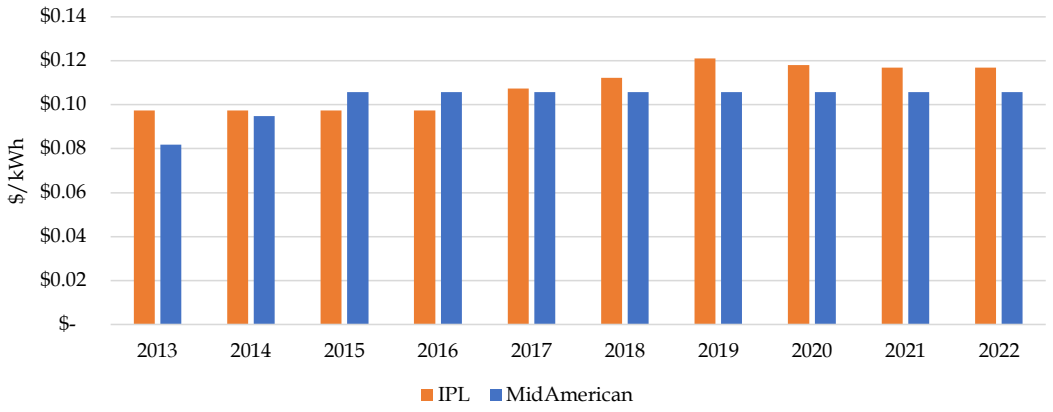
The base rate is one of the primary mechanisms by which the utility collects its revenue requirements. It includes both fixed and variable charges, as discussed earlier. The fixed charge is a monthly fee covering the utility's cost of maintaining and upgrading electrical infrastructure, administrative and regulatory costs, and return on investment. The variable charge is based on the customer's actual electricity usage and is charged in $/kWh. It includes the cost of generating electricity, including fuel, labor, and maintenance costs for power plants. It also includes the cost

[190] Operating costs include fuel costs, purchase power expenses, other O&M costs, depreciation, and taxes.

of delivering electricity to customers. Demand charges, which are usually charged to industrial customers, are additional charges for customers who consume high amounts of electricity during peak periods to help manage the overall demand for electricity.

As shown in Figure 28 and Figure 29, over the past ten years, base rate charges for summer have been higher than for winter months by an average of 19% and 27% for IPL and MidAmerican, respectively.[191] Indeed, MidAmerican's latest Annual Report highlighted that approximately 40% to 50% of its regulated electric retail revenue is concentrated in the months spanning June through September.[192] MidAmerican's summer base rate has remained flat since 2015, while IPL's summer base rate increased by an average of 2.4% from 2015 to 2022. IPL's summer base rate was higher than MidAmerican by an average of 6.1% per year for the past ten years. This can be attributed to its higher O&M expenses per customer, as discussed in Section 6.1.3. In addition, IPL has filed two rate cases from 2013 to 2022 and made several infrastructure investments (as evidenced by the increase in the rate base), which have contributed to the rise in its base rate charges.

Figure 28. Average base rate charges for summer for residential customers ($/kWh)



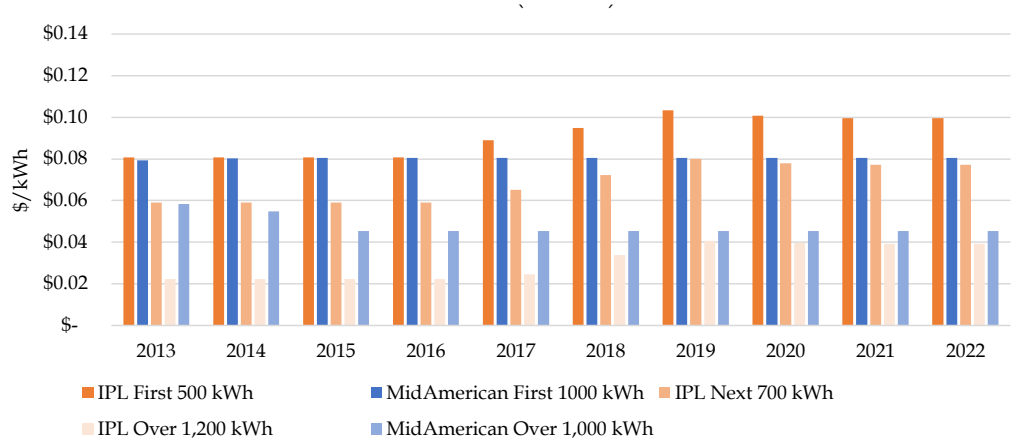
Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

MidAmerican and IPL use a "stepped rate" for the winter months, which varies as energy usage increases. MidAmerican has maintained its base rate charges since its last rate case filing (Docket No. RPU-2013-0004), and they consistently remain lower than IPL's base rate charges for both summer (except for 2014 and 2015) and winter (for the initial 1,000 kWh of electric consumption). Figure 29 presents the average winter base rate charges for residential customers.

[191] LEI compared the summer base rates with the winter base rate for the first 500 kW for IPL and MidAmerican's winter base rate for the first 1,000 kWh.

[192] MidAmerican Energy Company. *2022 Annual Report.* February 2023. P. 12.

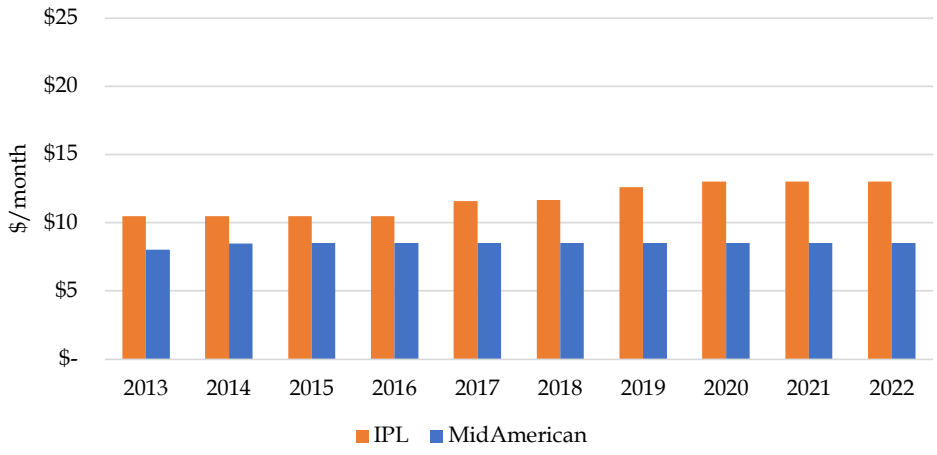
Figure 29. Average base rate charges for winter for residential customers ($/kWh)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

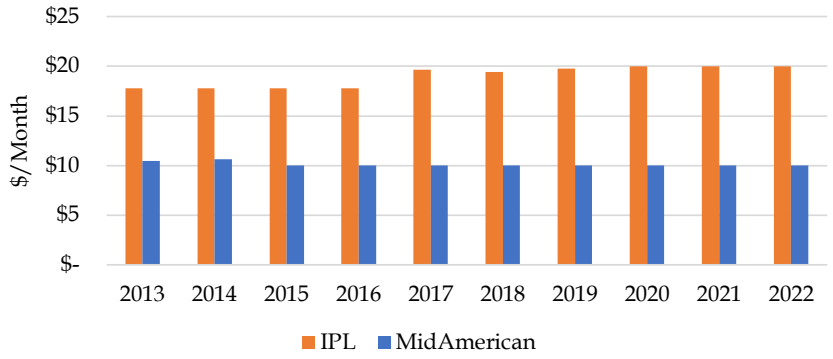
Additionally, the base rate encompasses a monthly service charge, which is a fixed fee charged every month that does not change based on a customer's usage. IPL's monthly service charges are higher than MidAmerican by an average of 38.3% and 88.2% per year for the past ten years for residential and commercial customers, respectively, as shown in Figure 30 and Figure 31. IPL's higher monthly service charge can be attributed to the characteristics of its customer base. As mentioned earlier, IPL serves a predominantly rural customer base, with over 70% of its service area located in rural counties. Serving rural customers typically incurs higher costs due to factors such as greater infrastructure expenses to cover longer distances and lower customer density. These factors contribute to IPL's higher monthly service charge compared to MidAmerican.

Figure 30. Average monthly service charge for residential customers ($/month)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Figure 31. Average monthly service charge for commercial customers ($/month)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

6.1.5 Rate-regulated electric utilities have various automatic adjustment mechanisms that have become an increasing portion of their electric rates and bills in the past few years

Riders and trackers are typically reflected as separate charges on the customer's electricity bill. These charges can be positive or negative, depending on the direction of the cost adjustment, and are designed to ensure that the electricity provider can recover its actual costs and maintain its financial stability.

Iowa Code section 476.6(8) grants the IUB broad authority in implementing adjustment clauses, stating that "[t]his chapter does not prohibit a public utility from making provision for the automatic adjustment of rates and charges for public utility service provided that a schedule showing the automatic adjustment of rates and charges is first filed with the board."[193]

Rate-regulated utilities currently incorporate various riders, trackers, and adjustment clauses into their bills. These include the EAC, transmission cost riders, EE and DR trackers, renewable expense rider, tax expense rider, and RCE rider. This section will focus on the EAC and transmission cost riders.

6.1.5.1 Energy adjustment clause

The EAC is comprised of costs such as energy (fuel) costs, purchased power, emission allowances, and federal PTCs. For IPL, the EAC is adjusted monthly whereas MidAmerican's EAC is reconciled annually, and it is allowed to update semi-annually if certain conditions are present.[194]

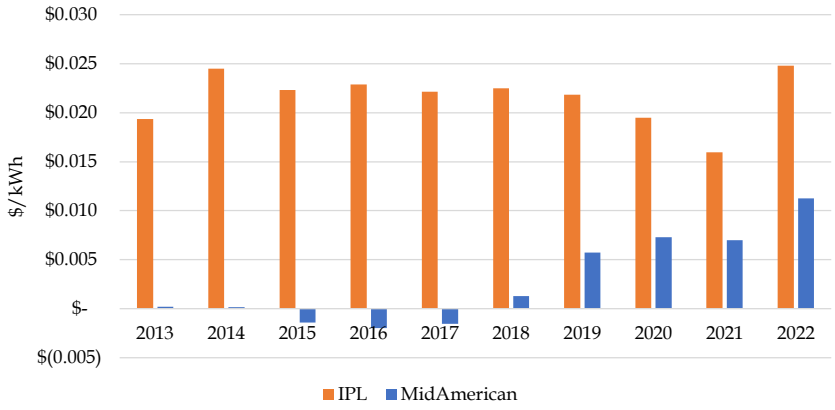
Over the last decade, IPL has consistently maintained higher EAC rates compared to MidAmerican for its residential, commercial, and industrial customers, as shown in Figure 32. IPL's EAC incorporates various riders like the Alternate Energy Production ("AEP") rider, Tax

[193] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(8).*

[194] Iowa Administrative Code. *Electric energy automatic adjustment, 199 IAC 20.9(476).*

Benefit Rider ("TBR"),[195] energy (fuel) costs, and RCE.[196] Among these components, energy costs have been the primary contributor to the EAC. For instance, for the residential customers, energy costs represented 85% of the total EAC in both 2021 and 2022.[197] As noted in Section 4.1.3, IPL owns several coal and gas plants in Iowa and the adjustments to the fuel costs of these plants are reflected in the EAC.

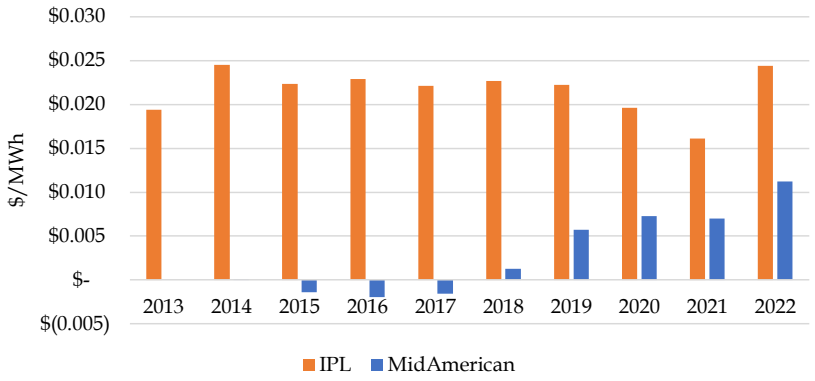
Figure 32. IPL and MidAmerican's average EAC for residential customers ($/kWh)



Note: LEI averaged the three zones for MidAmerican.

Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Figure 33. IPL and MidAmerican's average EAC commercial industrial customers ($/kWh)



Note: LEI averaged the three zones for MidAmerican.

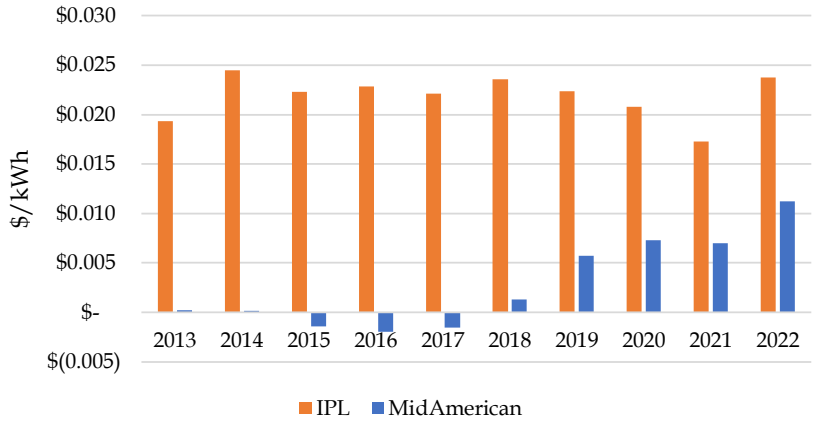
[195] The TBR is used to refund income tax credits to its customers due to changes in income tax deductibility of costs.

[196] IPL. *Iowa electric rates*. Web. Accessed November 10, 2023.

[197] IPL. *Electric Tariff*. Filed with the IUB on November 28, 2022, Docket No. EAC 2022-0150. P. 1.

Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Figure 34. IPL and MidAmerican's average EAC industrial customers ($/kWh)



Note: LEI used IPL's General Service and Large General Service for C&I customers, respectively. LEI averaged the three zones for MidAmerican.

Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Similarly, MidAmerican's EAC includes energy fuel costs, AEP, and tax benefits—such as PTCs.[198] MidAmerican's EAC also includes costs related to purchasing emission allowances and negative wind revenues. MidAmerican's EAC rates were negative from 2015-2018 due to the PTCs. However, due to the expiration of PTCs, the EAC rates have been increasing for all customer types starting 2018.

6.1.5.2 Transmission-related costs rider

According to Iowa Code section 476.6(8)(b), public utilities may automatically adjust rates and charges to recover transmission-related costs incurred by or charged to the rate-regulated utility consistent with a tariff or agreement that is subject to FERC jurisdiction.[199]

IPL has the RTS clause to recover costs related to IPL's transmission costs. IPL moved recovery of some of its transmission costs from its base rates to the RTS following the sale of its transmission assets to ITC Midwest.[200] This rider is also designed to recover transmission costs billed by MISO.

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[198] MidAmerican Energy Company. *Electric Tariff No. 2*. August 6, 2014. P. 335-336; MidAmerican Energy Company. *EAC Quarterly Report* (EAC-2022-0156). February 25, 2022.

[199] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6(8)(b)*.

[200] IUB. *Final Decision and Order*. Docket No. RPU-2010-0001. January 10, 2011. P. 61.

MidAmerican also has a transmission rider called the TCA clause but unlike the RTS, it is designed mainly to recover MidAmerican's share of costs associated with regional transmission infrastructure (such as the MISO multi-value projects).

IPL and MidAmerican charge transmission costs for residential and commercial customers based on energy consumed (kWh) whereas industrial customers are charged based on their demand (kW). IPL consistently has higher RTS rates (in orange bars) compared to MidAmerican's TCA (in blue bars) over the past decade (see Figure 35, Figure 36, and Figure 37). IPL's RTS rates for residential and commercial customers increased by an average of 5.5% and 4.8% per annum over the past decade, respectively. Notably, recent years (2019-2022) have seen an increase in IPL's RTS and MidAmerican's TCA, averaging 13% and 11% per year, respectively, attributed to the significant number of transmission lines being built or upgraded in this period.[201] In addition, IPL's sale of certain transmission assets to ITC Midwest in 2007 subjected those assets to a 10.02% ROE with an ROE adder in IPL's rates, which increased IPL's transmission costs.[202] In contrast, MidAmerican owns its transmission facilities and earns a FERC-approved ROE solely on regional transmission investments; it does not earn a higher ROE on its local transmission.

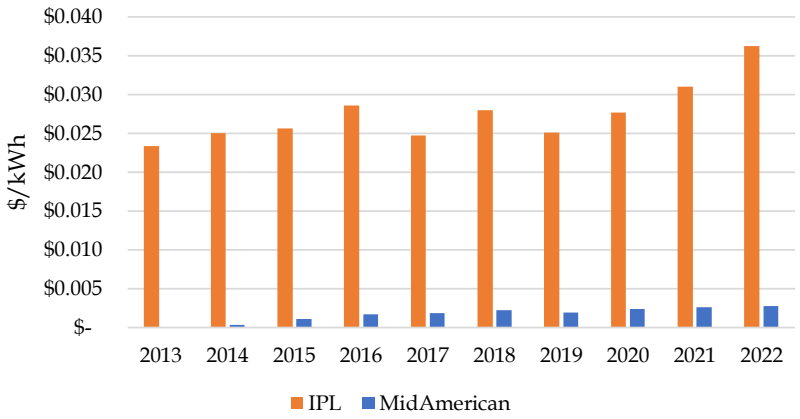
MidAmerican's TCA rates have also been increasing in the past few years due to transmission expansion in the Midwest. From 2019 to 2022, the TCA has increased by an average of 12.3%, 4.6%, and 11.5% per year for residential, commercial, and industrial customers, as shown in Figure 35, Figure 36, and Figure 37.

However, a comparison of IPL's RTS and MidAmerican's TCA is not an apples-to-apples comparison because they cover different cost components, as mentioned earlier. Some transmission costs for MidAmerican are already embedded in its rate base. Another way to compare the transmission costs of these two rate-regulated utilities is to compare the network integration service ("NITS") rates. These are set by MISO and charged per kW-month for using the RTO's transmission to manage their networks and serve customers. As shown in Figure 38, for 2022, the NITS rate charged to IPL ($11.032/kW-month) was four times higher than MidAmerican ($2.839/kW-month).

[201] IPL. *Interstate Power and Light Company Electric Tariff Rider RTS – Regional Transmission Service Clause.* Proposed Effective Date: December 22, 2021. Attachment C. Docket No. TF-2021-0109. P. 2.

[202] IPL. *Semi-Annual Transmission Report to the Iowa Utilities Board*. Docket No. RPU-2019-0001. June 30, 2022. P. 4.

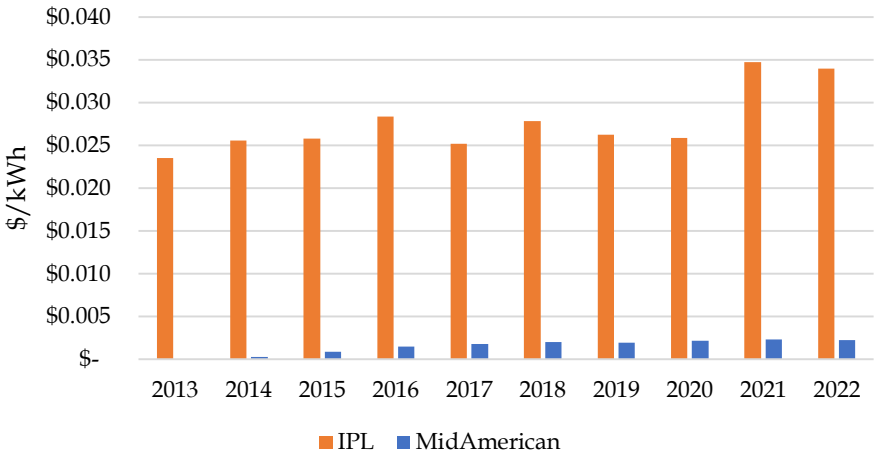
Figure 35. IPL and MidAmerican's average transmission cost riders for residential customers ($/kWh)



Note: MidAmerican provided customers rates for East, North, and South zones and LEI used the average of these three zones.

Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

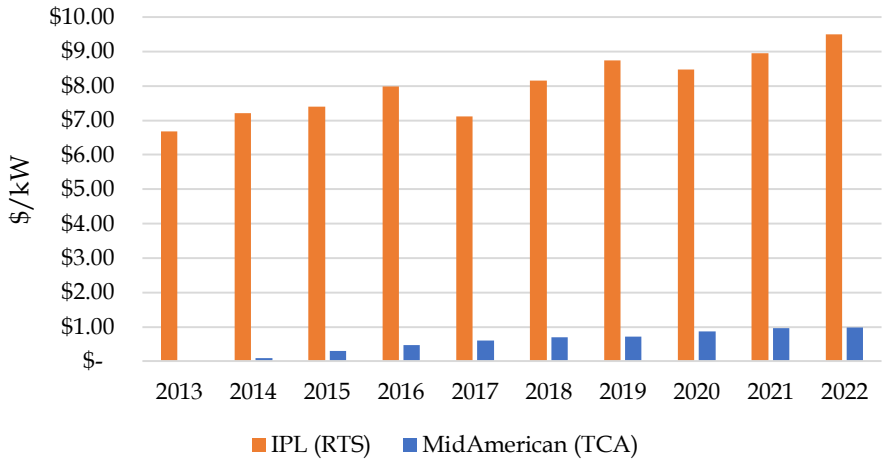
Figure 36. IPL and MidAmerican's average transmission cost riders for commercial customers ($/kWh)



Note: MidAmerican provided customers rates for East, North, and South zones and LEI used the average of these three zones.

Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Figure 37. IPL and MidAmerican's average transmission cost riders for industrial customers ($/kW)



Note: For IPL's industrial customers, LEI used the Large General Service, as provided by IPL in the data request filed in Docket No. NOI-2023-0001.

Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Figure 38. Network integration service rates ($/kW-month)

	NITS rates
ITC Midwest (IPL)	$11.032/kW-month
MidAmerican	$2.839/kW-month

Source: MISO. *Transmission Owner Rate Data.* Web. Accessed November 29, 2023.

6.1.6 IPL's share of riders and trackers to the average electric rates was sizable in the past ten years

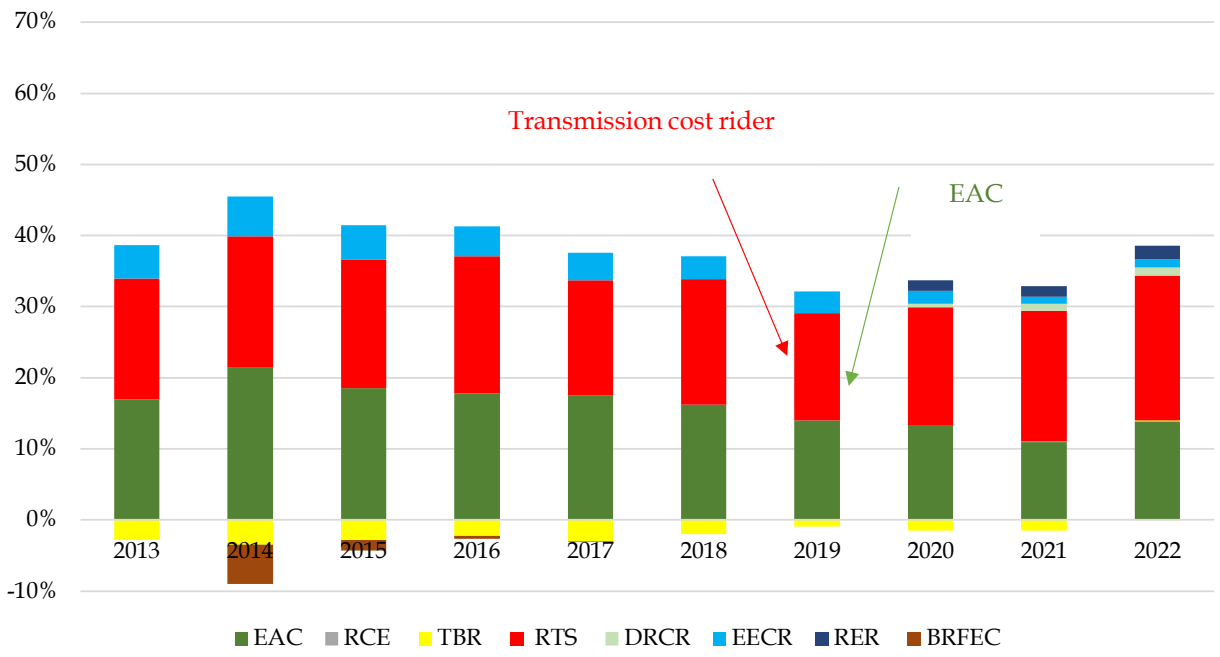
LEI investigated the relative share of riders and trackers to the annual average electric rates. As illustrated in Figure 39, the shares of the total trackers and riders to the average residential electric rates range between 31.2% and 38.7% and averaged 35.1% for the past ten years. The RTS (in red bars) and EAC (in green bars) made up a large portion of the share in each year, averaging 17.7% and 16.0%, respectively, during this period. The share of the total trackers and riders to the average residential electric rates had also steadily declined from 2014 to 2019 but had risen in the past 3 years.

For commercial customers, the shares of the total trackers and riders to the average commercial electric rates were higher, ranging between 42.7% and 53.1% from 2013 to 2023 (see Figure 40). This means that over half of the average commercial electric rates were made up of trackers and riders during this period. Similar to residential customers, the RTS and EAC contributed the most to the share each year, averaging 24.3% and 21.8%, respectively. The share of the total trackers

and riders to the average commercial rates had also steadily declined from 2014 to 2019 but increased in 2020.

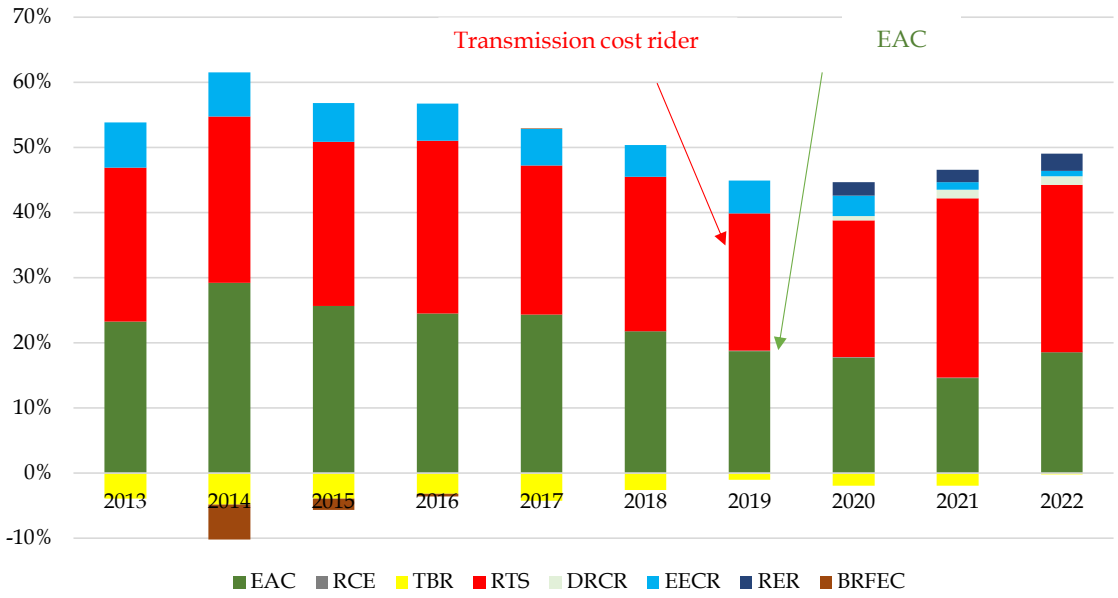
LEI did not perform an analysis of the shares of the total trackers and riders to the average industrial electric rates as the transmission cost rider is charged in $/kW.

Figure 39. Share of the various riders and trackers to the annual average electric rates for residential customers (%)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001; IUB. Information from Utility Annual Report Filings – Tables 1 and 2. Web. Accessed September 22, 2023.

Figure 40. Share of the various riders and trackers to the annual average electric rates for commercial customers (%)



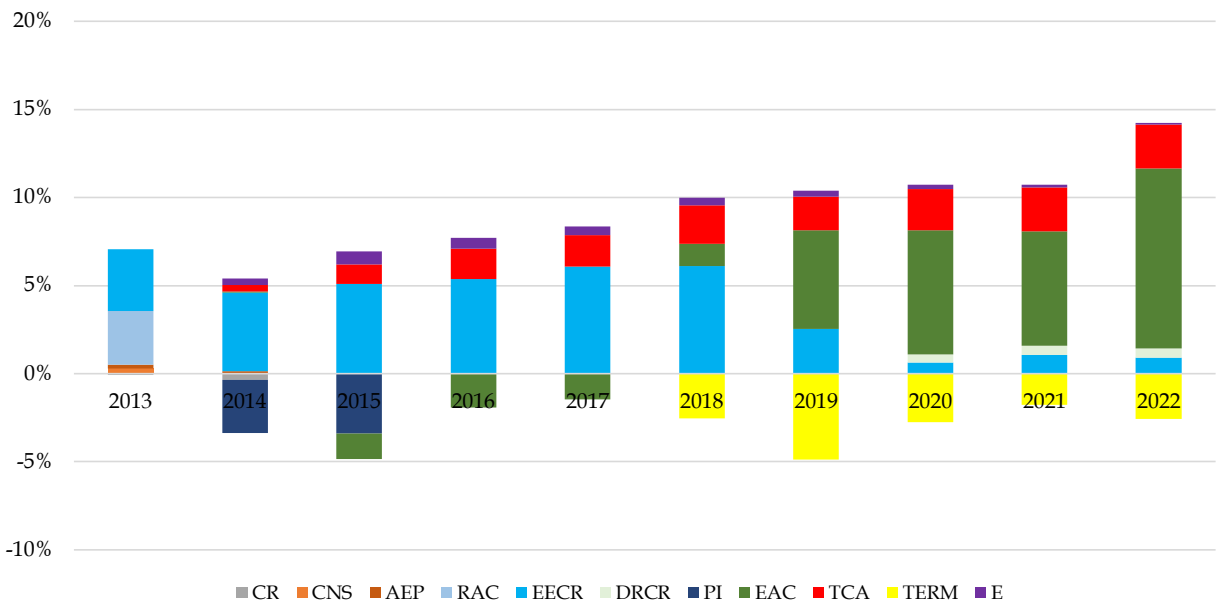
Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001. IUB. Information from Utility Annual Report Filings – Tables 1 and 2. Web. Accessed September 22, 2023.

6.1.7 Compared to IPL, MidAmerican's share of the riders and trackers to the average electric rates is lower but has been increasing in the past few years

LEI also analyzed the proportion of MidAmerican's riders and trackers relative to its average electric rates. As depicted in Figure 41, these shares have been below 15% of the average electric rates of residential customers from 2013-2022. Nevertheless, it is notable that these shares have been growing since 2014. From 2013 to 2018, EECR (in light blue bars) had the biggest share among these riders and trackers. By 2019, the EAC (in green bars) had the largest portion among the riders and trackers.

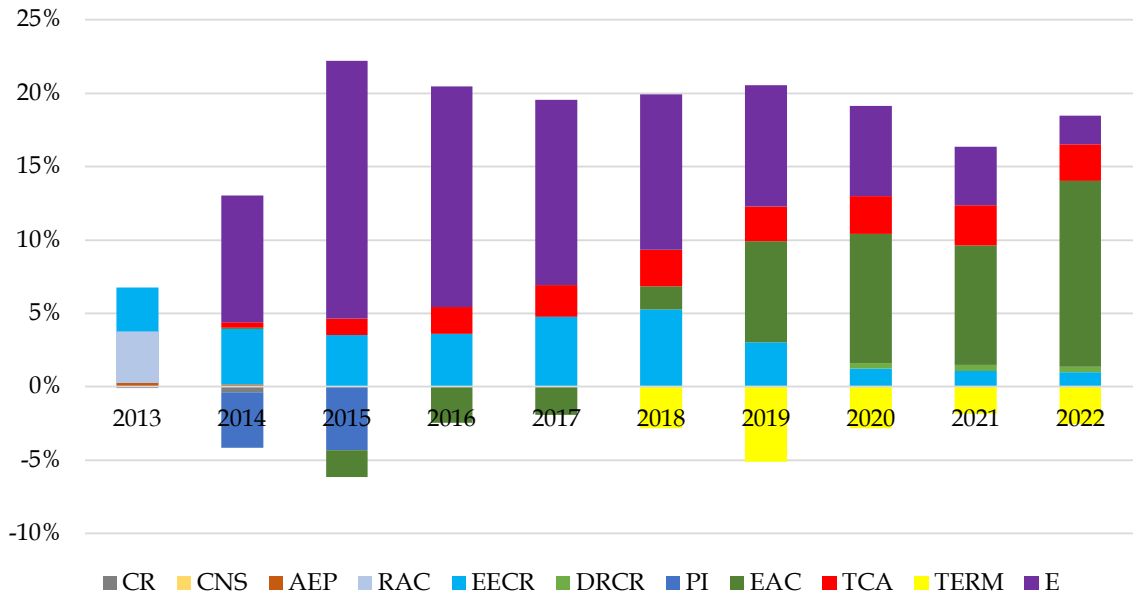
Commercial customers' riders and trackers as a proportion of electric rates were slightly higher than those of residential customers but remained below 25%, as illustrated in Figure 42. A significant portion of commercial customers' riders and trackers from 2014 to 2019 stemmed from the Equalization Rider (in violet bars), which is elaborated upon in Section 10.4. The EAC's share (in green bars) began to rise in 2019, reaching 12.6% of total electric rates by 2022.

Figure 41. Share of riders and trackers relative to the average electric rates of residential customers (%)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001. IUB. Information from Utility Annual Report Filings – Tables 1 and 2. Web. Accessed September 22, 2023.

Figure 42. Share of riders and trackers relative to the average electric rates of commercial customers (%)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001. IUB. Information from Utility Annual Report Filings – Tables 1 and 2. Web. Accessed September 22, 2023.

London Economics International LLC
717 Atlantic Avenue, Suite 1A
Boston, MA 02111
www.londoneconomics.com

6.1.8 IPL and MidAmerican's electric rates have trended with inflation over the past decade

Over the past decade, average electric rates charged by IPL and MidAmerican have generally trended in line with inflation over time, as shown in Figure 43 and Figure 44. IPL's electric rates for residential, commercial, and industrial customers have increased over the past ten years by an average of 2.9%, 3.2%, and 3.2% per year, respectively. This rise can be attributed to the growth in IPL's base rates as well as the rates of its automatic adjustment mechanisms, more specifically, the RTS clause, ECA, DRCR, and RER.

Although MidAmerican has not filed a rate case since 2013, which means that its base rates have remained unchanged, its electric rates have risen due to the following trackers and riders: the EAC, the TCA, and EECR charges, as discussed earlier. From 2013 to 2022, MidAmerican's average electric rates have grown by an average of 2.4%, 2.5%, and 4.1% per year for its residential, commercial, and industrial customers, respectively.

IPL has had substantially higher electric rates than MidAmerican across all the customer classes. From 2013 to 2022, IPL's average residential, commercial, and industrial electric rates were higher than MidAmerican by 53.2%, 41.7%, and 34.2% on average. This can be attributed to various factors. IPL's higher base rates can be attributed primarily to the type of customers that it serves, which are mostly in the rural areas. IPL also covers 38,000 square miles in Iowa compared to MidAmerican (10,000 square miles), which means that it needs more investment to serve its customers. These factors contributed to its higher distribution asset costs per customer. Based on LEI's analysis, in 2022, IPL's distribution asset costs $7,706 per customer compared to MidAmerican's $4,711 distribution asset costs per customer.[203] In addition, IPL's total O&M expenses per customer have also been higher than MidAmerican's. For instance, in 2022, IPL's total O&M expenses per customer was $2,267.4, which is 76.6% higher than MidAmerican's total O&M expenses per customer at $1,285.2.[204] Furthermore:

1) IPL has higher base rates (both fixed and variable charges), which reflect the company's capital investments (rate base) and O&M expenses (Section 6.1.4);
2) IPL's EAC rates have been almost two times higher than MidAmerican for the past five years and higher before that (Section 6.1.5.1);
3) IPL has a higher transmission cost rider (nearly 20 times) than MidAmerican across all customer types (Section 6.1.5.2). This is because IPL's Regional Transmission Service clause covers the transmission costs passed to IPL by ITC Midwest as well as third party providers whereas MidAmerican's transmission cost rider only covers the regional

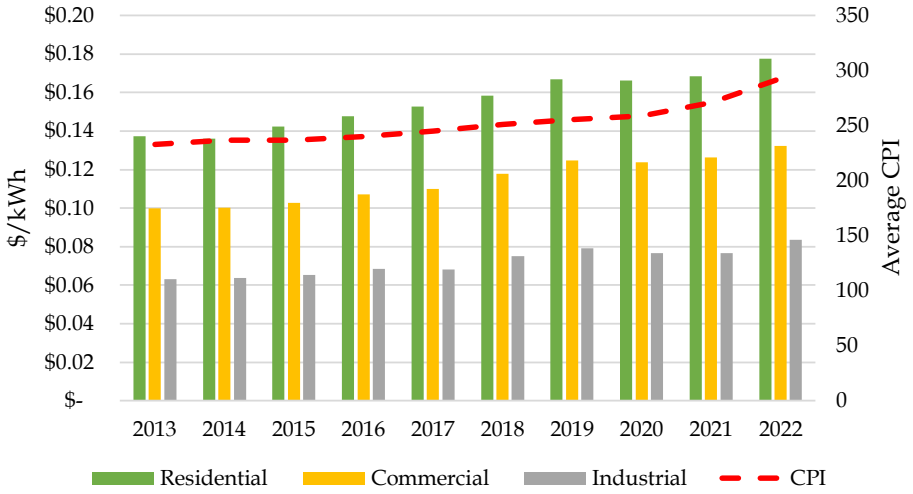
[203] LEI calculated the distribution asset costs per customer using the Total Distribution Plant End of the Year, which can be found on Page 209, Line 109 of IPL's and MidAmerican's FERC Form 1 for 2022. For the number of customers data is derived from EIA 861 data for 2022.

[204] LEI calculated the total O&M costs per customer using the Total Electric O&M Expenses on Page 323, Line 198 of IPL's and MidAmerican's FERC Form 1 for 2022. For the number of customers, LEI used the EIA 861 data for 2022.

transmission investments (and the other transmission costs are covered in MidAmerican's rate base); and

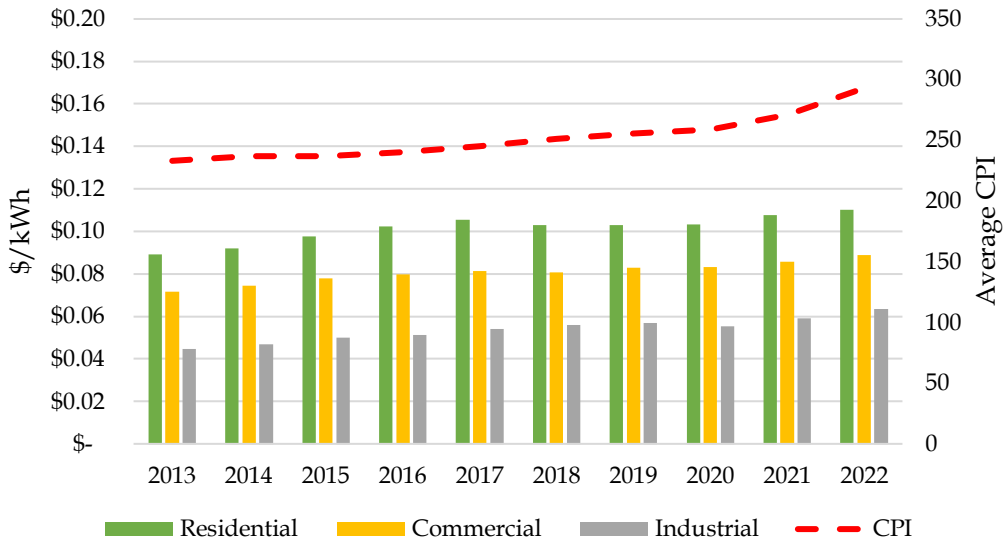
4) IPL's EECR and DRCR rates were higher than MidAmerican by an average of 74.9% and 211.5%, respectively, across the customer classes (Section 10.1).

Figure 43. IPL's average electric rates ($/kWh)



Source: IUB, *Utility Annual Report*s (2013-2022).

Figure 44. MidAmerican's average electric rates ($/kWh)



Source: IUB, *Utility Annual Report*s (2013-2022).

Over the past decade, consistent with broader national trends, residential customers of rate-regulated utilities in Iowa have faced higher average electric rates than C&I customers. This is not unique to Iowa; an analysis of 2022 average electric rates among various electric IOUs across the US reveals that 83% of these utilities exhibited average residential rates exceeding those of C&I rates.[205] This observed trend stems from several factors. As discussed in IPL's recent electric rate case application (RPU-2023-0002), serving a residential customer incurs higher costs per MWh. IPL's filings indicate that the residential rate is estimated at $200/MWh, while average General Service and Large General Service rates are estimated at $195.6/MWh and $109.3/MWh, respectively.[206]

[205] LEI examined the 2022 average residential, commercial, and industrial electric rates of 182 IOUs using the EIA Annual Electric Power Industry Report, Form EIA 861. A total of 151 IOUs have residential rates that are higher than commercial and industrial rates. Additionally, these IOUs' average residential rates are higher than commercial and industrial customers by an average of 17.3% and 58.1%, respectively.

[206] IPL. *Customer Notice – Application for Revision of Electric and Natural Gas Rates - Attachment D (Excel)*. Docket RPU-2023-0002. October 6, 2023. Web.

Figure 45. Average electric rates by customer type ($/kWh)

In addition, residential electricity demand exhibits significant daily fluctuations, requiring utilities to manage variable load conditions. This, in turn, necessitates additional infrastructure to ensure peak load—not just average load—can be reliably met and a diverse mix of generation

resources to satisfy changing residential demand throughout the day and over the course of the year.

Furthermore, distributing electricity to residential areas involves higher infrastructure costs compared to serving a single commercial or industrial entity. Utilities must maintain power lines, transformers, and substations spread across residential neighborhoods.[207] These higher infrastructure and O&M expenses are reflected in the base rates. Indeed, based on LEI's analysis, MidAmerican residential customers experience higher summer and winter base rates—around 7.1% and 14.0%—compared to commercial rates from 2014 to 2022.[208] Likewise, IPL's residential customers have on average 3.6% higher winter base rates than commercial customers from 2013 to 2022.[209]

Even though residential rates were the highest among all the customer classes, they have shown lower average growth rates. Over the years 2013 to 2022, residential rates have increased by an average of 2.9% and 2.4% for IPL and MidAmerican, respectively. Comparatively, electric rates for commercial customers rose at an average of 3.2% for IPL and increased for MidAmerican at an average rate of 2.3% annually. While industrial rates were the lowest for both rate-regulated utilities, they experienced the highest average growth rates—averaging 3.2% and 3.6% for IPL and MidAmerican, respectively, for the same period.

6.2 Gas industry

Like electric rates, gas rates include a base rate comprising a variable charge determined by gas usage and a fixed monthly surcharge. This variable charge encompasses the costs of transporting and delivering gas through pipelines to customers, while the fixed monthly service charge covers the fixed operating costs. In addition, gas rates include trackers and riders to recover costs that are outside the control of the rate-regulated utilities. These include the costs of purchasing gas (or the PGA), EECR, TERM, RCE, CIC, and polar vortex recovery surcharges.

6.2.1 IPL's rate base increase from 2018 to 2019 can be attributed to investments related to reliability, safety, and community development

For the past ten years, rate-regulated gas utilities in Iowa have only settled three general rate cases – two from IPL and one from Black Hills. Based on this limited data, the rate base per customer for IPL has increased by 13.4% from 2018 to 2019. This growth can be attributed primarily to the increase in the rate base as the total number of customers declined by 0.01%

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[207] For example, in IPL's recent rate case filing (RPU-2023-0002), estimated base revenue requirements for residential customers are $412,974,170 compared to General Service and Large General Service base revenue requirements of $191,698,439 and $289,282,988, respectively. Source: IPL. *Customer Notice – Application for Revision of Electric and Natural Gas Rates - Attachment D (Excel)*. Docket RPU-2023-0002. October 6, 2023. Web.

[208] For the average winter base rates, LEI used the average base rates for the first 1,000 kWh for the residential customers and the average base rates for the first 5,000 kWh.

[209] LEI compared the first 500 kWh average winter base rates for residential customers and the first 1,200 kWh winter base rates for commercial customers.

during this period. IPL's 2019 rate base per customer is higher than Black Hills by 32%, as shown in Figure 46.

IPL's higher base rates (for residential and commercial customers) stem from strategic investments in reliability, safety,[210] and community development. As noted in its 2018 rate filing, these investments involved "introducing alternate sources of natural gas, replacing existing transmission pipelines, and replacing older materials."[211]

Figure 46. Rate-regulated utilities' rate base per customer

Rate-regulated utility	Year rate case was approved	Rate base	Number of customers (year when the rate was approved)	Rate base per customer
Black Hills	2021	$ 300,922,791	160,998	$ 1,869.11
IPL	2019	$ 557,400,000	224,336	$ 2,484.67
IPL	2018	$ 491,445,580	224,353	$ 2,190.50

Note: MidAmerican (Gas) did not file any rate cases from 2013 to 2022. The last gas rate case it filed was March 2002.

Sources: Rate base numbers came from the IUB Orders for RPU-2018-0002, RPU-2019-0002, and RPU-2021-0002, while the number of customers came from the Utility Annual Report filings.

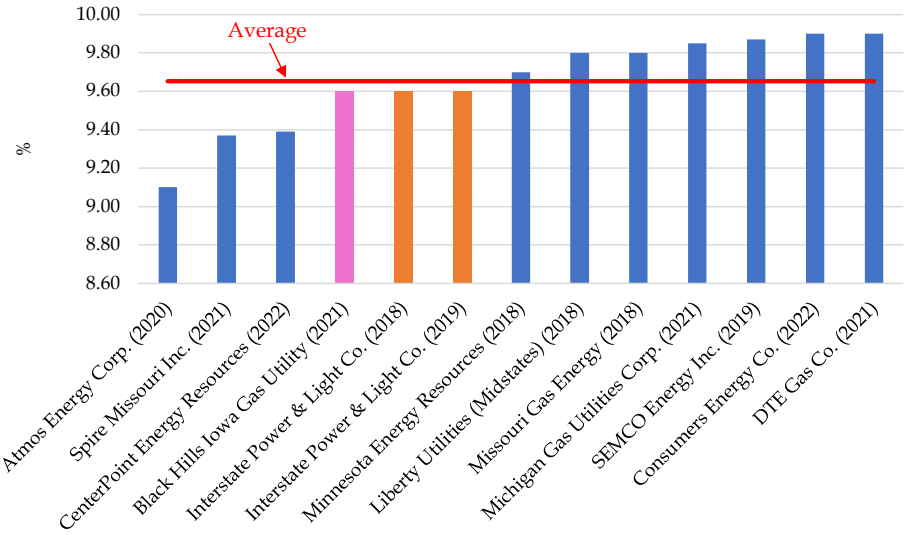
6.2.2 Authorized ROEs for the rate-regulated gas utilities were lower than the ROE of the peer utilities

In terms of the authorized ROE, the parity in authorized ROEs between Black Hills and IPL suggests equitable treatment by the IUB. Furthermore, empirical data reveals that these authorized ROEs fall below the 9.65% ROE average of the rate-regulated gas utilities in the five states reviewed in Section 7 for various gas utilities. This observation substantiates the reasonableness of Black Hills' and IPL's authorized ROEs within the context of the reviewed states. Figure 47 lists the authorized ROE of rate-regulated gas utilities in Iowa as well as utilities in the peer states. To be comparable, LEI looked only at the gas utilities that have received the authorized ROE during the same period as the rate-regulated gas utilities in Iowa.

[210] Examples of these safety mandates include: the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, Hazardous Materials Safety Improvement Act of 2012, and Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016.

[211] IUB. *Order Approving Settlement and Requiring Reports (Interstate Power and Light Company).* Docket No. RPU-2018-0002. December 13, 2018. P. 3.

Figure 47. Authorized ROE of the rate-regulated gas utilities in Iowa and peer states with rate cases approved from 2018 to 2021 (%)

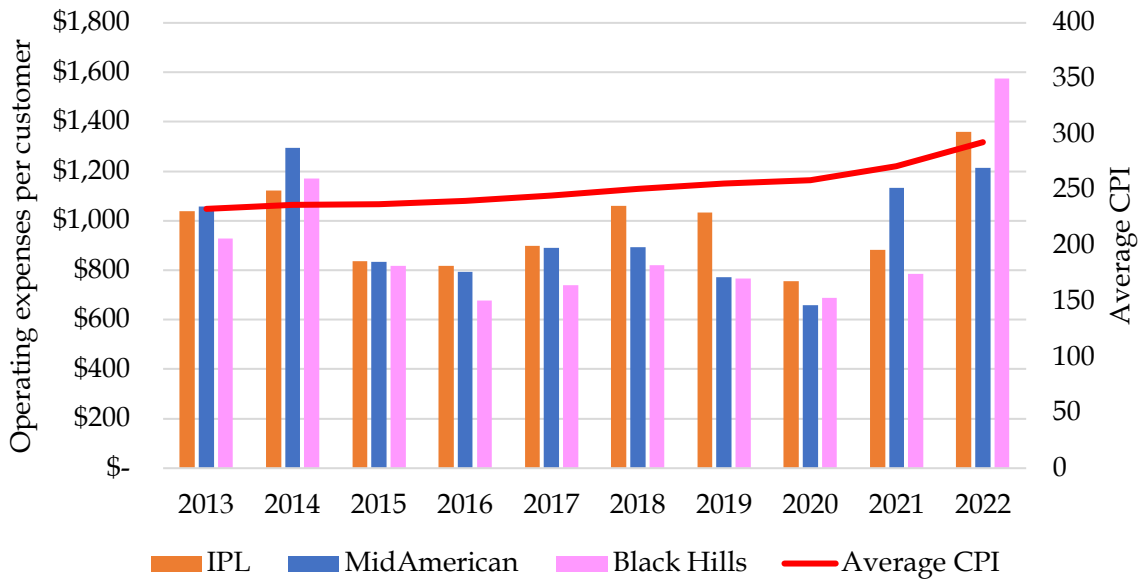


Sources: IPL's ROEs are from the IUB Orders for RPU-2018-0002 and RPU-2019-0002, while Black Hills' ROE is from the IUB Order for RPU-2021-0002.; S&P Global.

6.2.3 Rate-regulated gas utilities in Iowa experienced fluctuating operating expenses per customer for the past decade, trending with inflation

The customer base across all utilities during this period has also remained relatively stagnant, experiencing an annual growth of less than 1%. This indicates that the increase (or decrease) in operating expenses per customer is primarily a result of the O&M expenses. Notably, 2022 had the highest operating expenses per customer among the past ten years. This can be attributed to the higher inflation rate experienced during that year. The operating expenses are also trending with the inflation rates, as presented in Figure 48.

Figure 48. Rate-regulated utilities' operating expenses per customer ($)



Source: IUB, *Utility Annual Reports* (2013-2022).

6.2.4 Gas base rates

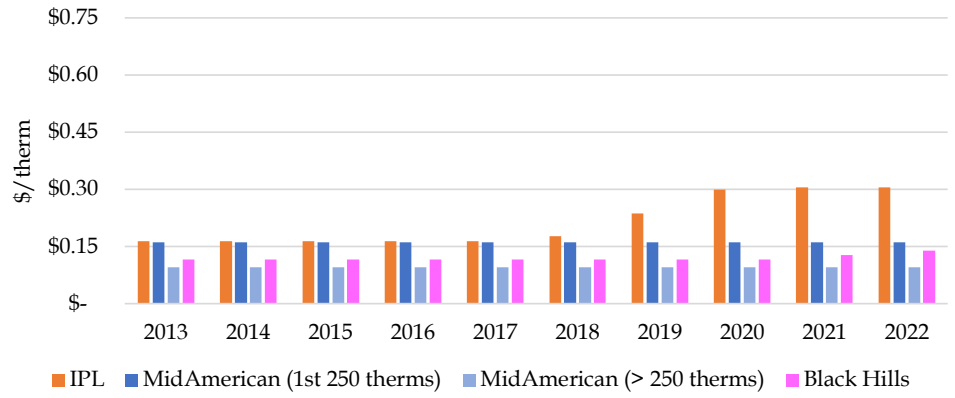
Like electric rates, gas base rates consist of a variable charge based on gas usage and a fixed monthly charge. The variable charge encompasses the expenses associated with transporting, measuring, and delivering gas from pipelines to customers.

IPL's base rates for residential customers, the highest among the three rate-regulated gas utilities, have seen an average annual increase of 14% over the past five years, rising from $0.18/therm in 2018 to $0.31/therm in 2022. IPL's base rates for commercial customers[212] are also the highest among the rate-regulated utilities. IPL's base rates for industrial customers have remained the same for the past ten years, whereas MidAmerican's base rates (distribution energy charge) for industrial customers have increased in the past three years while its base rates for residential and commercial customers have remained the same over the past ten years. Black Hills' base rates have remained relatively flat from 2013 to 2022 for all the customer classes.

[212] LEI used the Non-Residential General Service class for the commercial customers, as provided by IPL.

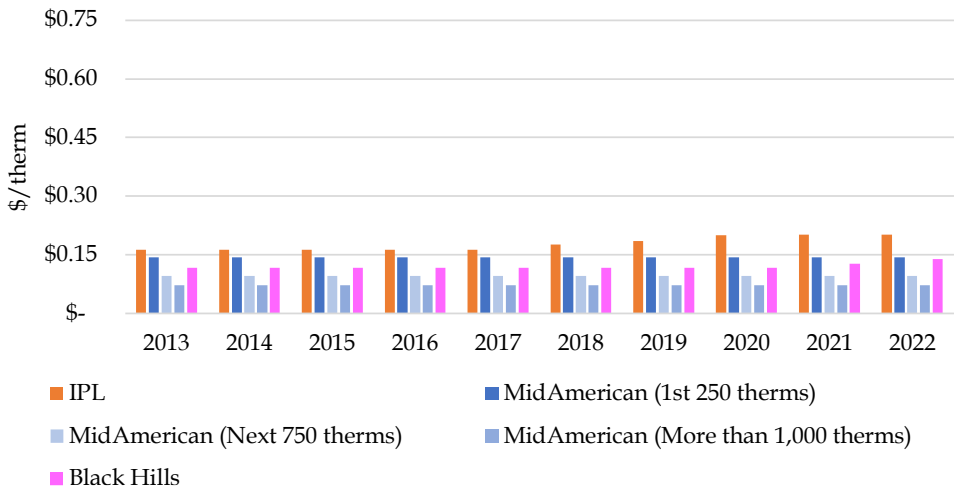
London Economics International LLC
717 Atlantic Avenue, Suite 1A
Boston, MA 02111
www.londoneconomics.com

Figure 49. Base rates (variable charge) for residential customers ($/therm)



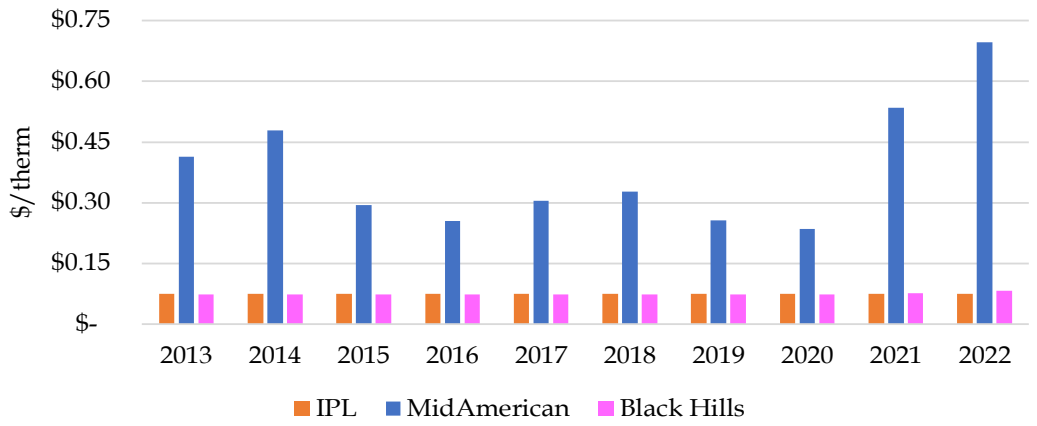
Source: Data acquired through a data request response from the rate-regulated utilities through Docket No. NOI-2023-0001.

Figure 50. Base rates (variable charge) for commercial customers ($/therm)



Source: Data acquired through a data request response from the rate-regulated utilities through Docket No. NOI-2023-0001.

Figure 51. Base rates (variable charge) for industrial customers ($/therm)

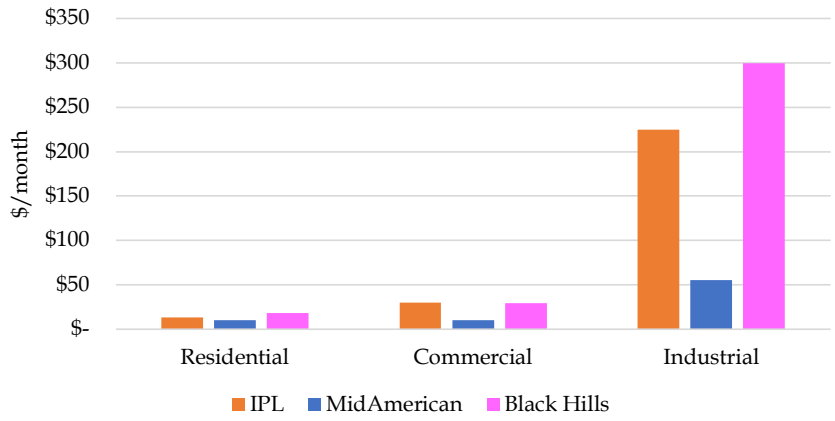


Note: MidAmerican's base rates for industrial customers only include the distribution energy charge and not the distribution demand charge as this is charged per therm of contract maximum daily requirement.

Source: Data acquired through a data request response from the rate-regulated utilities through Docket No. NOI-2023-0001.

The Monthly Service Charge serves to recoup a portion of fixed operating costs. Over the past decade, the monthly charge has remained unchanged for both residential and commercial customers across all three rate-regulated gas utilities. Notably, Black Hills recently implemented an increase in the monthly charge for industrial customers, now at $300/month. In contrast, IPL and MidAmerican have maintained consistent monthly charges for industrial customers over the same ten-year period.

Figure 52. 2022 Monthly Service Charge ($/month)



Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

6.2.5 Rate-regulated gas utilities also have trackers and riders, albeit fewer than the rate-regulated electric utilities

In addition to the base rates, the rate-regulated gas utilities also have automatic adjustment mechanisms. These include the PGA, a capital investment rider related to gas safety investments, and the EECR. Additionally, some gas utilities have trackers and riders that are not universally applied by the other rate-regulated utilities.

6.2.5.1 PGA rates mirror commodity costs and account for over 90% of the total trackers and riders for gas utilities

The PGA typically comprises various components that contribute to the overall cost of gas provided by gas utilities to customers. These components may include the following:

- ***Gas Commodity Costs***: The actual cost of purchasing gas from suppliers or the market, which can fluctuate based on market conditions, supply, demand, and seasonal variations;
- ***Transportation Costs:*** Expenses related to transporting gas through pipelines or other means to reach the utility's distribution system, including fees associated with interstate or intrastate transportation;
- ***Storage Costs***: Fees or expenses incurred for storing gas in facilities to ensure sufficient supply during periods of high demand or to manage fluctuations in supply; and
- ***Pipeline Balancing Costs***: Charges associated with maintaining a balance between gas supply and customer demand, ensuring that gas delivery aligns with consumption needs.

The past two years (2021-2022) saw an increase in PGA rates across all the customer classes due to an increase in gas prices that was caused by several factors. As economies recovered from the impacts of the COVID-19 pandemic in 2021, industrial activity and energy consumption rose, contributing to increased demand for gas and subsequent price hikes.[213] In addition, geopolitical events such as the war in Ukraine affected the supply putting upward pressure on prices.[214] Furthermore, extreme weather events, such as Winter Storm Uri and the December 2022 winter storm, increased demand for heating and electric generation, stressing the energy infrastructure.

Since the PGA reflects the cost of gas purchased by the utility to fulfill customer needs, these events affected the PGA rates for each rate-regulated gas utility in Iowa. Thus, the PGA rates mirrored the fluctuations in the average Henry Hub prices (see Figure 53, Figure 54, and Figure 55).

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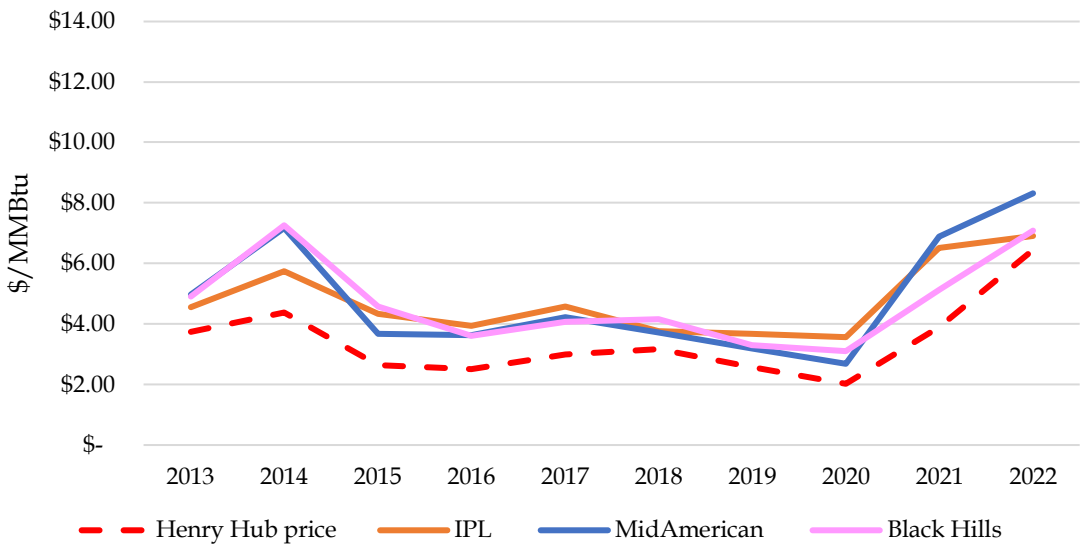
[213] EIA. *US natural gas prices spiked in February 2021, then generally increased through October.* January 6, 2022.

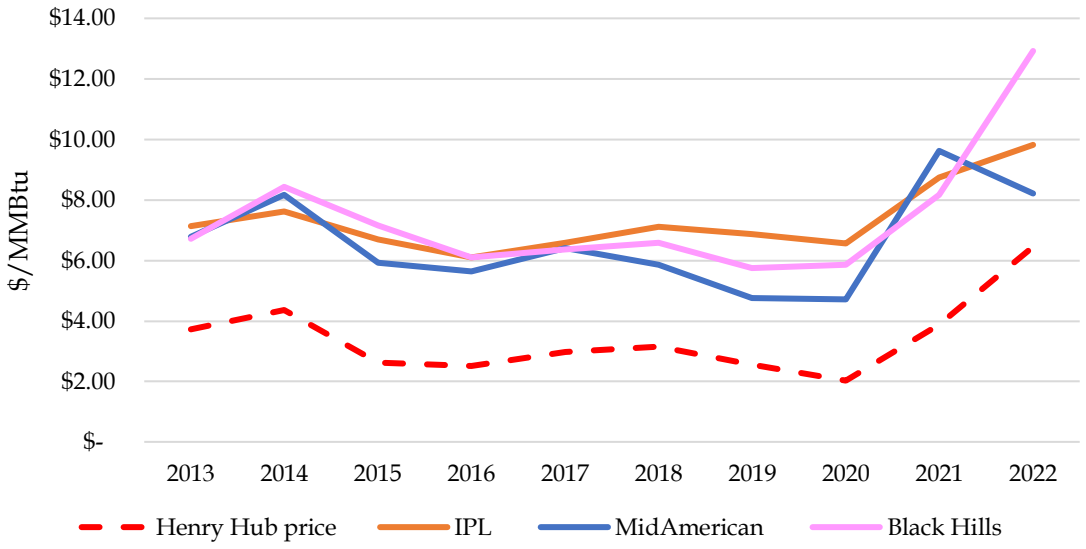
[214] S&P Global. *How the Russia-Ukraine war is turning natural gas into the "new oil."* April 12, 2023.

Figure 53. Average PGA rates for residential customers ($/MMBtu)



Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

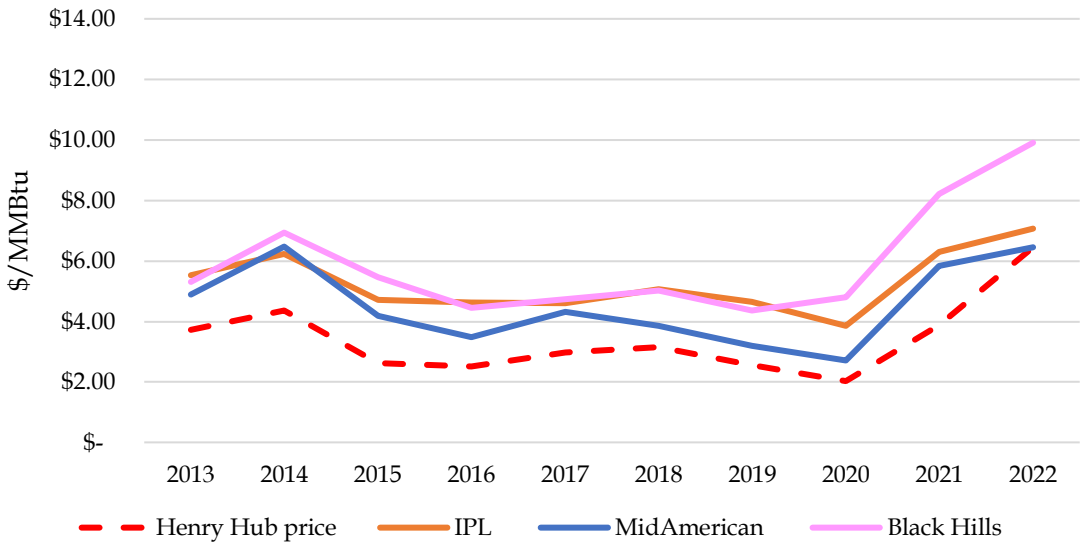
Figure 54. Average PGA rates for commercial customers ($/MMBtu)



Note: Rate categories used for Black Hills' C&I customers are General Service, Non-Residential and Large Volume Sales Service. The rate categories used for IPL's C&I customers are General Service and Large General Service.

Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

Figure 55. Average PGA rates for industrial customers ($/MMBtu)

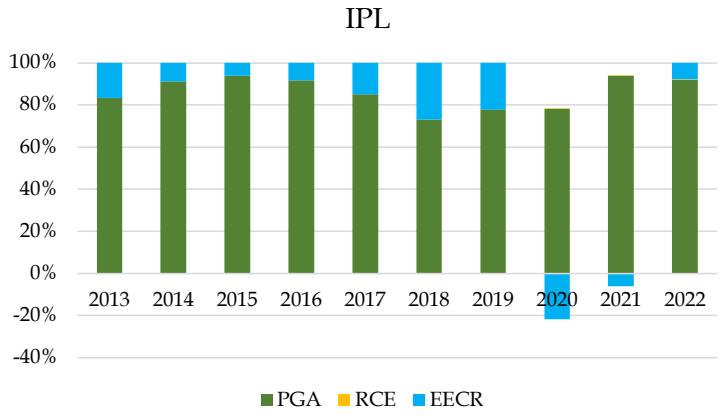


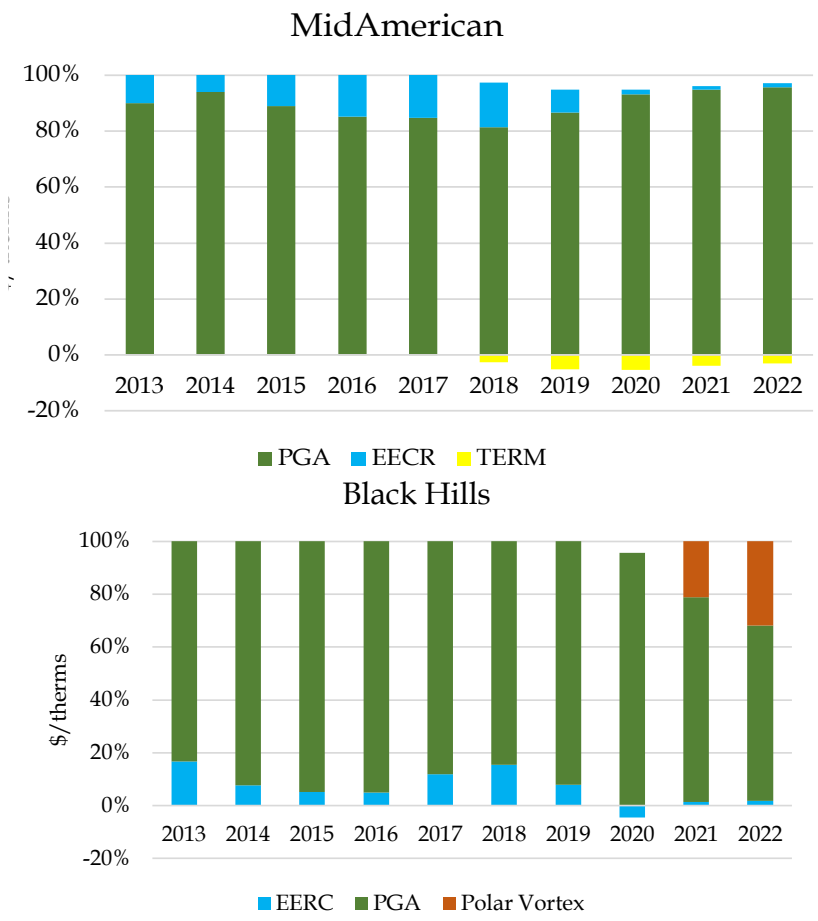
Note: Rate categories used for Black Hills' C&I customers are General Service Non-Residential and Large Volume Sales Service. Rate categories used for IPL's C&I customers are General Service and Large General Service.

Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

Based on LEI's estimates, the PGA constitutes an average of over 90% of the total trackers and riders that are consumption-based ($/therm) across all customer classes for the three rate-regulated gas utilities. This is not surprising given the correlation of PGA with the cost of gas, as discussed in Section 6.2.5. The cost of gas fluctuates based on market conditions, supply, demand, and geopolitical factors. Gas utilities purchase gas at market rates, and these fluctuations directly impact the cost passed on to customers. Figure 56 shows the breakdown of the riders and trackers (in $/therm) for residential customers for all the rate-regulated gas utilities.

Figure 56. Breakdown of trackers and riders for residential customers





Note: The graphs above include trackers and riders that charge based on the usage (or $/therm) and therefore do not include the other riders such as Black Hills' SSMA and Farm Tap Tracker, MidAmerican's CIC, and IPL's TBR, which are a $/month charge. IPL's RCE portion of the total trackers and riders averaged 0.14% from 2020-2022, which is why it may not be visible in the graph above.

Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

6.2.6 Only Black Hills and MidAmerican currently employ a capital investment tracker for costs related to safety

According to 199 IAC 19.18(1), a rate-regulated gas utility can propose an automatic adjustment mechanism for capital infrastructure investments to the IUB for approval. For eligibility, the costs must meet specific criteria, such as being beyond direct management control, subject to sudden important changes, integral to determining the total cost of capital infrastructure, and precisely segregated in the utility's accounts. Alternatively, eligible costs may pertain to capital infrastructure investments that do not directly increase revenues, are in service but not included in the recent rate base or replace or modify existing infrastructure based on government actions or compliance with safety regulations.

At present, only Black Hills and MidAmerican employ capital investment trackers for specific costs associated with safety-regulated gas infrastructure enhancements. Black Hills utilizes the SSMA, while MidAmerican has the CIC. Both trackers are applied on a monthly basis ($/month).

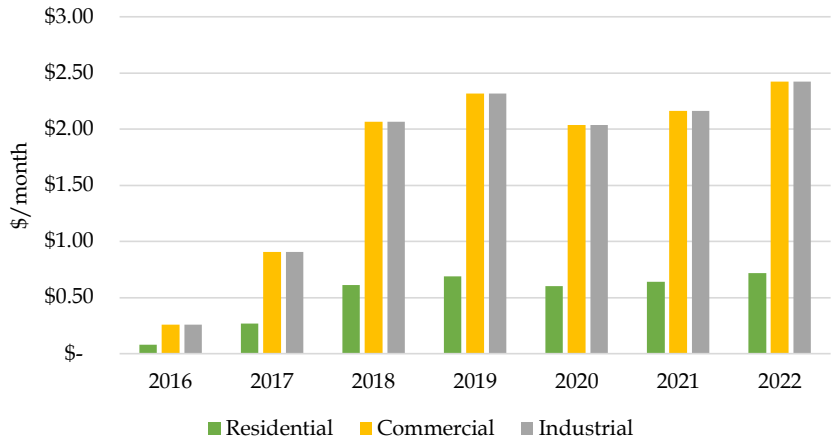
Black Hills' SSMA imposes significantly higher charges on its industrial customers compared to residential and commercial customers, but the rate has exhibited a declining trend over the past five years, as illustrated in Figure 57. In contrast, MidAmerican charges the same monthly rates for C&I customers through the CIC, which are notably higher than those for residential customers, as observed over the past decade (see Figure 58).

Figure 57. Black Hills' average SSMA ($/month)

Year	Residential	Commercial	Industrial
2013	$ -	$ -	$ -
2014	$ 0.1	$ 0.2	$ 8.2
2015	$ 0.3	$ 0.8	$ 25.5
2016	$ 0.5	$ 1.5	$ 47.0
2017	$ 0.7	$ 2.1	$ 66.3
2018	$ 0.8	$ 2.4	$ 74.9
2019	$ 0.8	$ 2.3	$ 73.0
2020	$ 0.8	$ 2.2	$ 71.2
2021	$ 0.3	$ 1.0	$ 32.3
2022	$ -	$ -	$ -

Source: Data acquired through a data request response through Docket No. NOI-2023-0001

Figure 58. MidAmerican's average CIC ($/month)

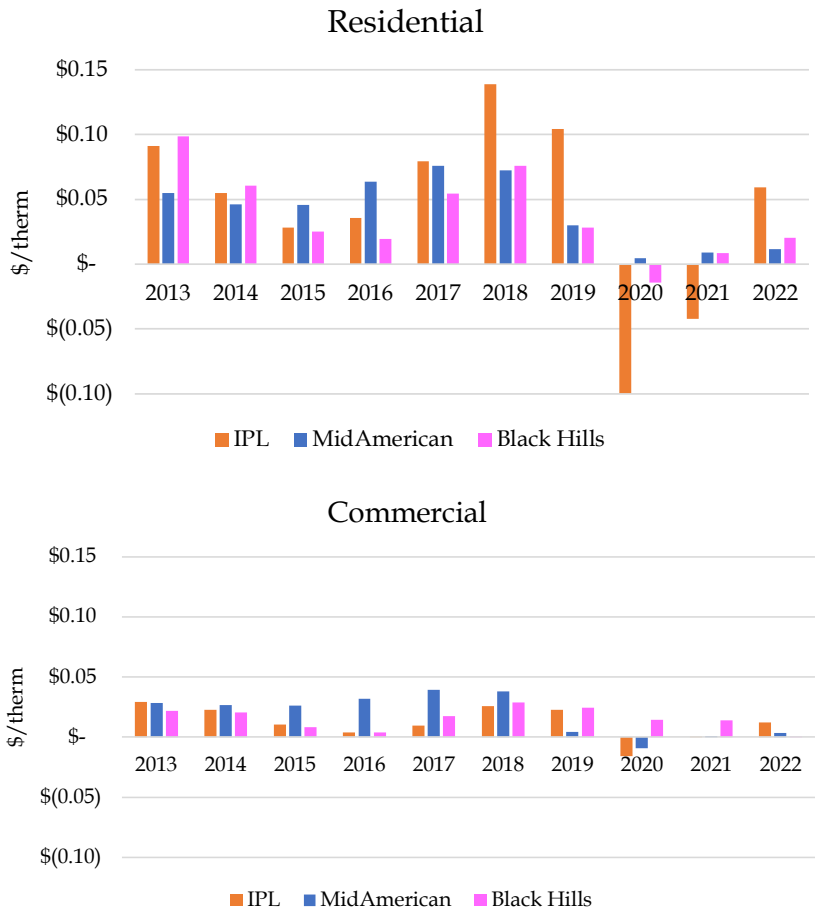


Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

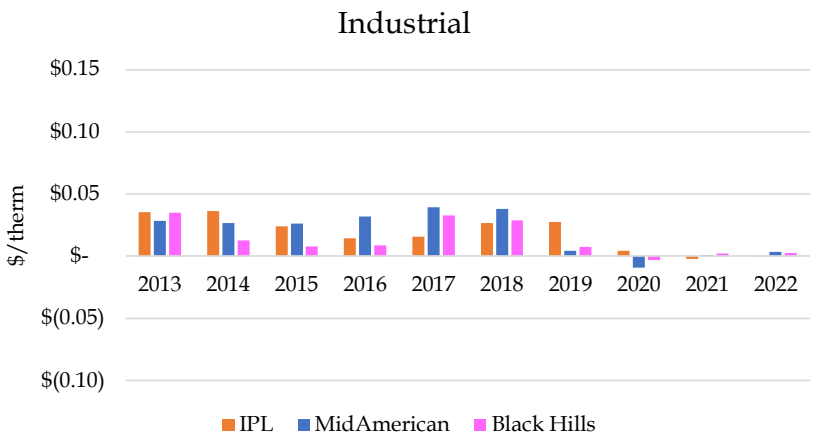
6.2.6.1 The EECR tracker has been declining since 2019 for MidAmerican and Black Hills

A similar trend can also be observed in the gas sector, where the EECR rates have declined since 2019 across all the customer classes. This dynamic changed following the enactment of SF 2311,[215] which limited the funding for EE programs. As shown below, EECR rates have declined substantially for all customer groups after 2018.

Figure 59. Iowa gas utilities' average EECR ($/therm)



[215] Senate File 2311. *An Act Modifying the Various Provisions Relating to Public Utilities Providing for A Study of Electric Vehicle Infrastructure Support, and Including Effective Date Provisions*. Web.



Source: Data acquired through a data request response through Docket No. NOI-2023-0001.

6.2.6.2 There are other riders and trackers that rate-regulated utilities charge but they are not a substantial portion of the total gas rates

Rate-regulated gas utilities also have trackers related to tax refunds or credits. MidAmerican has the TERM, like the one discussed in Section 10.3. Black Hills used the Annual Tax Refund, which included the reduced federal corporate income tax rate from 35% to 21% beginning on January 1, 2018, due to the Tax Cuts and Jobs Act of 2017. Customers were refunded monthly from 2018 to 2020. Similarly, IPL featured a tax refund tracker called the TBR, which was based on a change in IPL's accounting methodologies.[216,217]

Both IPL and Black Hills also have an RCE surcharge for expenses related to rate review settlement. For instance, Black Hills' RCE spans 36 months as part of its 2021 rate review settlement.[218] This monthly surcharge allows recovery of costs incurred during the rate review process. This is charged across all customer classes.

In addition to the trackers and riders discussed above, Black Hills also has other trackers and riders not charged (or no longer charged) by IPL or MidAmerican, namely:

- ***The Farm Tap Tracker Mechanism*** is a charge to recover Black Hills' costs of testing, line replacement, and acquisition of farm tap customers.

- ***The Polar Vortex Recovery*** surcharge pertains to the recovery of gas costs related to the Polar Vortex that happened in February 2021. This charge is collected from all firm sales customers on Black Hills' system as a separate line item on the customer's bill, although

[216] IPL. *Gas Tariff. All Pricing Zones Tax Benefit Rider*. Effective Date: February 1, 2021. Web.

[217] The TBR has been set to zero since February 1, 2021.

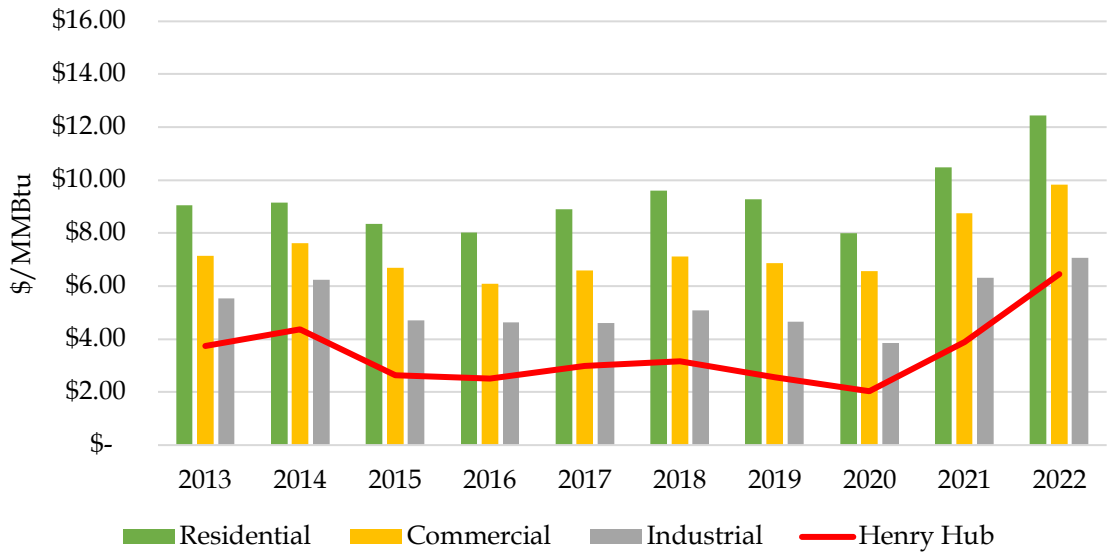
[218] Effective May 23, 2023, IPL's RCE is set at zero.

it is part of the PGA.[219] The recovery of the costs will be multi-year, over a 36-month period, starting in April 2021 and concluding in March 2024.[220] Both IPL and MidAmerican had a polar vortex recovery surcharge but this was not over a 36-month period so it is no longer part of the customers' bills.

6.2.7 Average gas rates have mirrored the commodity costs

Throughout the last ten years, average gas rates have consistently followed the trends of Henry Hub gas prices. IPL's average rates for residential, commercial, and industrial customers have increased by an average of 4.4%, 4.4%, and 5.2% per annum, respectively (see Figure 60). This rise can be attributed to the escalation in IPL's base rates (variable charges), which reflect the costs of investing in new gas distribution infrastructure and increasing safety-driven national mandates as well as the increase in the PGA that has been particularly evident over the last three years.

Figure 60. IPL's average gas rates for residential, commercial, and industrial customers ($/MMBtu)



Source: IUB, *Utility Annual Reports* (2013-2022).

MidAmerican has consistently maintained lower gas prices compared to IPL and Black Hills over the last decade, primarily due to economies of scale and its higher proportion of customers in urban areas with higher customer density—which means a greater opportunity to enjoy economies of scale.[221] However, the rise in its gas prices has been more rapid for its C&I

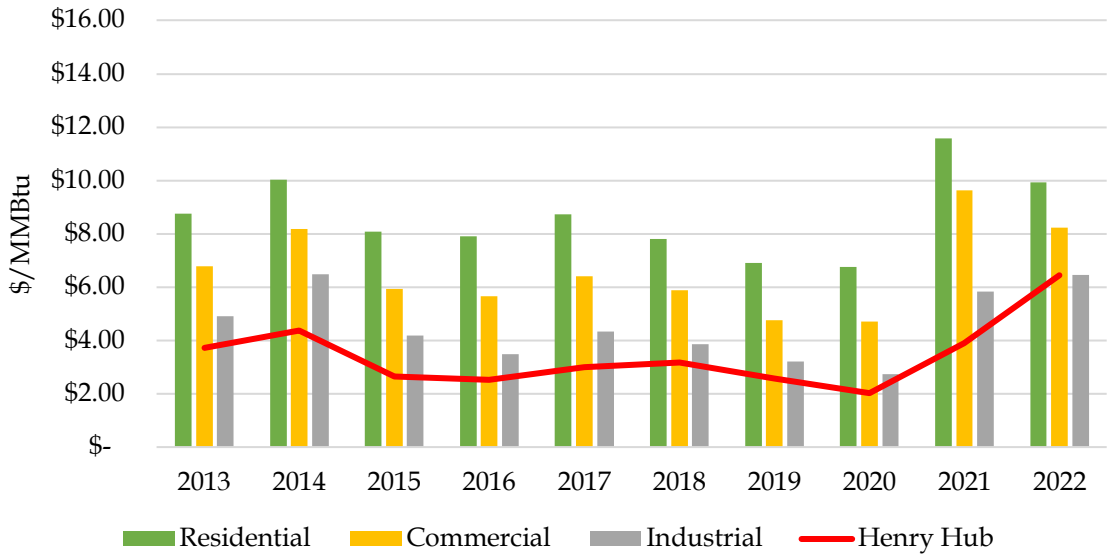
[219] Black Hills Energy. *Black Hills Energy's Polar Vortex New Customer and Zero Usage Customer Analysis*. PGA-2020-0225. May 5, 2022. P. 4.

[220] Black Hills Energy. *Polar Vortex Recovery Plan*. Docket Nos. ARU-2021-0001 and PGA-2020-0225. April 14, 2021. P. 7.

[221] See Section 4.2.3.

customers, with average annual increases of 7.0% and 9.6%, respectively (see Figure 61). The increase in MidAmerican's PGA commercial and industrial rates from 2020 to 2021, which increased by 158% and 16.7%, respectively, have contributed to this.

Figure 61. MidAmerican's average gas rates for residential, commercial, and industrial customers ($/MMBtu)

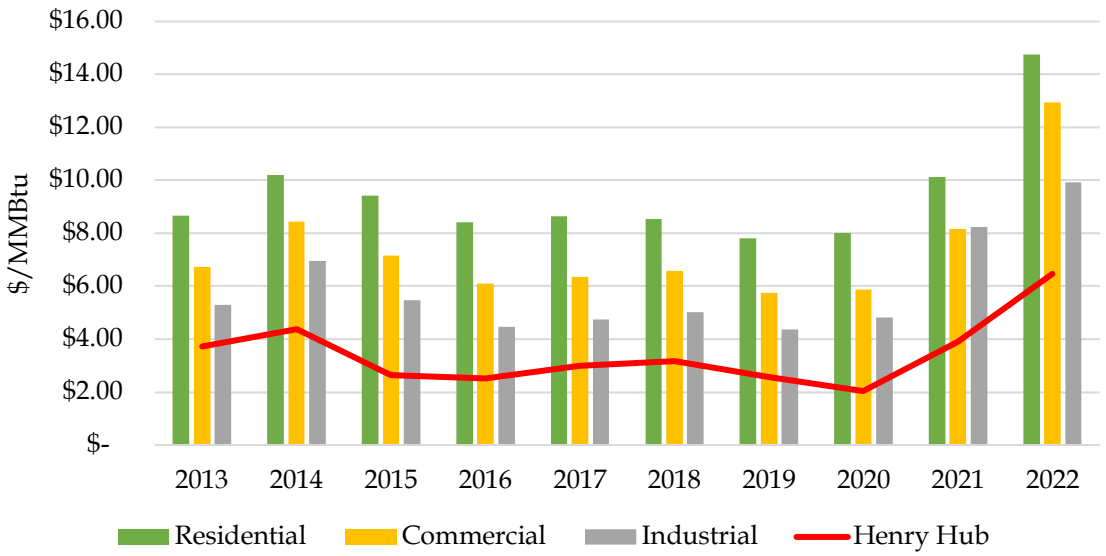


Source: IUB, *Utility Annual Reports* (2013-2022).

Of the three rate-regulated utilities, Black Hills is observed to have the highest average gas rates across all customer groups. For example, its average residential rate in 2022 surpasses those of IPL and MidAmerican by 18.6% and 48.5%, respectively (see Figure 62). Black Hills' high rates are due to several factors. First, Black Hills serves mostly rural areas in Iowa, as mentioned in Section 4.2. This means that most of the areas served by Black Hills have a lower density of customers than urban areas. This requires Black Hills to build and maintain more infrastructure per customer in rural areas. In terms of O&M expenses, Black Hills' total distribution expenses per customer in 2022 was also higher than MidAmerican and IPL by 3%.[222] Also, because of the nature of rural areas, these areas have fewer customers per square mile and require longer distribution lines, which are more expensive to build and maintain. These are all reflected in Black Hills' higher monthly service charges (discussed in Section 6.2.4). In addition, Black Hills also has a higher SSMA, as discussed in Section 6.2.6, along with other automatic adjustment mechanisms, such as the farm tap surcharge and polar vortex recovery factor that IPL and MidAmerican are not currently charging.

[222] Based on LEI's calculation, Black Hills' total distribution expenses was $86.3 per customer compared to MidAmerican and IPL's distribution expense of $84.0 and $84.3 per customer, respectively. Source: Black Hills', IPL's, and MidAmerican's 2022 FERC Form 2 (for the total distribution expenses) and EIA 861 for the number of customers.

Figure 62. Black Hills' average gas rates for residential, commercial, and industrial customers ($/MMBtu)



Source: IUB, *Utility Annual Reports* (2013-2022).

Notably, residential customers consistently face the highest gas rates among the customer groups across all three rate-regulated gas utilities. This is largely due to the higher base rates (variable charge), especially noticeable in IPL and MidAmerican, where residential customers bear the highest base rates, and potentially higher costs associated with providing service to smaller consumers. Over the period from 2013 to 2022, average gas rates for residential customers increased by an average of 4.4%, 4.0%, and 7.4% per year for IPL, MidAmerican, and Black Hills, respectively.

6.3 Water industry

In Iowa, as in other states, water rates are comprised of base rates and some trackers and riders. The base rate has two components: a water service charge and a water consumption charge. The water service charge is a fixed charge that customers pay regardless of their water consumption. It covers the costs of maintaining the infrastructure, meter reading, billing, and other fixed operational expenses. The larger the meter size, the higher the rate, as shown in Figure 63. Larger meter sizes often require larger and more robust infrastructure to accommodate the increased flow of water. This includes larger pipes, valves, and other components. The higher service charge helps cover the costs associated with installing and maintaining this infrastructure. In contrast to the water and gas sectors, IAWC applies the same water service charge rates across its residential, commercial, and industrial customer segments. Notably, these charges remained constant for each meter size over the last five years (2018-2022), despite the increase in IAWC's rate base per customer.

Figure 63. Average water service charges for residential, commercial, and industrial customers ($/month)

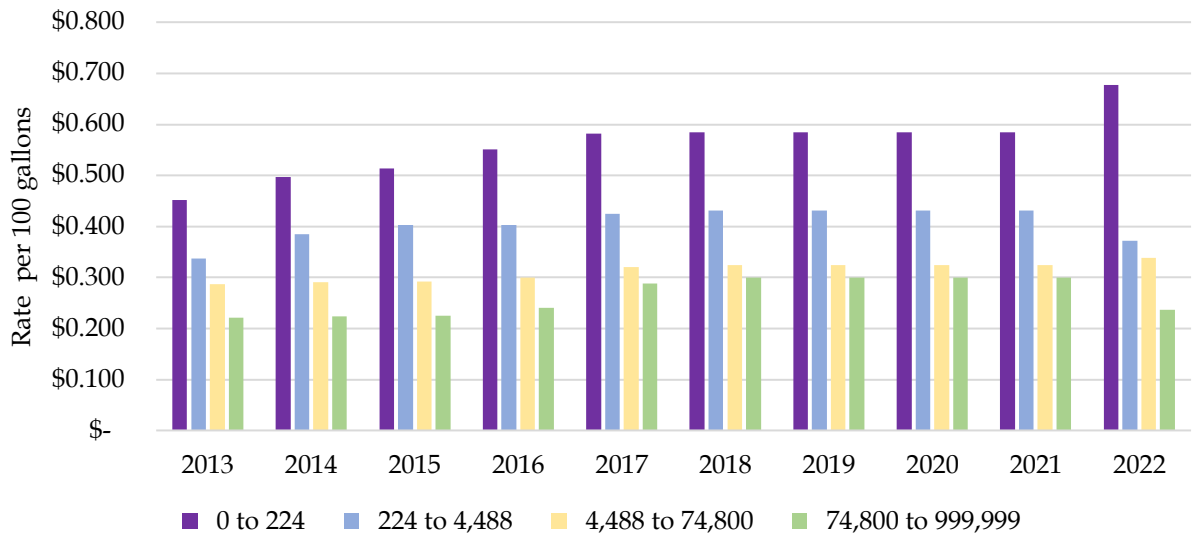
	Meter Size									
Year	5/8"	3/4"	1"	1-1/2"	2"	3"	4"	6"	8"	10"
2013	$ 14.26	$ 21.35	$ 35.61	$ 71.22	$ 113.93	$ 213.53	$ 355.98	$ 711.96	$ 1,139.15	$ 1,637.54
2014	$ 13.83	$ 20.73	$ 34.56	$ 69.12	$ 110.57	$ 207.28	$ 345.51	$ 691.03	$ 1,105.64	$ 1,589.40
2015	$ 13.36	$ 20.03	$ 33.39	$ 66.77	$ 106.83	$ 200.29	$ 333.82	$ 667.66	$ 1,068.24	$ 1,535.67
2016	$ 13.36	$ 20.03	$ 33.39	$ 66.77	$ 106.83	$ 200.29	$ 333.82	$ 667.66	$ 1,068.24	$ 1,535.67
2017	$ 13.85	$ 20.78	$ 34.63	$ 69.25	$ 110.73	$ 207.68	$ 346.11	$ 692.23	$ 1,107.59	$ 1,592.23
2018	$ 14.00	$ 21.00	$ 35.00	$ 70.00	$ 111.90	$ 209.90	$ 349.80	$ 699.60	$ 1,119.40	$ 1,609.20
2019	$ 14.00	$ 21.00	$ 35.00	$ 70.00	$ 111.90	$ 209.90	$ 349.80	$ 699.60	$ 1,119.40	$ 1,609.20
2020	$ 14.00	$ 21.00	$ 35.00	$ 70.00	$ 111.90	$ 209.90	$ 349.80	$ 699.60	$ 1,119.40	$ 1,609.20
2021	$ 14.00	$ 21.00	$ 35.00	$ 70.00	$ 111.90	$ 209.90	$ 349.80	$ 699.60	$ 1,119.40	$ 1,609.20
2022	$ 14.00	$ 21.00	$ 35.00	$ 70.00	$ 111.90	$ 209.90	$ 349.80	$ 699.60	$ 1,119.40	$ 1,609.20

Note: Water service charges shown above are based on the monthly average charges for Clinton and Quad Cities. 2022 figures are based on the consolidated rate.

Source: Data acquired through a data request response from IAWC through Docket No. NOI-2023-0001.

The consumption charge or the "water usage charge" or "meter rate" is a variable charge based on the volume of water consumed by the customer and measured per gallon. The water usage charge is determined by the monthly consumption of customers. The rates for water usage charges are higher in the lower consumption segments (e.g., 0 to 224 gallons) and decrease as consumption levels rise. Water usage charges stayed the same for all consumption levels from 2019 to 2021. In 2022, usage charges rose for two segments: customers using up to 224 gallons and those using between 4,488 and 74,800 gallons. Despite a 15.8% rate increase for consumption levels between 0 and 224 gallons from 2021 to 2022 and a 4.3% increase for levels between 74,800 and 999,999 gallons from 2021 to 2022, the general trend in 2022 indicates a 3.64% average decrease in rates across all water consumption segments from 2021 to 2022 (see Figure 64).

Figure 64. Average water usage charges for residential, commercial, and industrial customers ($ per 100 gallons)



London Economics International LLC
717 Atlantic Avenue, Suite 1A
Boston, MA 02111
www.londoneconomics.com

Note: The water usage charges shown above are based on the monthly average for Clinton and Quad Cities. 2022 figures are based on the consolidated rate.

Source: Data acquired through a data request response from IAWC through Docket No. NOI-2023-0001.

6.3.1 IAWC has a capital tracker to recoup costs related to distribution system improvements

IAWC has a capital tracker called the QIP Surcharge, designed specifically to recoup fixed costs (including depreciation and pre-tax return) associated with specific distribution system improvement projects that are non-revenue producing. The projects that are qualified under the QIP include:

- mains and valves, services, and hydrants installed as replacements for existing facilities that are worn out, deteriorated, or upgraded;
- unreimbursed capital projects to relocate the rate-regulated utility's facilities located in the public right-of-way due to state, county, or municipal roadway or utility improvements mandated by the state's Department of Transportation or other governmental agencies; and
- infrastructure mentioned above that is replaced to address water problems that have been documented as presenting a significant health or safety concern for customers.[223]

The QIP surcharge has a limit of 15% of the total authorized revenues approved in the latest rate case and resets to zero after subsequent general rate cases. The surcharge rates differ among customer types, determined by the allocation for each customer type derived from IAWC's most recently approved cost of service study. Notably, industrial customers had the highest surcharge, ranging from $26.56/month to $94.00/month between 2018 and 2021, whereas residential and commercial customers paid an average of $0.62/month and $2.94/month, respectively, during the same period. Over the past four years, all customer classes experienced an annual average increase of 57.1% in QIP surcharge rates, with the most substantial surge occurring in 2020, more than doubling the rates for residential and commercial customers. Nevertheless, since January 1, 2018, the IUB allowed the QIP to be offset by bill credits generated by tax benefits stemming from the Tax Cuts and Jobs Act of 2017.[224]

IAWC also has a non-recurring expense rider to capture the rate effects of specific items that are temporary in nature and not included in the base rates. These items include RCEs, unrecoverable QIP surcharge mechanism reconciliation balances from 2018-2020, and certain expenses related to the COVID-19 pandemic.[225] For the past two years (2021-2022), the non-recurring expense rate remains flat at $0.04181 per 100 gallons for residential, commercial, and industrial customers.

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[223] Iowa-American Water Company. *Water Tariff*. Effective Date: October 11, 2021. P. 12.

[224] IUB. *Order Approving Tariff.* Docket TF-2018-0280. July 12, 2018. P. 3.

[225] Iowa-American Water Company. *Water Tariff*. Effective Date: April 10, 2023. P. 15.

Figure 65. Average QIP surcharge rate ($/month)

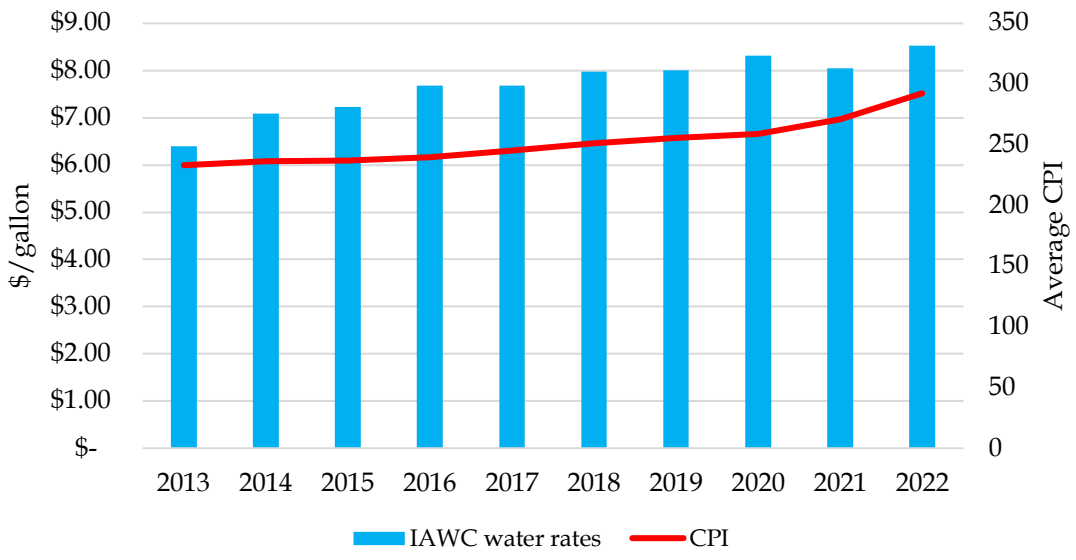
Year	Residential	Commercial	Industrial
2018	$ 0.26	$ 1.26	$ 26.56
2019	$ 0.42	$ 2.03	$ 43.93
2020	$ 0.86	$ 4.10	$ 85.88
2021	$ 0.92	$ 4.36	$ 94.00
2022	$ -	$ -	$ -

Source: Data acquired through a data request response from IAWC through Docket No. NOI-2023-0001.

6.3.2 Average water rates have trended in line with inflation over the past decade

Over the past decade, IAWC witnessed a 3.3% average annual increase in water rates, primarily driven by slight adjustments in water usage charges alongside minimal rises in water service fees. The rates also have trended in line with inflation (see Figure 66).

Figure 66. Average water rates ($/gallon)



Source: IUB, *Utility Annual Reports* (2013-2022).

7 Review of ratemaking legislation, procedures, and mechanisms in other selected MISO/SPP states

Key findings

Ratemaking legislation, procedures, and mechanisms

- Iowa has similar ratemaking processes to the peer states but a decreased amount of general rate cases for electric and gas utilities from 2013-2022.
- The peer states implement different procedures and mechanisms in legislation (IRP, MRP, PIM, PBR) that present options for changes that could be adopted in Iowa.

Electric industry

- IPL's electric rates were higher than the peer average while MidAmerican charged the lowest rates out of the selected utilities for all sectors for most of the years.
- LEI found that utilities with higher rate bases per customer and operating expenses per customer tend to have higher electric rates. MidAmerican notably had lower normalized operating expenses from 2017 to 2022 and had the lowest electric rates in those years. However, the volatility shown between each utility and across states is occurring even with IRP requirements in place for each of the peer states, concluding that these requirements may not have significant impact on utilities' rates.

Gas industry

- States with high-consuming customers (consumption volume to customer ratio) benefit from economies of scale. States with low-consuming customers experienced higher gas rates overall.
- Utilities with higher total bundled revenues per customer charge higher rates to recover more costs from customers. Iowa consistently has a higher consumption volume to consumer ratio and a lower bundled revenue per customer, which aligns with the fact that Iowa's gas rate-regulated utilities offered lower rates than the average peer states' gas rates for 2013 to 2020.

Water industry

- When focusing on states where water utilities are regulated, IAWC seems to stand out in terms of higher rates for commercial and large residential customers. This increase seen in Iowa compared to the other jurisdictions may be attributable to the difference in ratemaking procedures in the water industry for each state, in addition to the fact that rate-regulated utilities need the ability to earn a just and reasonable return on investments to maintain safe and reliable services.
- Rate-regulated utilities are also typically privately-owned companies with the financial ability to make investments in infrastructure needed to maintain quality system, compared to municipal systems which may not have the financial flexibility to make such investments and therefore cannot charge higher rates.

7.1 Overview of states selected for comparative analysis

To determine the peer states to include in this Study for comparison to Iowa, LEI followed a methodical two-step approach. First, LEI gathered key statistics relevant to generation and customer profiles of each MISO and SPP state. Second, LEI identified which states have similarities in utility business structure and ratemaking mechanisms that are present in Iowa's ratemaking regime. Further discussion of the selection process for the five peer states is included in Appendix 5.

LEI's comparative review of the five peer states to Iowa started with criteria such as population, installed capacity, and wind generation. Iowa's installed capacity per customer is in line with Kansas and South Dakota, and it closely aligns with the peer average (see Figure 67). While Iowa's demand per customer is slightly higher than others, it is not significantly different when compared to Kansas, Minnesota, Missouri, and South Dakota. Iowa leads the peer states in wind energy as a percentage of total generation, followed by South Dakota and Kansas. Despite having the highest proportion of industrial load among the peer states, Iowa has the lowest share of commercial load. In conclusion, Iowa's electricity profile exhibits similarities with the selected peer states, showcasing a balanced capacity, comparable demand, leadership in wind energy generation, and a distinctive distribution of industrial and commercial loads relative to its peer group.

Figure 67. Relevant energy characteristics of Iowa and peer states

Jurisdiction	Installed capacity (MW, 2022)	Customer count (2022)	Installed capacity per customer (MW)	Sales (TWh, 2022)	Sales per customer (MWh)	Population Density (2022, ppl/sq mi)	Wind as a % of total generation (2022, MWh)	Commercial Load (2022, %)	Industrial Load (2022, %)
Iowa	22,546	1,680,950	0.013	54.2	32.2	57.9	62.7%	23%	49%
Kansas	18,427	1,567,086	0.012	41.9	26.7	36.2	47.0%	38%	28%
Michigan	30,538	5,041,138	0.006	100.6	20.0	179.3	7.7%	37%	28%
Minnesota	18,460	2,840,595	0.006	66.6	23.4	73.2	25.6%	34%	31%
Missouri	21,128	3,290,950	0.006	80.3	24.4	90.3	9.5%	37%	16%
South Dakota	6,324	499,716	0.013	13.5	27.0	12.0	57.5%	37%	24%
****Average**	18,975	2,647,897	0.009	60.6	24.3	78.2	29.5%	36%	26%

For comparability, the averages for each column are calculated using the data from the five peer states; they exclude Iowa data.

Source: EIA. *Historical State Data.* Web. Accessed October 19, 2023.

Based on total electric sales and customer count, in 2022 the sales in Iowa were 32.2 MWh per customer, which is higher than the peer average of 24.3 MWh per customer. Iowa notably has a higher share of industrial load in terms of total electricity consumption compared to the peer states, and industrial customers have a much higher demand per customer compared to the equivalent figures for the residential and commercial classes.[226] For installed capacity per customer, Iowa's capacity (0.013 MW per customer) is also higher than the peer average of 0.009

[226] In 2022 in Iowa, residential electric consumption was 10.65 MWh per customer, commercial consumption was 50.83 MWh per customer, and industrial consumption was 2806.19 MWh per customer.

MW per customer, which aligns with its above average MWh demand per customer relative to the peer states.

When looking at the overall customer count and population density in each state, though, a larger pattern emerges as far as which states contain more predominantly urban areas vs. rural areas. Michigan has both the highest total customer count and population density, indicating that the utilities in Michigan serve more urban areas than a state like South Dakota, with a much lower customer count and population density. An initial review of these metrics can provide insight into the capital and operating expenses for the utilities in each state, as utilities would inherently have to spend more to serve a larger number of customers or cover more distance to serve the same customers.

Overall, these results indicate the comparability of Iowa to the selected peer states and highlight key differences that are explored in greater detail in subsequent sections.

7.2 Comparison of regulator's authority and ratemaking mechanisms in the reviewed peer states

To compare ratemaking authority across Iowa and the selected peer states, LEI first reviewed the regulations and ratemaking authorities of the regulators of each state. This included an examination of the sectors overseen by each state's regulator encompassing the areas of electric, gas, and water. Then, LEI delved into the components of each state's ratemaking process. LEI also identified whether any of the peer states' ratemaking legislation contains ratemaking design elements, including advance ratemaking, revenue sharing mechanism, automatic adjustment mechanisms (such as riders and/or trackers), IRP requirements, MRP, and PBR in their respective ratemaking legislation and procedures. This section provides a summary of the sectors overseen by the regulators of the peer states and Iowa, as well as the additional ratemaking components used in these states. Appendix 6 has a more detailed discussion of these topics for each state.

7.2.1 The regulatory bodies of Iowa and the peer states have similar authority

Like the IUB, regulators of all the peer states reviewed in the Study have ratemaking authority over electric and gas rate-regulated utilities per legislation. For these utilities, each regulator is responsible for ensuring the utilities provide safe and reliable services at just and reasonable rates. Municipal utilities and cooperatives are exempt from this legislation, although in Kansas they can elect to be under the regulator's purview.[227] Of the selected peer states, only Kansas and Missouri share the IUB's responsibility of regulating the rates and overseeing the services of water utilities, as shown in Figure 68. The regulators of these peer states set the practicing standards for the regulated utilities in each state based on the laws enacted by the legislative authority, as is the case in Iowa.

[227] 199 IAC 26.16 allows coops in Iowa to elect to be rate-regulated as well.

Figure 68. Comparison of regulatory scope across the six states

Jurisdiction	Electric utilities regulated (Y/N)	Water utilities regulated (Y/N)	Gas utilities regulated (Y/N)
Iowa	Yes	Yes	Yes
Kansas	Yes	Yes	Yes
Michigan	Yes	No	Yes
Minnesota	Yes	No	Yes
Missouri	Yes	Yes	Yes
South Dakota	Yes	No	Yes

Source: US EPA; S&P Global; state regulator websites.

Regarding electric transmission specifically, other regulators regulate transmission by issuing certificates or permits necessary for the construction of transmission lines, similar to the process in Iowa. For example, the Michigan Public Service Commission ("PSC") issues a Certificate of Public Convenience and Necessity for transmission lines, but the applications are reviewed through a contested case.[228] Both the Minnesota[229] and South Dakota[230] PUCs issue permits to allow construction of high voltage transmission lines.

These similarities in the authority of each regulatory body in Iowa and the peer states allow for analysis between the states to review how the ratemaking procedures in each state are similar to or different from Iowa. The difference in water utility specifically provides an opportunity to analyze how rates and services are discernible between regulated and non-regulated utilities in the water sector.

7.2.2 Iowa has a similar ratemaking process to the peer states, with a few exceptions

Ratemaking through a general rate case proceeding in both Iowa and the five peer states follows a similar process for all three sectors. The rate case proceedings all involve public and evidentiary hearings, where evidence and data are reviewed, and the requests submitted by the utilities checked for prudency. The regulators of all states may, under certain circumstances, initiate a rate case proceeding if there is an indication that rates are not just and reasonable. Expert testimonies and feedback from relevant stakeholders are also part of the ratemaking process. In addition, in Kansas and South Dakota the Commission staff is able to submit evidence during the rate case proceeding. This allows for the Commission in these states to ensure that all evidence that needs to be considered when making a final decision can be available to all stakeholders and reviewed by the Commission. The regulators of the peer states consider a variety of factors used in making

[228] Michigan Public Service Commission. *Facility siting*. Web. Accessed November 4, 2023.

[229] Minnesota Public Utilities Commission. *Power plant site permits & transmission line route permits.* Web. Accessed November 4, 2023.

[230] South Dakota Legislature. *Chapter 49-41B Energy Conversion and Transmission Facilities.* Web. Accessed November 4, 2023.

a determination on the rate case, such as the total investment proposed by the utility or the utility's operating expenses. For Michigan and Minnesota, an ALJ presides over the rate case proceedings and publishes a report that is reviewed by the respective regulator, adding an additional step into the ratemaking process.

The general rate case process in the peer states differs in terms of the time allotted to concluding the electric and gas rate cases. The South Dakota PUC has six months to issue its final decision[231], the Kansas Corporation Commission ("KCC") has eight months[232], and the Minnesota PUC has ten months[233] (per precedent). The IUB has ten months after the filing date to make a final decision, per statute.[234,235] From 2003 to 2022, Iowa gas rate cases had an average duration of 8.7 months and electric rate cases had an average duration of 9.5 months.[236]

Furthermore, it is also worth noting that rate cases happen more frequently in peer states, as observed from 2013 to 2022. Not mandated by law, electric utilities in Kansas, Michigan, Minnesota, and Missouri tend to file general rate cases every two years, while electric utilities in South Dakota file less frequently at three years. The average number of rate cases per electric utilities in the peer states is 3.7, but that average increases to 6.8 per year for gas utilities in the peer states (see Figure 69).

[231] South Dakota Public Utilities Commission. *Electric Rate Increase Requests.* Web. Accessed October 23, 2023.

[232] Kansas Corporation Commission. *The utility ratemaking process.* Web. Accessed October 19, 2023.

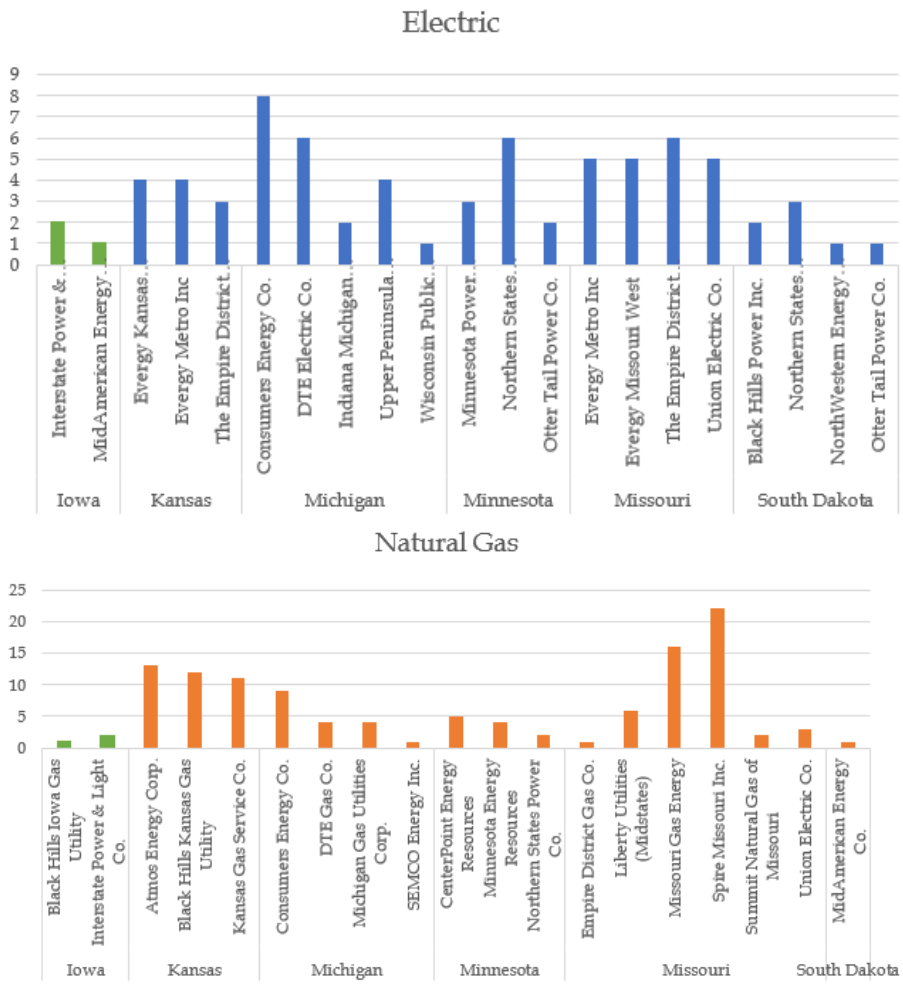
[233] Minnesota Public Utilities Commission. *General Rate Case*. Web. Accessed October 20, 2023.

[234] Iowa Legislature. *Public Utility Regulation, Iowa Code section 476.6*.

[235] From shortest to longest, it's South Dakota with six months, Kansas with eight months, and Iowa and Minnesota with ten months.

[236] S&P Global. Accessed October 3, 2023.

Figure 69. Total number of electric and gas rate cases for utilities in Iowa and peer states (2013-2022)



Source: S&P Global.

From LEI's assessment, there is no clear indication that certain ratemaking mechanisms (except for an MRP) influence the frequency of the general rate case process in these peer states where there is not a legislatively mandated (or otherwise specified) general rate case cycle. Overall, the ratemaking process in the peer states is comparable to Iowa with few exceptions—those being the ALJ, assigned duration, and ability for regulatory staff to submit evidence. However, these exceptions are not directly tied to the frequency of rate cases in the peer states.

7.2.3 Peer states implement ratemaking procedures and mechanisms that could be considered for inclusion in Iowa

The ratemaking mechanisms included in this section were selected for comparison to Iowa based on the understanding that they play a key role in shaping the ratemaking process—and ultimately the rates—of Iowa's rate-regulated utilities. The purpose of the comparative assessment was to understand how these same ratemaking mechanisms impact (or work within the confines of) the

ratemaking processes of peer states, and in turn to understand whether the impact on rates is similar to what is seen in Iowa. For instance, revenue sharing in Iowa is a mechanism that only applies to MidAmerican given that it was introduced through an IUB-approved Settlement Agreement and not through legislation, but in general application it may be mandated or part of a larger PBR statute (as an ESM). IRP requirements in other states include mandating that the utilities file long-term resource plans with their regulators, the purpose of which is to provide transparency with respect to how the utility plans to manage its generation portfolio over a period of ten to twenty years into the future. MRPs provide the utility the opportunity to seek approval for structured rate increases or fixed rates over the predetermined term of the MRP, and usually include provisions for the introduction of additional capital assets and tracking mechanisms.

Figure 70. Comparison of regulatory mechanisms across the six states

Jurisdiction	Revenue Sharing (Y/N)	IRP requirements (Y/N)	Multi-year rate plan	Advance ratemaking	Performance-based regulations	Performance-incentive mechanisms	Retail choice	Trackers/ Riders
Iowa	Yes	No	No	Yes	No	No	No	Yes
Kansas	No	Yes	No	Yes	No	No	Yes	Yes
Michigan	No	Yes	No	No	Yes	No	Yes	Yes
Minnesota	No	Yes	Yes	No	No	Yes	No	Yes
Missouri	No	Yes	No	No	No	No	No	Yes
South Dakota	Yes	Yes	No	No	No	No	Yes	Yes

Source: US EPA, S&P Global, state regulator websites.

Furthermore, several regulatory mechanisms that are currently in use in other states are not yet implemented in Iowa, including IRP, MRP, PIMs, and PBR. There is no legislative mandate in Iowa to undertake a resource planning process or an IRP for any sector, unlike the peer states. However, recent advance ratemaking proceeding settlements have included required RESs to be completed by Iowa utilities.[237] Iowa legislation does not provide the option for utilities to file an MRP, which is similar to other states excluding Minnesota; Minnesota legislation allows MRPs for utilities to establish rates over a specified period of time, typically spanning multiple years.[238] Certain ratemaking components such as the MRPs and PBR are not currently utilized in Iowa. However, revenue sharing (one component of PBR) is available as a mechanism in Iowa, but to date it is utilized only by MidAmerican. Revenue sharing mechanisms are also uncommon in the group of peer utilities, being only available in South Dakota. This mechanism is not part of a larger PBR framework in South Dakota but is used by multiple utilities that use fuel and purchased power adjustment clauses and return of revenues associated with new load growth or

[237] According to the IUB's October 19, 2023, Order in Docket No. RPU-2021-0003, the approved RES includes the following language: IPL will agree to conduct additional generation planning in the form of a RES within the next 24 months from the date of the Settlement Agreement. During that 24-month period, IPL will engage in a stakeholder process involving IUB staff and the other Parties regarding planning assumptions and model results. Upon the written request of each Party, IPL shall make available, at no cost, a license authorizing the use by each Party of the Aurora Energy Forecasting and Analysis software (or such other modeling software as IPL may use for the RES) for the limited purpose of facilitating each Party's participation in the RES.

[238] Minnesota Legislature. *216B.16 Rate Change; Procedure; Hearing*. Web. Accessed November 4, 2023.

generation facilities as revenue sharing mechanisms.[239] These mechanisms share revenues with customers in the form of customer credits—more in line with a traditional ESM than what is utilized in Iowa. PBRs are available in Michigan through the energy optimization program that provides financial incentives to utilities that exceed energy saving targets.[240] In Minnesota, the PIMs employed by Xcel Energy provide the utility the flexibility to seek out decarbonization and electrification measures that would be cost-effective.[241]

Advance ratemaking as a ratemaking mechanism is specific to Iowa, through which utilities can request specific treatment for certain types of electric generating facilities and water utility acquisitions. Amongst the five peer states, only Kansas applies a mechanism comparable to Iowa's advance ratemaking mechanism, where utilities can apply for predetermined rate approval solely for nuclear generation facilities.[242] Michigan, Minnesota, and Missouri have renewable portfolio standards ("RPS") in place, which require the electric utilities in each state to achieve certain renewable energy goals based on either the production or sale of electricity generated by renewable energy. Michigan has set goals to have 35% of its energy production come from renewable sources by 2025, while Minnesota and Missouri have set goals for the total sales to come from renewable energy—55% of sales by 2035 for Minnesota and 15% per year by 2021 for Missouri.[243] These RPS do not provide specific incentives for utilities to build renewable generation, as is the case with advance ratemaking, but they are a tool that states can implement to indirectly incentivize investment in renewable generation.

More common than advance ratemaking is the IRP mechanism. All peer states require electric utilities to produce and submit an IRP that identifies how utilities plan on satisfying future demand and other regulatory or policy mandates. Kansas, Minnesota, and Missouri require IRPs for rate-regulated gas utilities as well[244], while the other peer states do not. As part of the IRP, utilities must explain their plans for additional generation assets in the context of state and regulatory objectives.

The IRP process for electric utilities differs in each state in terms of the frequency of their filings—ranging from two to three years—and the horizons that they cover—ranging from ten to twenty years. South Dakota and Kansas are on the lower end for the required forecast length, requiring

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[239] S&P Global. *RRA Regulatory Focus Adjustment Clauses*. November 12, 2019.

[240] Regulatory Assistance Project. *Performance-based Regulation Options*. August 2017.

[241] Minnesota Legislature. *216B.16 Rate Change; Procedure; Hearing*. Web. Accessed November 4, 2023.

[242] Kansas Legislature. *Article 1 – Power of State Corporation Commission*. Web. Accessed October 20, 2023.

[243] NCSL. "State Renewable Portfolio Standards and Goals." Web. August 13, 2021.

[244] Kansas Corporation Commission. *Order adopting integrated resource plan and capital plan framework.* Accessed October 31, 2023; Minnesota Public Utilities Commission. *Gas Resource Planning*. Web. Accessed October 21, 2023; Missouri Public Service Commission. *Integrated Resource Planning*. Web. Accessed October 30, 2023.

ten-year forecasts[245,246], while Missouri requires utilities to file IRPs that cover a modeling horizon of twenty years.[247] The regulators in all peer states[248] review the IRPs for prudency and reasonableness to cover anticipated future energy and capacity needs. The regulators also ensure that the resources that the utilities plan on adding to the system align with environmental requirements (given regulatory and state objectives as well as the aging of generation resources) and shifting customer needs. Following this review, regulators in all peer states ultimately approve, reject, or suggest recommendations to the utility IRPs. This decision regarding the IRPs can be referenced in future proceedings, such a general rate case, prior to the release of a subsequent IRP to analyze the proposed generation assets and determine if the assets included in a proposed rate base align with what was previously included in an IRP.

Retail choice for electricity is not an option in Iowa but is available to customers in Michigan. Alternative electric suppliers in Michigan are allowed to sell power supply at unregulated rates to residential customers participating in the retail choice program.[249] Retail choice for C&I gas customers is available in Michigan, Kansas, and South Dakota as well.[250]

Like Iowa, utilities in the peer states can employ riders approved by the respective utility regulatory commissions. In all the states, riders are meant to recover certain costs from utility operations. Variations of fuel adjustment cost riders and environmental cost riders exist in the peer states as well. These riders have similarities to the EAC and PGA currently in use in Iowa as discussed in Section 6.1.5.1 and 6.2.5.1.

These differences in ratemaking procedures and mechanisms present options that could be adopted in Iowa to better advance the policy objectives of HF 617. The presence of these procedures in the peer states indicates that the regulators in these states are using them to oversee and enforce just and reasonable rates with reliable and safe utility services, which asks the question whether they should be included in Iowa. LEI provides specific recommendations for changes that could be made in Iowa regarding its ratemaking procedures and mechanisms based on these similarities and differences to the peer states in Section 7.2.

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[245] South Dakota Public Utilities Commission. *Electric utility 10-year plans.* Web. Accessed October 23, 2023.

[246] Kansas Corporation Commission. *Order adopting integrated resource plan and capital plan framework.* Accessed October 31, 2023.

[247] Missouri Public Service Commission. *Integrated Resource Planning*. Web. Accessed October 30, 2023

[248] South Dakota legislation refers to IRPs as "long-term resource plans," but it functions the same as an IRP.

[249] Michigan Public Service Commission. *Status of Electric Competition in Michigan*. February 1, 2023.

[250] American Coalition of Competitive Energy Suppliers. *State-by-state information*. Web. Accessed November 15, 2023.

7.3 Comparison of utility rates in peer states

In this section, LEI compares the electric, gas, and water rates[251] of the rate-regulated utilities of Iowa with those of the peer states and investigates the factors that potentially contribute to the differences in rates among the utilities. The electric rates of MidAmerican and IPL were evaluated against the electric rates of the peer states' utilities while the gas rates of MidAmerican, IPL, and Black Hills, and IAWC's water rates were assessed against the average gas rates and average water rates of the peer states, respectively.[252] Through this analysis, LEI finds that the rates of Iowa utilities for all three sectors have some differences to those in peer states. IPL's electric rates in particular are consistently higher than the average of select peer utilities, while MidAmerican consistently has the lowest rates. The gas rates of all three Iowa utilities are average to below average in comparison to the average gas rates in peer states. Lastly, the water rates from IAWC are higher than other peer rate-regulated utilities, with municipal systems having lower rates compared to any of the rate-regulated utilities. Discussion of the reasoning behind these differences is included in the subsequent sections.

7.3.1 For electric rates, MidAmerican is below, and IPL is above the peer average

LEI identified rate-regulated utilities that serve residential, commercial, and industrial customers in the five peer states. LEI compared the historical electric rates of those utilities with those of MidAmerican and IPL.[253] Because MidAmerican and IPL are the only electric rate-regulated utilities in Iowa, whereas the peer states have multiple rate-regulated electric utilities, LEI selected the largest electric rate-regulated utility by customer count and electric sales in each of the five peer states for this analysis. As summarized in Figure 71, LEI identified the following benchmark peers based on these metrics: Evergy Kansas Central and Evergy Kansas South in Kansas[254], DTE Electric Company in Michigan, Northern States Power Co. in Minnesota, Union Electric Co. in Missouri, and Northern States Power Co. in South Dakota[255]. Figure 71 also shows that the average range (an average of residential, commercial, and industrial rates) for the peer rate-regulated utilities in 2022 is between 9.73 and 13.67 cents/kWh, with an average rate of 11.83 cents/kWh. MidAmerican has the lowest rate among the utilities at 7.88 cents/kWh; IPL's rate is slightly higher than the average rate at 12.31 cents/kWh.

As seen in Figure 72, IPL's average electric rates trend near the average of peer utilities' rates. MidAmerican has offered the lowest rates compared to regional peers. IPL's average electric rates have been increasing at an average of 3.08% per year from 2013 to 2022 while MidAmerican's rates have been increasing at 2.35% per year. The average rates of the six peer electric rate-

[251] This rate comparison includes all trackers and riders for Iowa and peer utilities.

[252] As agreed upon with the IUB, LEI did not review Liberty Utilities' gas rates as a part of this analysis.

[253] The electric rates include trackers and riders.

[254] Evergy Kansas Central has the highest customer count in Kansas, and Evergy Kansas South has the highest MWh sales in Kansas, so both utilities were included for this analysis.

[255] EIA. *Form 861.* Web. Accessed November 1, 2023.

regulated utilities increased at an average of 1.97% per year. This average from the peer utilities is slightly below the average annual increase in the CPI in the Midwest Region.[256] The CPI measures the average change over time in the prices paid by consumers for a market basket of consumer goods and services and is commonly used as a measure of inflation. From 2013 to 2022, the CPI has been growing on average at 2.57% per year.[257] The average electric rates of IPL have been growing slightly faster than the CPI per year from 2013 to 2022 while MidAmerican's average electric rates have been growing slightly slower, in line with the other utilities over the same period.

Figure 71. Electric customer count, sales, and average rates (2022)

Utility	State	Customer count	Service territory (sq. mi.)	Customer density (ppl/sq mi)	Sales (MWh)	Average rate (cents/kWh)
MidAmerican	Iowa	719,775	10,000	71.98	27,023,904	7.88
IPL	Iowa	500,000	38,000	13.16	14,303,266	12.31
DTE Electric Co.	Michigan	2,300,000	7,600	302.63	40,897,642	13.67
Union Electric Co.	Missouri	1,200,000	20,300	59.11	31,866,242	9.73
Northern States Power Co.	Minnesota	1,350,000	28,300	47.70	28,994,857	13.24
Evergy Kansas South	Kansas	340,000	11,000	30.91	10,098,630	11.02
Evergy Kansas Central	Kansas	394,000	15,000	26.27	9,848,879	11.92
Northern States Power Co.	South Dakota	100,000	5,500	18.18	2,221,059	11.40
Average*	-	947,333	14,617	80.80	20,654,552	11.83

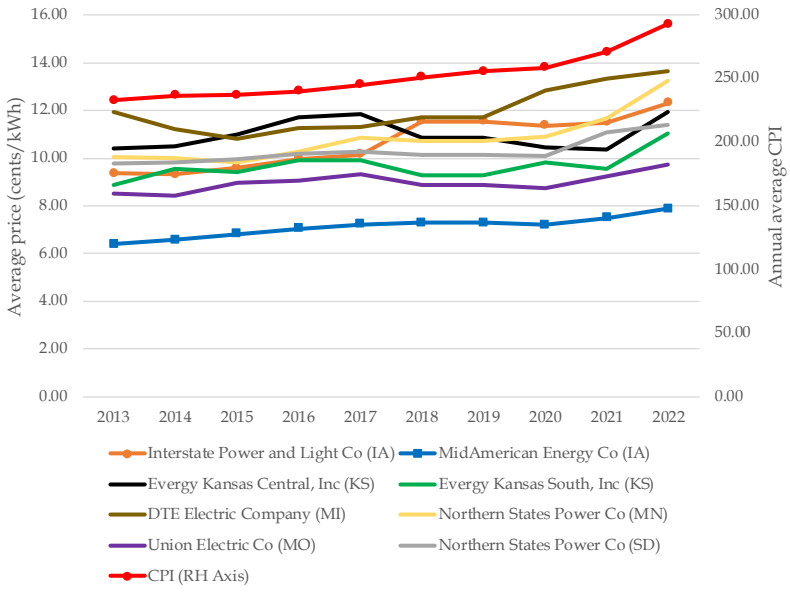
*For comparability, the averages for each column are calculated using the data from the utilities of the five peer states; they exclude Iowa data. The average rate and sales figures cover all customer classes (i.e., residential, commercial, and industrial).

Sources: EIA; S&P Global.

[256] Bureau of Labor Statistics. *12-month percentage change, Consumer Price Index, by region and division.*

[257] Ibid.

Figure 72. Average electric rates—IPL, MidAmerican, and peer utilities (2013 – 2022)



Source: EIA.

In analyzing the average rates for each of the Iowa and peer states' electric utilities, the total customer count would indicate the overall size of each utility. It would follow that a utility with more customers and sales is larger and would expect to receive the benefit of economies of scale to produce lower rates. In addition, a larger service territory would decrease the customer density of a utility's operations. Higher customer densities would indicate that a utility operates in predominantly urban areas rather than rural areas, requiring lower investments in transmission and distribution to serve a higher number of customers. These reduced expenses from operating in urban areas would lower rates by lowering the total costs to be recovered from customer rates. For the peer utilities, however, the utility with the largest customer count and customer density, DTE Electric, has the highest rates—indicating that there are additional factors that are influencing its rates. For the Iowa electric utilities, the application of economies of scale is consistent with the customer count, customer density, and average rates seen for IPL and MidAmerican.

Rate base

LEI also reviewed the authorized rate base[258] from each utility's last rate case with an IUB or Commission decision and calculated the rate base by customer count based on the year of rate case approval. A high rate base per customer indicates that the utility has significant investments in infrastructure, relative to the number of customers it serves, which can be indicative of a large service area or significant CapEx to be recovered in rates. Conversely, a low rate base per

[258] The rate base is the sum of net book value assets, CapEx, and working capital less depreciation.

customer means that the utility's investments are relatively small in proportion to the customer base.

Figure 73 shows that IPL had the highest rate base per customer among the selected utilities while Union Electric had the lowest rate base per customer based on their most recent rate case approval. This relationship aligns with the average electric rates of these utilities. IPL had higher than average electric rates for most of the years in the 2013 to 2022 timeframe. On the other hand, Union Electric's electric rates were all below average, showing a basic correlation between the rate base per customer and electric rates.

Figure 73. Rate base per customer for the rate-regulated utilities

Utility	Approval date of most recent rate case	Authorized ROE	Customer count in the approval year	Authorized rate base ($M)	Rate base per customer	Operating expenses of the approval year ($M)	Operating expenses per customer	Revenue requirement ($M)	Revenue requirement per customer
IPL	1/8/2020	10.02%	494,552	$ 6,126.71	$ 12,388.41	$ 1,296.71	$ 2,621.99	$ 1,910.61	$ 3,863.31
MidAmerican	2/28/2014	10.00%	643,046	$ 5,762.73	$ 8,961.61	$ 1,198.17	$ 1,863.27	$ 1,774.44	$ 2,759.43
Evergy Kansas Central	9/27/2018	9.30%	381,420	NA	NA	$ 3,342.30	$ 8,762.78	NA	NA
DTE Electric Co.	1/18/2022	9.90%	2,257,415	$ 20,406.68	$ 9,039.84	$ 17,480.00	$ 7,743.37	$ 19,500.26	$ 8,638.31
Northern States Power Co.	6/1/2023	9.25%	1,342,634	$ 11,885.26	$ 8,852.20	$ 5,864.00	$ 4,367.53	$ 6,963.39	$ 5,186.36
Union Electric Co.	12/22/2021	9.53%	1,244,264	$ 10,182.45	$ 8,183.51	$ 6,394.00	$ 5,138.78	$ 7,364.39	$ 5,918.67
Northern States Power Co.	6/6/2023	NA	100,610	$ 829.16	$ 8,241.28	$ 5,864.00	$ 58,284.46	NA	NA

Notes: The authorized rate base for Evergy Kansas Central was not available in S&P Global as referenced by LEI. The approved ROE, revenue requirement, and revenue requirement for Northern States Power Co. (South Dakota) is N/A because the rate case is still ongoing. Evergy Kansas South has not filed a rate case in this period. Revenue requirement = (rate base x ROE) + operating expenses.

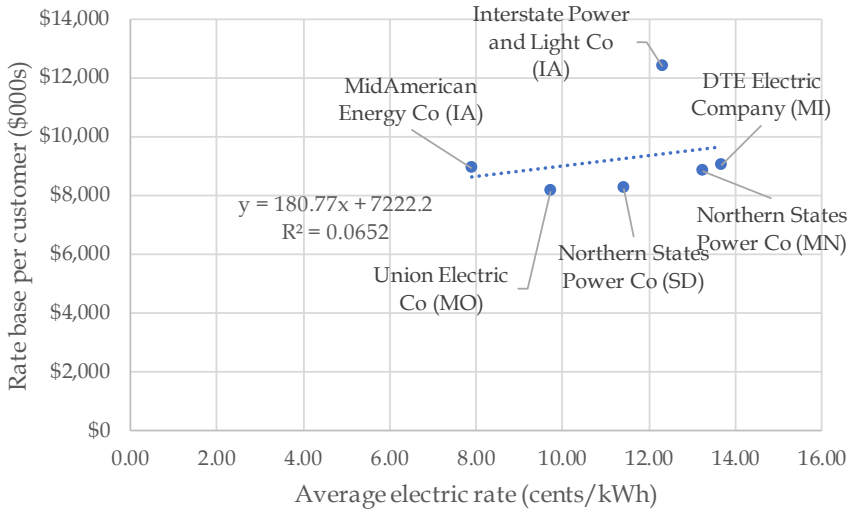
Caveat: These values are being compared across different years based on when the rate base was approved per information available to LEI, as opposed to the analysis from Section 6.1.1 which includes rate base values for MidAmerican from its revenue sharing mechanism.

Source: S&P Global; financial statements of the selected utilities; EIA.

Reviewing the relationship between the rate base per customer and average electric rates (from the same year as the approved rate case), it shows that there is a positive correlation between these two metrics (see Figure 74). Holding the other components of a utility's revenue requirement from a rate case proceeding constant, this would mean that a higher rate base per customer equates to higher rates for a utility. IPL and Union Electric are a clear example of this correlation, as are the other utilities when compared in isolation.[259] This aligns with the understanding that a higher rate base per customer indicates that a utility is increasing its capital investments which leads to an increased need to recover costs from its customer rates, leading to higher overall rates.

[259] Figure 25 shows that MidAmerican's rate base per customer were higher than IPL's in 2018 and 2020. However, as LEI noted, MidAmerican has not filed a rate case since 2013; therefore, the rate base figures previously shown from 2014 to 2022 have not yet been reflected in MidAmerican's rate base.

Figure 74. Rate base per customer vs. electric rates



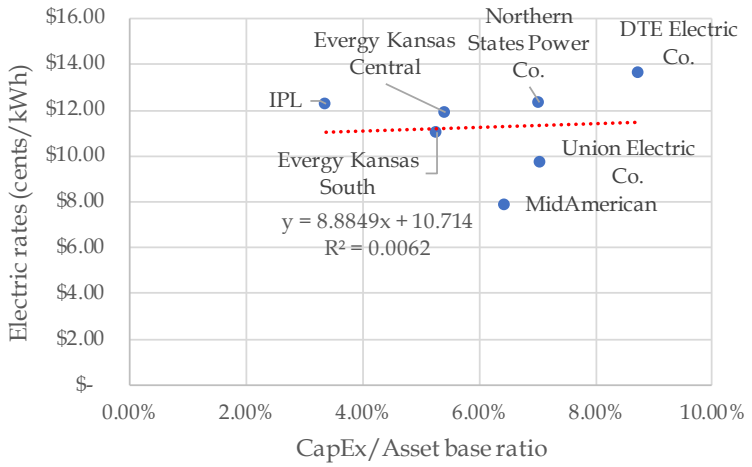
Note: The values for both rate base per customer and average electric rate are for the respective years in which the utilities' last rate case was approved.

Source: S&P Global; EIA.

CapEx and Asset base

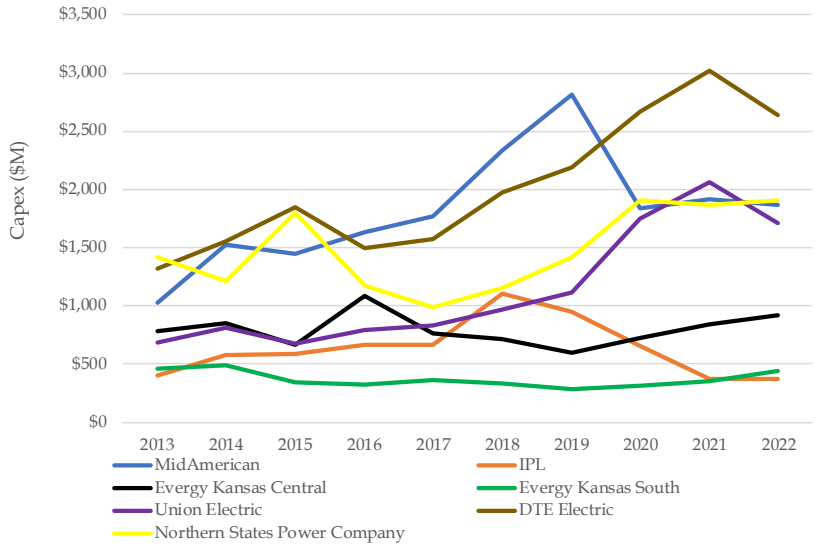
This analysis holds true when viewing the relationship between the CapEx/Asset base ratio and electric rates for these utilities as well. There is a positive correlation between these two metrics when comparing for the year 2022 (see Figure 75). The CapEx/Asset base ratio shows how much a utility is spending to invest in its capital infrastructure relative to the value of its current assets—a higher percentage means a higher amount of CapEx (and therefore an increased overall rate base). This correlation indicates that utilities which are looking to increase their asset base through CapEx will charge higher rates during the year of investments to look to recover those costs. Over time, the amount of CapEx for the Iowa and peer utilities has increased primarily since 2016, with four utilities separating themselves as significant spenders (see Figure 76). Those four utilities—DTE Electric, Northern States Power Co., MidAmerican, and Union Electric Co.—also make up the four highest utilities in terms of CapEx/Asset base ratio for 2022, but they do not make up the top four utilities in terms of electric rates. This would indicate that additional factors contribute to the overall structure of a utility's rates, with CapEx and Asset base as two of those factors.

Figure 75. CapEx/Asset base ratio vs. electric rates (2022)



Source: S&P Global; EIA.

Figure 76. CapEx of selected utilities (2013 – 2022)



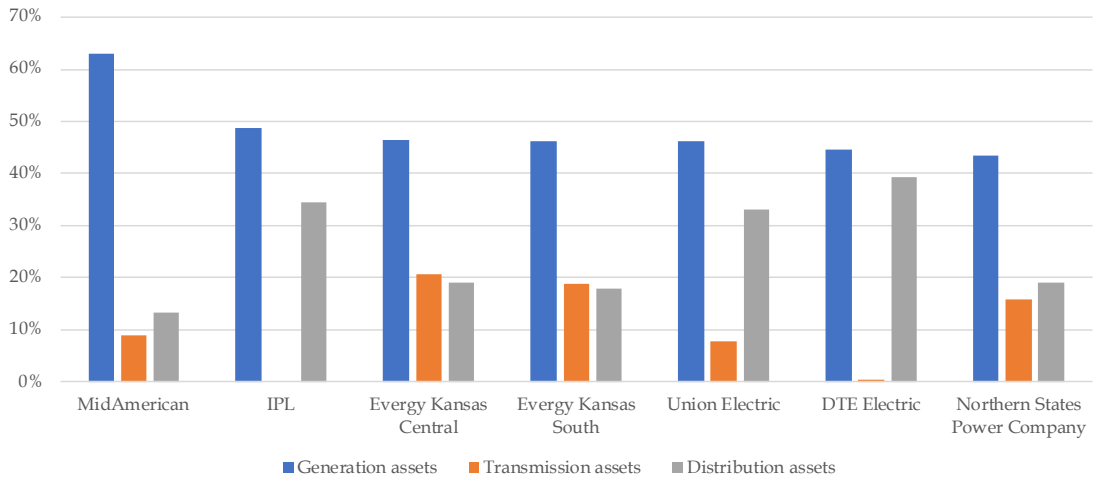
Source: S&P Global.

Transmission

One component of the rate structure for utilities is recovering the cost of transmission included from a utility providing electricity to its customers. This can be assessed by reviewing the percentage of transmission assets that constitute a utility's total assets. If a utility doesn't own its own transmission assets, then it is more than likely receiving a pass-through cost for transmission from another utility to include in its rates—losing control over how much it can charge for the cost of transmission. Per Figure 77, as of 2022 IPL and DTE Electric have 0% of their asset bases

invested in transmission assets, with both utilities having their transmission owned and operated by ITC Midwest. Both utilities see higher rates from the pass-through of transmission costs than the other utilities who own a higher percentage of transmission assets relative to their asset base. This increase can be seen in the NITS rates for the open access transmission tariff ("OATT") in MISO (see Figure 78). The NITS rates represent the rates set by an RTO (in this case, MISO) and charged to individual electric utilities for using the RTO's transmission service to serve its load customers. IPL and DTE Electric both have their transmission serviced by ITC Midwest, so they pay the same NITS rates to have ITC Midwest provide their transmission. This ownership from a separate transmission utility significantly increases the pass-through costs to customers for transmission relative to the other peer utilities that own their own transmission assets, as the transmission utility can increase their own infrastructure investments and pass those costs along to the utility for distribution to customers. This logic is present in the increased electric rates seen in Figure 72 for IPL and DTE Electric.

Figure 77. Electric asset classification by percentages (2022)



Source: S&P Global.

Figure 78. NITS rates for OATT (2022)

Utilities	NITS rates for OATT ($/kW-month)
IPL (ITC Midwest)	$11.032
MidAmerican	$2.839
DTE Electric Co. (ITC Midwest)	$11.032
Northern States Power Co. (MN)	$4.686
Union Electric Co.	$1.910
Northern States Power Co. (SD)	$4.686

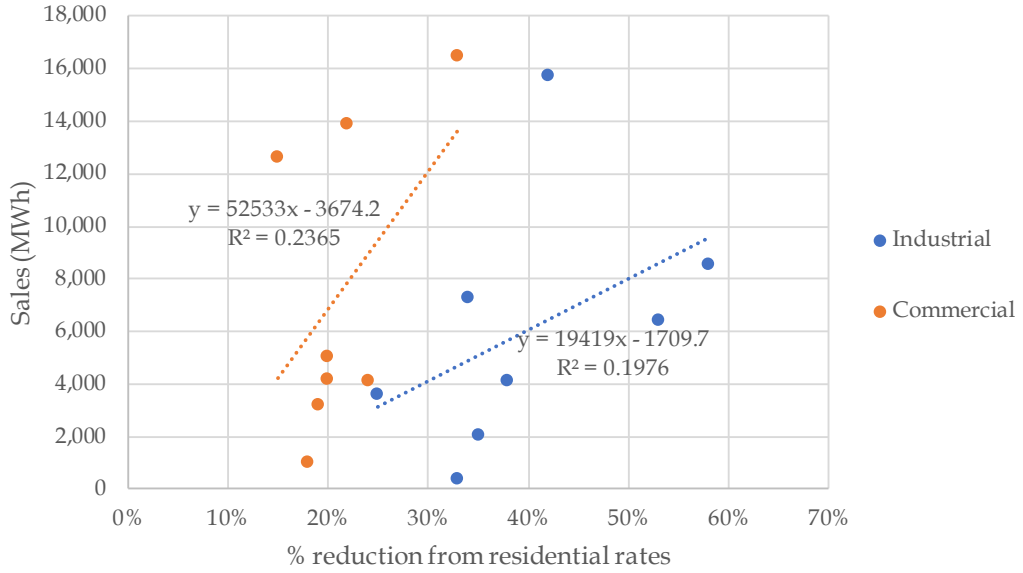
Source: MISO. *Transmission Owner Rate Data.* Web. Accessed November 29, 2023.

Customer class

Certain electric utilities may also have lower rates based on the customer class due to the increased sales seen for individual customer classes. To determine if this relationship exists, LEI looked at the difference between the electric residential rates and C&I rates for each Iowa and peer utility to see which utilities have large differences in customer class rates (see Figure 79). The '% of residential rate' was calculated by dividing the difference between the residential rates and C&I rates by the residential, yielding the percentage difference relative to the residential rate. This difference can be compared to the total MWh sales for each customer class to signify the impact of economies of scope on each utility—the higher the total sales per customer class, the higher the percentage reduction of C&I rates relative to residential rates. A positive correlation between the MWh sales and percentage reduction from residential rates for both C&I customers, indicating that utilities with increased C&I loads have lower rates for those customers relative to their residential rates—a result of economies of scope for each utility.

Figure 79. Commercial and industrial rates relative to residential rates (2022)

Utilities	Residential rate	Commercial rate	Commercial sales (MWh)	Residential - commercial	% of residential rate	Industrial rate	Industrial sales (MWh)	Residential - industrial	% of residential rate
IPL	$ 17.75	$ 13.46	4,082,352	$ 4.29	24%	$ 8.36	6,428,251	$ 9.39	53%
MidAmerican	$ 11.01	$ 8.77	5,001,796	$ 2.24	20%	$ 6.35	15,729,635	$ 4.65	42%
Evergy Kansas Central	$ 14.16	$ 11.34	4,175,294	$ 2.83	20%	$ 9.14	2,049,707	$ 5.02	35%
Evergy Kansas South	$ 12.99	$ 10.55	3,159,979	$ 2.44	19%	$ 9.77	3,608,580	$ 3.23	25%
DTE Electric Co.	$ 18.37	$ 12.24	16,500,656	$ 6.13	33%	$ 7.71	8,548,188	$ 10.66	58%
Northern States Power Co. (MN	$ 15.60	$ 13.26	12,638,135	$ 2.35	15%	$ 10.26	7,241,299	$ 5.34	34%
Union Electric Co.	$ 11.34	$ 8.90	13,868,142	$ 2.45	22%	$ 7.08	4,089,439	$ 4.26	38%
Northern States Power Co. (SD)	$ 13.23	$ 10.86	1,010,743	$ 2.36	18%	$ 8.85	380,262	$ 4.37	33%



Source: IUB, S&P Global, EIA.

A comparable analysis of the electric rates for the residential, commercial, and industrial sectors in Iowa and the peer utilities is provided in Appendix 7.

7.3.2 Iowa gas utilities have followed the industry trends and peer averages for rates

LEI compared the historical gas rates of IPL, MidAmerican, and Black Hills to the historical statewide average gas rates of the five peer states.[260] EIA provides each state's gas rate data as the average rate delivered to customers for all utilities in the state.

Overall, the gas industry experienced a steady rate decline from the period of 2008 to 2020,[261] as gas supply (production) in the US increased faster than demand. This trend is shown in Figure 80. Over the study period, there were several exogenous weather and macroeconomic events that impacted US gas markets, and specifically caused an increase in gas prices. Namely, each state experienced an increase in rates due to the energy demand disruptions caused by Winter Storm Uri in February 2021, natural gas prices rose as demand grew during economic recovery from the COVID-19 pandemic through 2021,[262] and gas prices trended upwards due to supply disruptions caused by the Russian-Ukraine war in 2022.[263] These events were the key drivers in the fuel price increase over the last two years, which in turn contributed to the increase in gas rates in Iowa and the peer states. The peak demand caused by Winter Storm Uri in February 2021 led utilities to incur significant supply costs associated with procuring required gas from the open market; regulators in the peer states and across the country allowed utilities to file for recovery of the costs incurred during this supply shortage.[264]

Comparing the Iowa gas rate-regulated utilities to the average gas rates in the peer states, Black Hills stands out as having the highest rates in both 2021 and 2022. Understanding that these rates are being compared against state averages and not individual utilities, it is still important to note that Black Hills has the highest average rates considering the peer states, IPL, and MidAmerican. MidAmerican has consistently low rates relative to the peer states over this period, while IPL follows the average from the peer states.

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[260] For the purposes of this study, Liberty Utilities did not provide historical rate information for LEI to review.

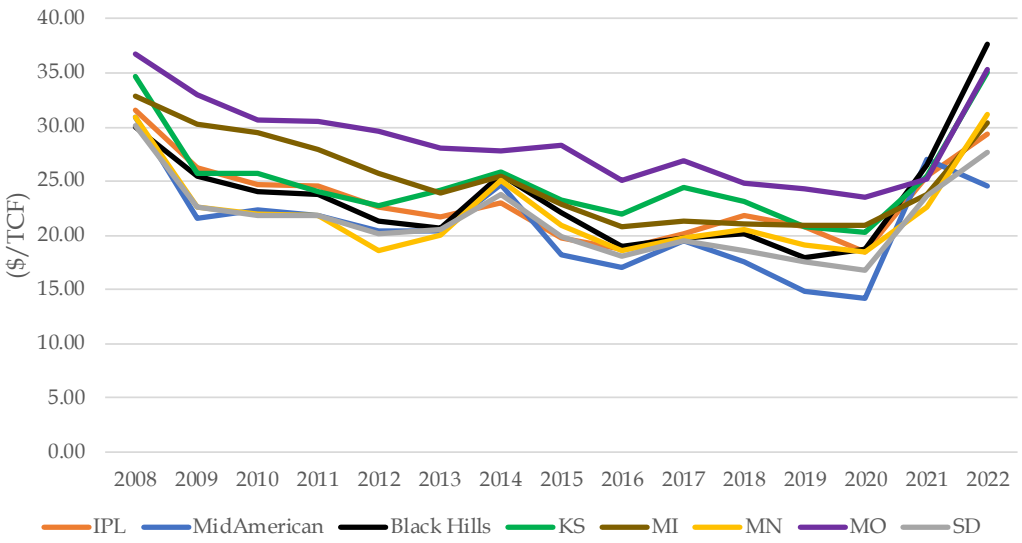
[261] The increased duration for the period reviewed for gas rates relative to electric rates is based on the information provided by the Iowa utilities as part of the October 3, 2023 data request from the IUB.

[262] EIA. *U.S. natural gas prices spiked in February 2021, then generally increased through October.* January 6, 2022.

[263] S&P Global. *How the Russia-Ukraine war is turning natural gas into the "new oil."* April 12, 2023.

[264] Kansas Corporate Commission. "Collection of deferred costs from the February 2021 winter storm." Web. August 22, 2023.

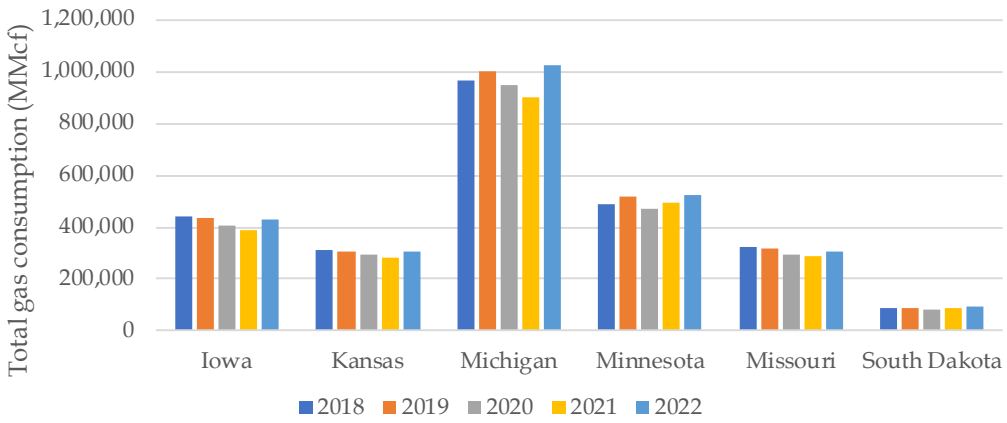
Figure 80. Total gas rates of Iowa and peer states (2008 – 2022)



Source: EIA, IUB.

To frame this analysis, Figure 81 shows total gas consumption of each state. It is clear that Michigan consumes a much larger amount of gas than Iowa and the other peer states. This aligns with the data shown in Figure 82—Michigan also has the largest number of customers in comparison to Iowa and the peer states. South Dakota, in contrast, has the lowest value for each of these metrics. There is no similar (linear) gas consumption and customer count trend that applies to the cases of Iowa, Kansas, Minnesota, and Missouri.

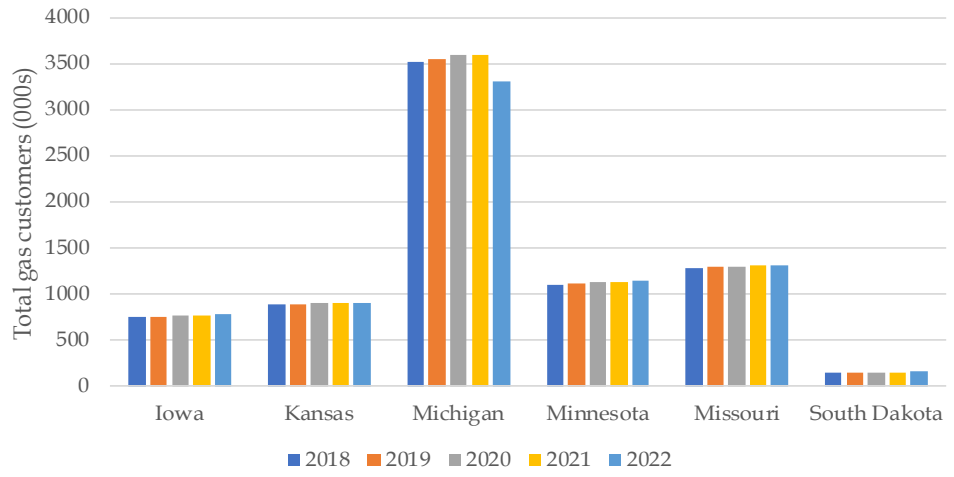
Figure 81. Total gas consumption of Iowa and peer states (2018 – 2022)



Source: EIA.

London Economics International LLC
717 Atlantic Avenue, Suite 1A
Boston, MA 02111
www.londoneconomics.com

Figure 82. Total gas customers in Iowa and peer states (2018 – 2022)

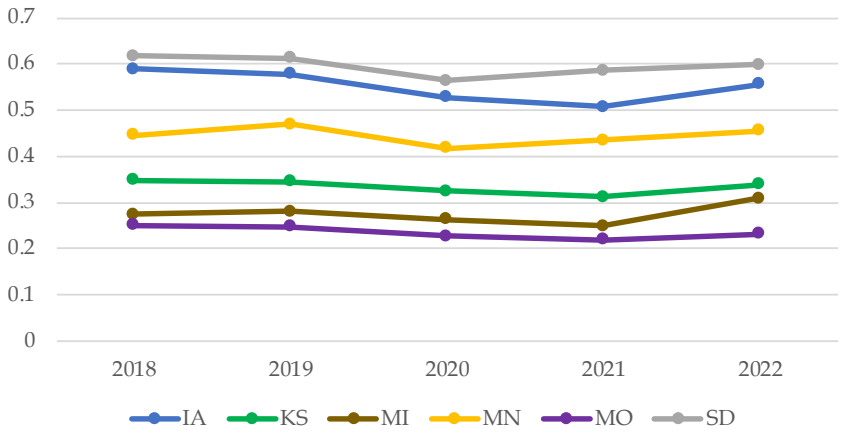


Source: S&P Global.

To analyze how this consumption and customer data affects rates, LEI calculated the ratio of consumption volume to consumers—meaning the total gas consumed per customer across all classes in each state. States with a higher consumption volume to consumer ratio benefit (in terms of gas rates) from the economies of scale associated with supplying higher volumes of gas to a constant customer base. Conversely, states with lower ratios—such as Kansas and Missouri—may not be able to benefit from such economies of scale, leading to higher rates overall. Iowa's gas rate-regulated utilities have below average rates among the peer states in part due to the infrastructure in place. Figure 83 shows the ratio of gas consumption per customer per state.

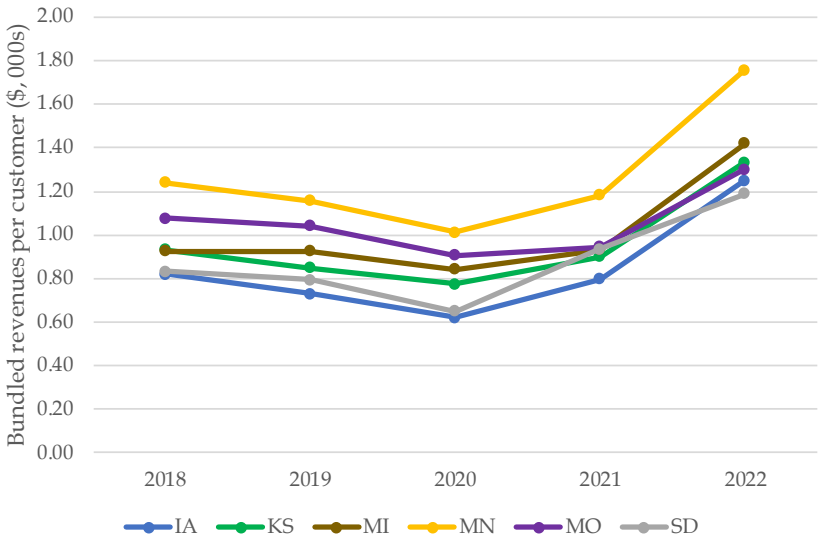
In comparison, Figure 84 shows a similar analysis of the total bundled revenues (or the total amount of revenues including production and distribution) per customer in Iowa and the five peer states. A higher amount of total bundled revenues per customer could indicate that a state's utilities are charging higher rates to recover more costs from customers. Minnesota has the highest total calculated bundled revenues per customer throughout this period, with total gas rates averaging on the low end relative to the other states, indicating that it could have higher commercial or industrial revenues that increase this total. Missouri follows this same logic with the second highest total revenues for customers from 2018 to 2021. Iowa consistently has a low total revenue per customer, which aligns with lower total rates resulting from the rate-regulated utilities not including excess costs in customer rates for recovery.

Figure 83. Ratio of total gas consumption to customers in Iowa and peer states (2018 – 2022)



Source: LEI analysis based on data from S&P Global.

Figure 84. Total gas bundled revenues per customer in Iowa and peer states (2018 – 2022)



Source: LEI analysis based on data from S&P Global.

It should also be noted that in addition to this data, the utilities in these peer states have numerous riders available for recovering costs from gas infrastructure investments and fuel sharing mechanisms. These cost recovery mechanisms are significant in terms of allowing these utilities to have higher rates relative to Iowa to capture additional costs and increase the revenues per customer. The riders available to gas utilities in Kansas, Michigan, Minnesota, and Missouri are outlined in Appendix 6. Reviews of the gas rates for the residential, commercial, and industrial sectors in these states are included in Appendix 8.

7.3.3 IAWC has higher rates than peer states due to its rate regulation and financial stability

For this section, LEI compared IAWC's rates to select water utilities in the five peer states. LEI identified WaterOne and Missouri-American Water Company ("MAWC") as comparable rate-regulated utilities to IAWC as they are the largest water providers in Kansas and Missouri, respectively. Water utilities are not regulated by the Commissions in Michigan, Minnesota, and South Dakota. Still, for comparative purposes, LEI examined three municipal utilities—the Great Lakes Water Authority of Michigan, the City of Minneapolis (Minnesota), and the City of Sioux Falls (South Dakota)—because these entities are the largest water utilities by customer count in their respective states.[265] These utilities also offer rates for a uniform classification of meter size, which allow LEI to examine the water rates of the utilities side-by-side.

Figure 85. Monthly charge by meter size for commercial and large residential customers (2022)

		Meter size (in inches)							
Water IOUs	**State**	**5/8"**	**3/4"**	**1"**	**1-1/2"**	**2"**	**3"**	**4"**	**6"**
Iowa-American Water Company	IA	$ 14.00	$ 21.00	$ 35.00	$ 70.00	$ 111.90	$ 209.90	$ 349.80	$ 699.60
WaterOne	KS	$ 16.20	$ 20.30	$ 28.70	$ 50.50	$ 74.00	$ 174.10	$ 272.00	$ 576.00
Great Lakes Water Authority	MI	$ 3.54	$ 5.31	$ 8.85	$ 19.47	$ 28.32	$ 51.33	$ 70.80	$ 106.20
City of Minneapolis	MN	$ 6.50	$ 9.75	$ 16.25	$ 32.50	$ 52.00	$ 104.00	$ 162.50	$ 325.00
Missouri-American Water Company	MO	$ 10.00	$ 13.61	$ 18.42	$ 30.47	$ 44.92	$ 79.00	$ 126.79	$ 247.19
City of Sioux Falls	SD	$ 12.92	$ 14.07	$ 15.56	$ 20.10	$ 24.92	$ 55.43	$ 90.08	$ 176.70

Sources: IAWC, WaterOne, Great Lakes Water Authority, City of Minneapolis, MAWC, City of Sioux Fall 2022 water rates.

LEI observes that the selected municipal-owned water systems, such as those in Michigan, Minnesota, and South Dakota, have lower water rates for all meter sizes compared to IAWC's rates. A study conducted by the World Water Council in 2022 observed that privately owned water systems in the US tend to have higher water rates and found that water systems owned by the private sector have a significantly higher annual bill ($501) than water systems owned by the public sector ($315).[266] As a result, low-income households spend a higher percentage of their incomes on water services when the utility is privately owned.[267]

This same study described an additional reason for this discrepancy, specifically that municipal systems may be financially limited when considering the infrastructure investments required to maintain safe and reliable water services. Private water companies such as IAWC have greater financial flexibility and freedom to invest in infrastructure to maintain water systems, which in turn requires increased rates to recover the costs fairly and reasonably.[268] This finding from the

[265] Official web pages of WaterOne, Great Lakes Water Authority, City of Minneapolis, City of Sioux Falls, and MAWC.

[266] Zhang et al. "Water pricing and affordability in the US: public vs. private ownership." *Water Policy (2022) 24 (3)*. World Water Council. March 17, 2022.

[267] Ibid.

[268] Ibid.

study aligns with what is currently seen in Iowa, particularly when considering the acquisition approval process for IAWC to acquire other municipal systems in order to make necessary investments in the water infrastructure throughout Iowa. Therefore, while rate-regulated utilities like IAWC have higher rates in Iowa and the peer states, it may be necessary when considering the required investments to provide quality services to customers in these states.

8 Assessment of rate-regulated utilities' performance relative to the policy objectives

Key findings

Electric Sector:

- **Affordability**: Disconnection notices have been on the rise, indicating growing difficulties in bill payments, with energy affordability comparable to peer states. Energy bills constitute a significant portion of income for low-income households.
- **Reliability**: IPL and MidAmerican showed improvements in SAIDI, SAIFI, and CAIDI from 2013 to 2022, moving towards more reliable service. MidAmerican's performance was steady, while IPL's was below average.
- **Safety**: The electric sector's safety record aligns with the average trend of peer states since 2018, despite some variability in non-fatal injury rates. Overall, it demonstrates commendable safety, supporting safe services for employees and customers.

Gas Sector:

- **Affordability**: The percentage of disconnections in the gas sector consistently stayed below 5%, lower than the electric sector, but the increasing trend is consistent across the industry.
- **Reliability**: Gas utilities faced distinct challenges, yet no major pipeline failures were reported in Iowa, showing high reliability compared to several failures in neighboring states.
- **Safety**: The gas sector in Iowa has not reported any major safety incidents, indicating effective safety management and compliance with standards.

Water Sector:

- **Affordability**: Post-2020, IAWC saw an increase in disconnection notices, suggesting affordability challenges. The Nicholas Institute's study finds Iowa's water bill hardship slightly above the peer average.
- **Reliability**: Iowa's water utilities had fewer violations than peer states, indicating a high standard of water system reliability.
- **Safety**: IAWC recorded no safety incidents from 2013 to 2022 and only one EPA violation, highlighting excellent safety standards. PFOS and PFOA levels were slightly higher than some peers but significantly below federal thresholds.

8.1 Electric industry

8.1.1 Iowa electric utilities show average to above-average reliability relative to the peer states

LEI used three metrics to measure the rate-regulated utilities' reliability in terms of the electric distribution sector. These metrics include the SAIDI, SAIFI, and CAIDI of each utility.[269] In the electric power industry, particularly as guided by the Institute of Electrical and Electronics Engineers, these metrics are considered the best overall measures of an electric utility's reliability.

In addition, 199 IAC 20.18 established requirements for assessing the reliability of the transmission and distribution systems for SAIDI and SAIFI.

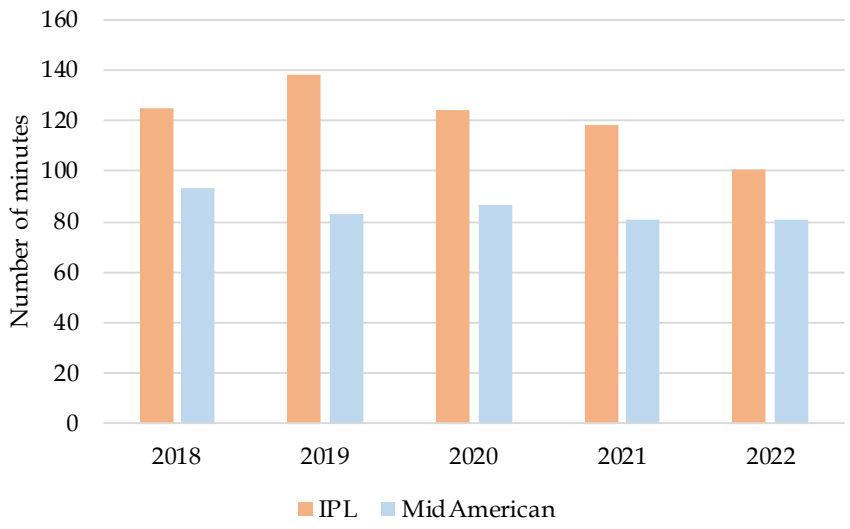
- **SAIDI** measures the average total number of minutes that a customer is without electricity per year, excluding momentary interruptions. SAIDI is also interpreted as the sum of the restoration time needed per interruption event, multiplied by the number of customers affected by each event, and divided by the total number of customers;

- **SAIFI** measures the average number of times that a customer has been interrupted from electric consumption in a year, excluding momentary interruptions. The SAIFI is calculated by considering the total number of customer interruptions divided by the total number of customers served; and

- **CAIDI** indicates the average duration of the interruption, measured in minutes, that a customer faces. The CAIDI is estimated by dividing the SAIDI (sum of customer interruption durations) by the SAIFI (sum of the number of customer interruptions).[270]

After an initial increase from 2018 to 2019, IPL demonstrated commendable progress in reducing its SAIDI. During the same period, MidAmerican showed a steady decline in SAIDI levels. Figure 86 shows IPL's and MidAmerican's SAIDI, excluding major interruptions.

Figure 86. IPL's and MidAmerican's SAIDI without major interruptions (number of minutes)



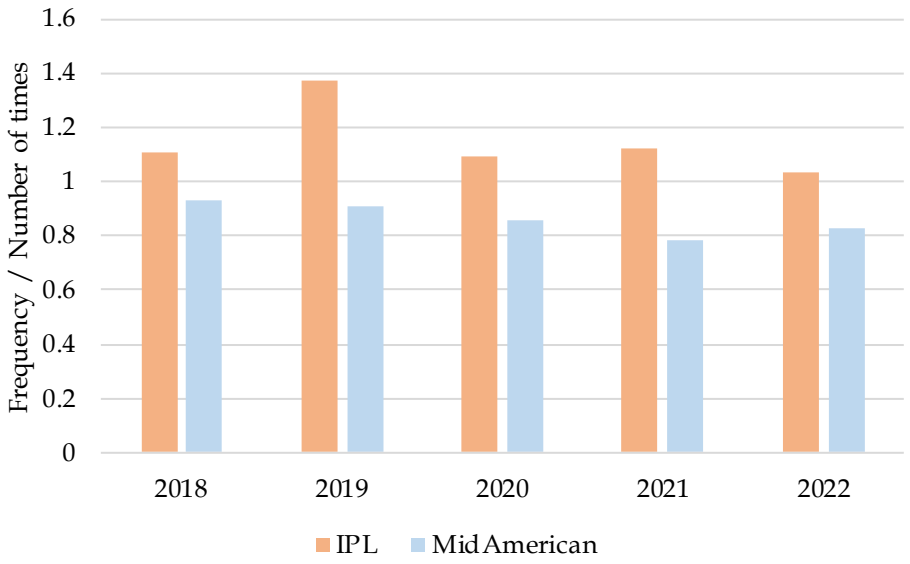
Sources: Form EIA 861, 2022 MidAmerican EDR Report in Docket No. EDR-2022-0156 and 2022 IPL EDR Report in Docket No. EDR-2022-0150.

[269] IEEE. *IEEE 1366 – Reliability Indices.* Web. October 17, 2023.

[270] HexStream. *SAIDI, CAIFI, & SAIFI: A Guide to Utility Reliability Metrics.* Web. Accessed October 25, 2023.

Over the span of 2018 to 2022, IPL's SAIFI showed an initial increase in 2019, followed by a subsequent decrease by 2022, indicating improved service reliability. In contrast, MidAmerican experienced a decline in SAIFI from 2018 to 2021, with a slight increase in 2022, reflecting a general trend of improved reliability with some recent variability. Figure 87 shows IPL's and MidAmerican's SAIFI, excluding major interruptions.

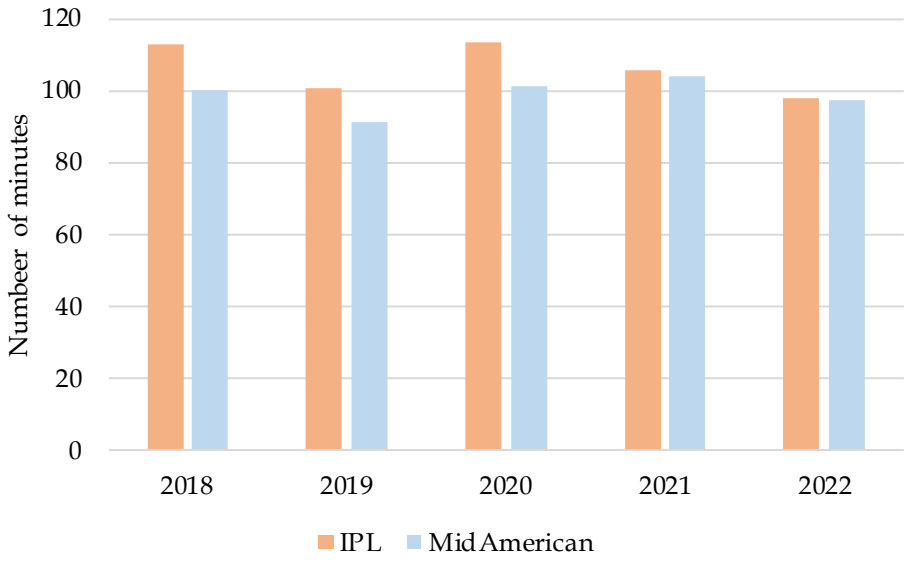
Figure 87. IPL's and MidAmerican's SAIFI without major interruptions (frequency)



Sources: Form EIA 861, 2022 MidAmerican EDR Report in Docket No. EDR-2022-0156 and 2022 IPL EDR Report in Docket No. EDR-2022-0150.

From 2018 to 2022, IPL's CAIDI decreased overall, despite a rise in 2020, indicating progress in reliability. Similarly, MidAmerican's CAIDI also showed overall improvement with some variability, experiencing a similar rise in 2020 but decreasing in the following years, suggesting a need for sustained strategies to maintain service consistency. Figure 88 shows the CAIDI of IPL and MidAmerican.

Figure 88. IPL's and MidAmerican's CAIDI without major interruptions (number of minutes)



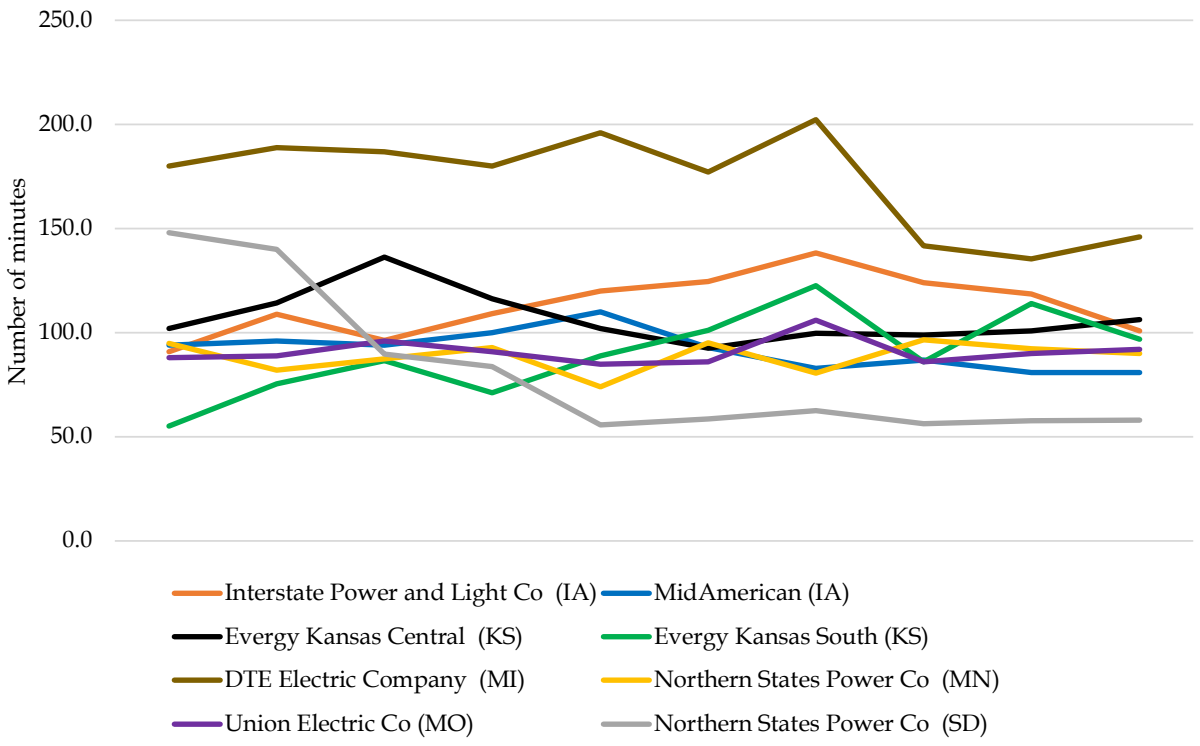
Sources: Form EIA 861, 2022 MidAmerican EDR Report in Docket No. EDR-2022-0156 and 2022 IPL EDR Report in Docket No. EDR-2022-0150.

In conclusion, IPL and MidAmerican displayed a consistent and stable improvement in reliability, with low and steady reductions in reliability indices. Overall, both utilities show a positive trend towards better service reliability, with MidAmerican's performance being particularly steady.

For a broader assessment, LEI compared the reliability metrics of IPL and MidAmerican with those of selected rate-regulated utilities of the peer states.

A downward shift over time indicates improvement in the reliability experienced by a utility's customers. Based on the data from the EIA, both MidAmerican and IPL exhibited a SAIDI close to the peer average. This indicates that when excluding major interruption events such as winter storms, the total number of minutes when IPL and MidAmerican customers experienced outages were close to average (see Figure 89). IPL averaged 113 minutes per year of outages from 2013 to 2022, while MidAmerican customers experienced shorter outages, averaging 91 minutes over the same timeframe. The 2013 to 2022 average of the eight utilities was 104.5 minutes and has been improving over time. IPL has been improving this metric since 2019, while MidAmerican has seen consistent improvement since 2017.

Figure 89. SAIDI of IPL, MidAmerican, and peer rate-regulated utilities (number of minutes)

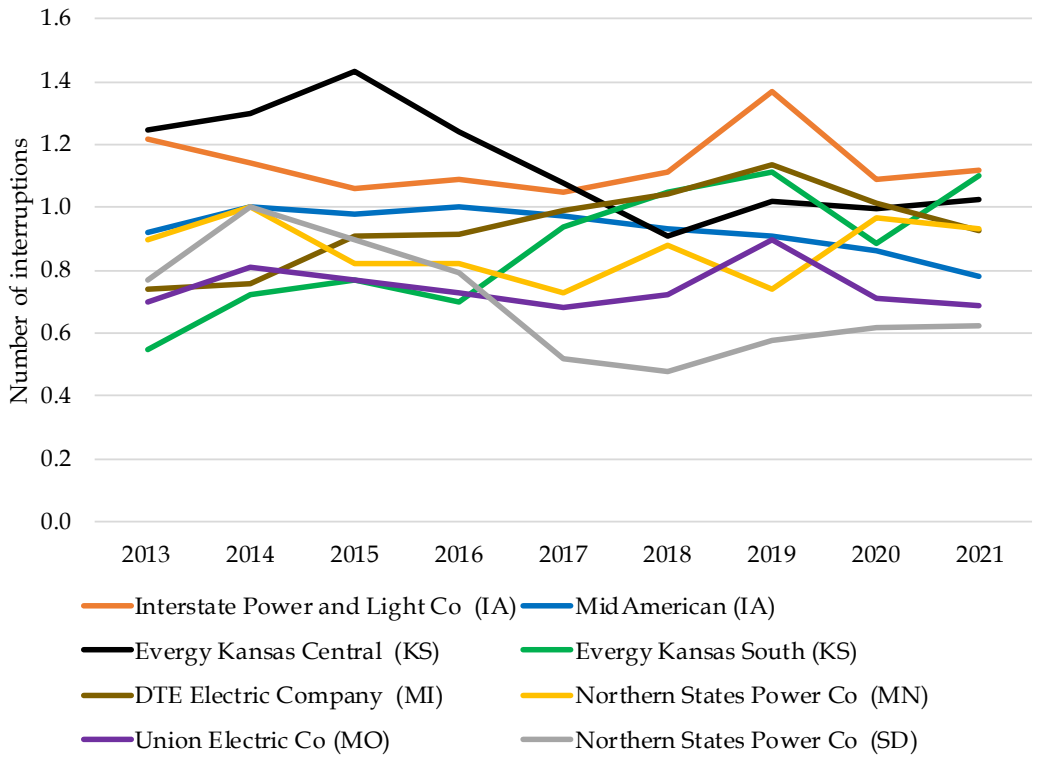


Source: EIA.

For SAIFI, the numbers of interruptions in a year for IPL and MidAmerican customers also trend around average, as seen in Figure 90. The average SAIFI for the rate-regulated utilities from 2013 to 2022 was 0.9 interruptions per year. IPL customers experienced on average 1.13 interruptions per year from 2013 to 2022, while MidAmerican customers experienced on average 0.9 interruptions per year. The SAIFI for both IPL and MidAmerican have been improving over the past ten years.

The CAIDI for MidAmerican and IPL are both below the peer average, as seen in Figure 91. A low CAIDI means that the average duration of power outages experienced by customers in Iowa is relatively short, which is a positive indicator of the utility's reliability and ability to respond to and address outages promptly. Excluding major interruptions events, IPL customers averaged 100.6 minutes of electricity interruptions per year from 2013 to 2022; MidAmerican customers averaged 100.1 minutes. The peer average was 115 minutes per interruption.

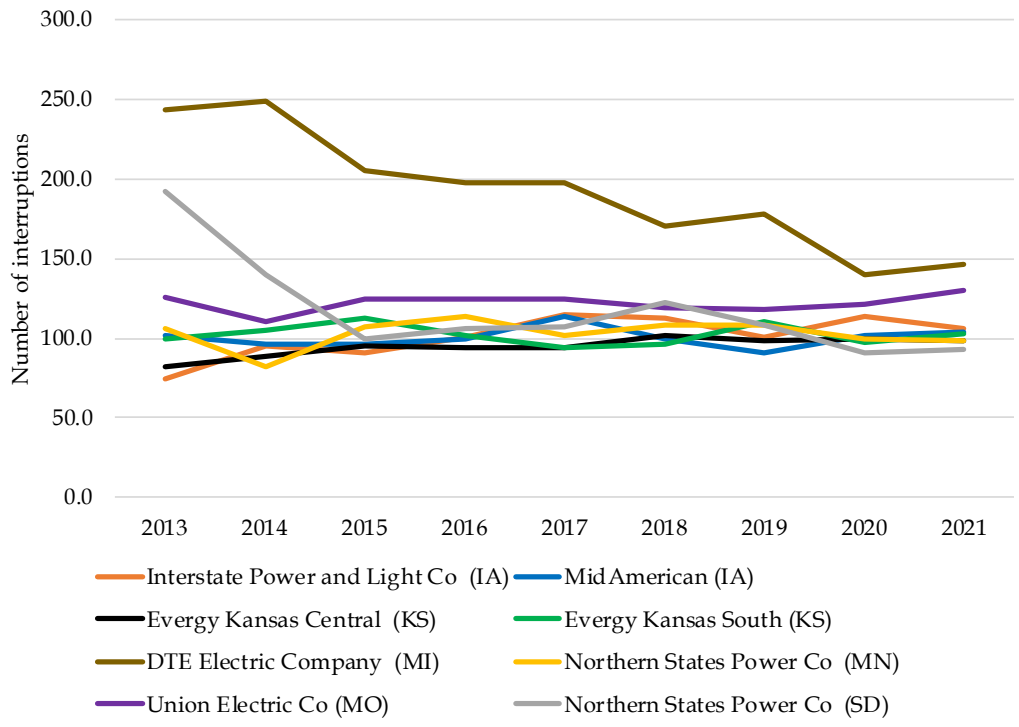
Figure 90. SAIFI of IPL, MidAmerican, and peer rate-regulated utilities (number of interruptions)



Source: EIA.

London Economics International LLC
717 Atlantic Avenue, Suite 1A
Boston, MA 02111
www.londoneconomics.com

Figure 91. CAIDI of IPL, MidAmerican, and peer rate-regulated utilities (number of minutes)



Source: EIA.

The review of these metrics for IPL and MidAmerican in rural and urban values can be found in Appendix 9.

8.1.2 Iowa electric affordability is worsening, but on par with industry trends

To assess electric affordability, LEI used four metrics to evaluate if energy bills (electric and gas) are affordable in Iowa which cover electric and gas utilities, namely:

(i) HEAG;

(ii) home energy burden for low-income households as a percentage of gross income;

(iii) average percentage of households facing unaffordable energy bills; and

(iv) NREL's Low-Income Energy Affordability Data ("LEAD") Tool.[271]

Furthermore, an assessment was conducted regarding the ratio of disconnection notices to the overall number of accounts. A rising trend in this metric indicates an increasing challenge for customers in paying their electric bills.

[271] National Renewable Energy Laboratory. *Low-income Energy Affordability Data Tool*. Web. Accessed October 18, 2023.

Home Energy Affordability Gap

The HEAG, which is based on a model designed by economic consultants Fisher, Sheehan & Colton in 2003, is a metric used to quantify the difference or 'gap' between economically 'affordable' and 'actual' home energy bills for low-income households.[272] The HEAG is a respected metric, cited by industry experts such as the American Council for an Energy-Efficient Economy ("ACEEE"),[273] the Oregon Energy Fund,[274] Office of the People's Counsel of the District of Columbia,[275] and the State of Oregon.[276] The HEAG is also used by state development authorities in New York interested in quantifying energy affordability within their districts.[277] The model was employed by the Coalition to Keep Indiana Warm to provide an analysis of home energy affordability.[278] The findings of the HEAG were compared to those of NREL's LEAD to verify the results.

The results of the HEAG can be used to track how affordable home energy bills are for low-income residents over time in Iowa. The lower the gap, the closer 'actual' energy bills are to 'affordable' bills for ratepayers.

An 'affordable burden' for energy is considered to be 6% of gross household income, with an additional 2% for heating and cooling.[279] Home energy bills are calculated on a county level as a function of home type, household size, heating fuel mix, heating and cooling degree days, energy use intensity, and fuel prices by type based on the time of year. The model uses the American Community Survey as the source of demographic information and aggregates the county-level gaps for each state based on income brackets. Henceforth, the model considers any household earning at or below 200% of the Federal Poverty Level ("FPL") as 'low-income'.[280]

The FPL is the income level, below which, a household is deemed to be in poverty as recorded by the US Department of Health and Human Services. The FPL is adjusted annually for inflation by

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[272] Fisher, Sheehan, and Colton. *Home Energy Affordability Gap*. Web. Accessed November 6, 2023.

[273] ACEEE. *Understanding Energy Affordability.* Web. September 9, 2019.

[274] Oregon Energy Fund. *New Data Shines a Light on Oregon's Energy Burden*. Web. March 26, 2019.

[275] Apprise Incorporated. *Energy Affordability Study Survey Programs – In-Depth Analysis*. Web. December 2020.

[276] State of Oregon. *Low Income Utility Program Working Group Report*. December 2018. Web.

[277] Colton, R. D. *Home Energy Affordability in New York.* New York State Energy Research Development Authority. Web. 2012.

[278] Colton, R. D. *Home Energy Affordability in Indiana.* Belmont, Massachusetts. 2009.

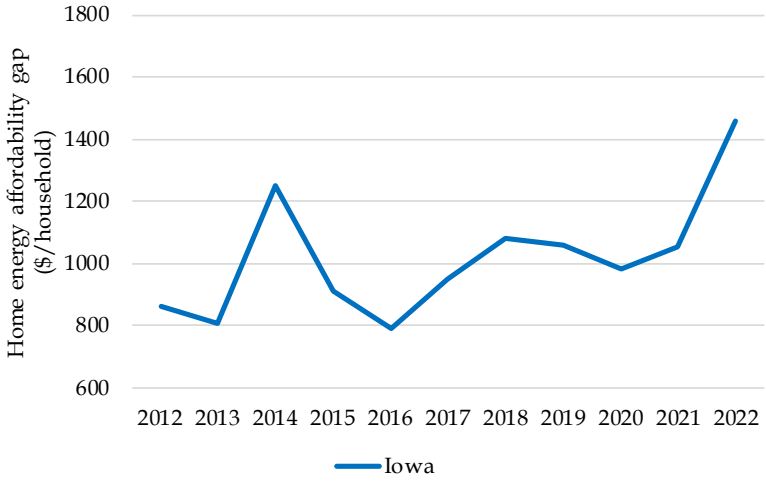
[279] Note the model does not consider state financial resources for energy bill assistance or utility-specific rate discounts.

[280] Note the methodology changed significantly between HEAG analysis done before and after 2011. Including changing the definition of low-income from less than 185% of the FPL to less than 200% of the FPL. Only dates after 2011 can be compared meaningfully.

the Census Bureau and depends on the size of the family. For 2022, the FPL was set at a modified adjusted gross income of $13,590 for individuals, increasing incrementally to $46,630 for a family of eight.[281] This income includes all forms of income such as earnings, unemployment compensation, social security payments and public assistance.

The HEAG data indicates a general upward trend in Iowa's HEAG over the decade, with some notable year-to-year changes. Figure 92 shows the HEAG, which quantifies the average difference between an 'affordable' energy burden and the 'actual' energy burden determined by county-level home energy usage estimates. After the lowest recorded gap in 2016, a general increase is observed, culminating in a sharp spike of 38.8% in 2022, suggesting an upward trend in energy cost burdens for low-income households, defined in the model as those earning at or below 200% of the FPL. The widening gap between the 'affordable' and 'actual' energy costs indicates that residents, categorized as low-income, are facing increasing financial pressures due to rising energy expenses.

Figure 92. Home Energy Affordability Gap in Iowa ($/household)



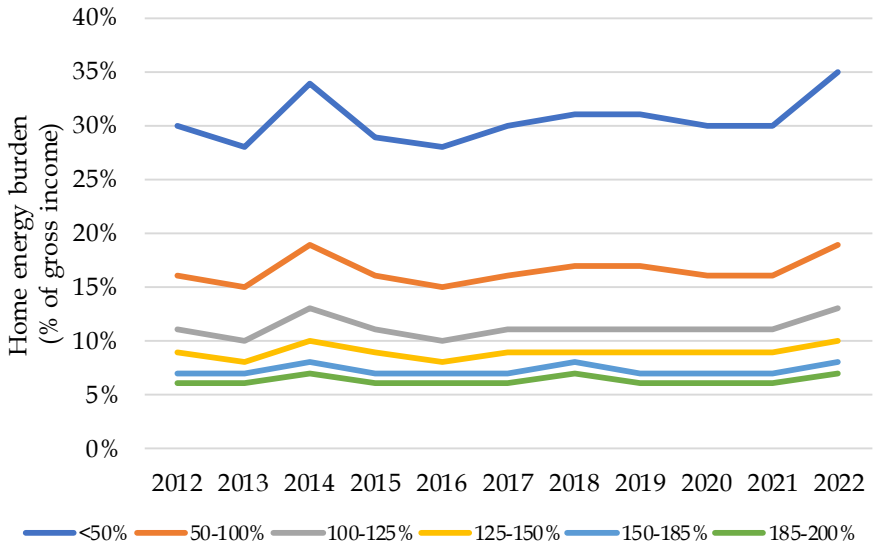
Source: Fisher, Sheehan, and Colton. *Home Energy Affordability Gap.* Web. Accessed November 6, 2023.

Home energy burden for low-income households as a percentage of gross income

Despite fluctuations in economic conditions and energy prices, the energy burden for low-income households has not seen significant variation throughout this period. The most substantial burden has been consistently shouldered by households earning less than 50% of the FPL, which spend as much as 35% of their gross income to pay energy bills, as shown in Figure 93.

[281] Health Insurance. *What is the federal poverty level (FPL)?* Web. Accessed November 15, 2023.

Figure 93. Iowa home energy burden of low-income households (% of gross income)



Note: The chart illustrates the percent of gross income spent on energy by households at varying levels of the FPL, with each group represented by distinct colors.

Source: Fisher, Sheehan, and Colton. *Home Energy Affordability Gap.* Web. Accessed November 6, 2023.

Model comparison between the HEAG and NREL's LEAD Tool

The findings of the HEAG reports were compared to a similar model created by NREL, the LEAD Tool. The LEAD tool is an open-source, interactive tool that models the home energy burden for low-income households. While the methodology varies, the data sources between the two models are similar.

Variance between the two models is derived from their distinct methodologies. The HEAG model calculates energy burdens using brackets of households with incomes between 0% and 200% of the FPL. It considers any household earning at or below this threshold as 'low-income'. In contrast, for the purposes of this analysis, the threshold for 'low income' in the NREL model has been set at 60% of the state-specific average median income ("AMI"). This is because setting the threshold at 60% of the AMI aligns more closely with 200% of the FPL, ensuring a more accurate representation of low-income energy burdens.[282]

Incorporating these findings into the broader discourse reveals that while Iowa's energy burden stabilizes for the general population, a stark disparity emerges for households living below 50% of the FPL. These households are facing an increasing energy cost burden, an issue that is exacerbated by the widening HEAG, as depicted in Figure 93. While focusing on the most

[282] Note the 200% of the FPL for individuals in 2022 was $27,180, while 60% AMI threshold for non-family households was $24,924 in Iowa. Web. Accessed November 14, 2023.

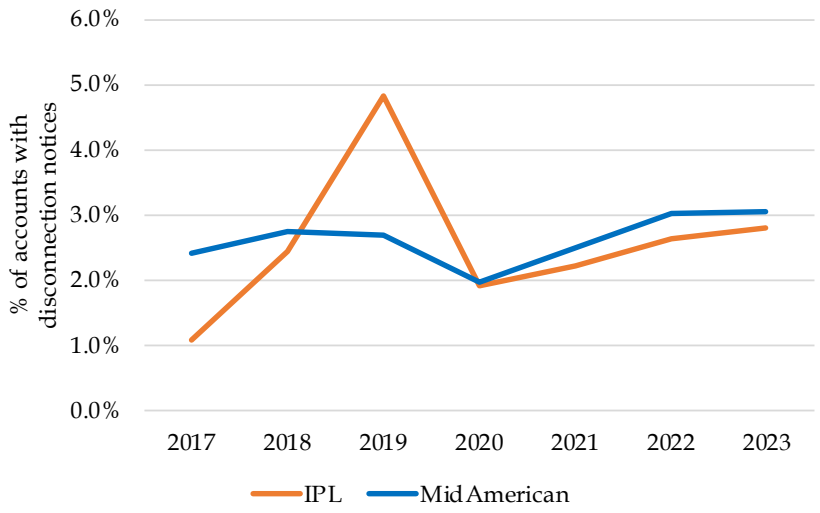
vulnerable is essential, overall stability suggests that most Iowans have not seen significant variation in their energy burden.

Finally, in comparison with the peer states examined in Section 7, Iowa's affordability, as reflected by the average financial burden on low-income households, is comparable to that of other states.

Percentage of disconnections to number of total accounts

IPL presents a dynamic trend in its percentage of electric disconnections relative to the total number of accounts (see Figure 94). Starting with a rate of 1.1% in 2017, there was a significant rise, peaking at 4.8% in 2019. This peak was succeeded by a downturn in 2020, marking a figure of 1.9%. After this decline, the years 2021 to 2023 saw a gradual ascent, with the percentage reaching 2.8% in 2023. In contrast, MidAmerican demonstrated consistent figures over the years. The percentage of accounts with disconnection notices varied slightly, ranging from 2.4% to 3.0% between 2017 and 2023. It is important to underline that from 2020 to 2023, there was a steady rise in MidAmerican's rate from 2.0% to 3.0%. In summary, while the patterns vary amongst the utilities, a general trend of rising disconnection notices is evident in the period analyzed.

Figure 94. Percentage of residential disconnection notices relative to the total number of accounts of electric rate-regulated utilities (%)

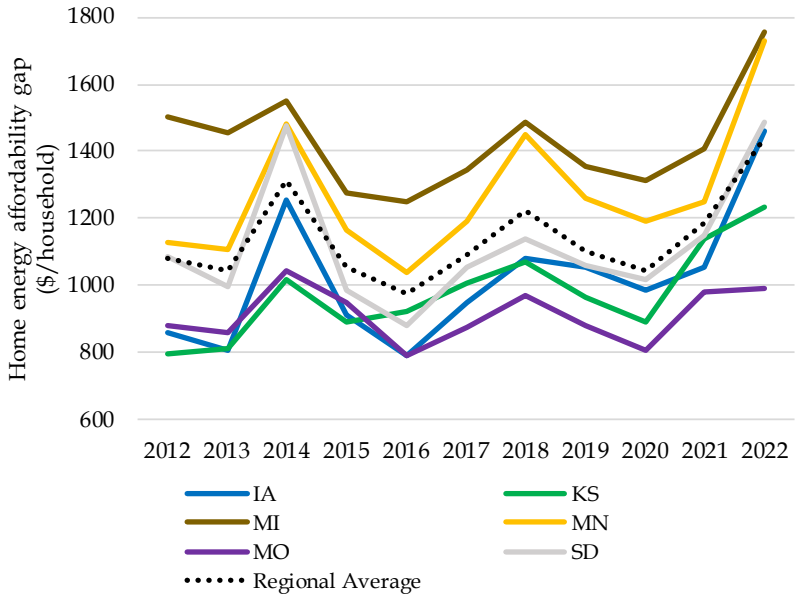


Source: IUB. *Residential Past Due Accounts and Disconnection Data.* Web. Accessed October 24, 2023.

To broaden its analysis, LEI compared Iowa's HEAG with those of neighboring states to assess the affordability of home energy bills for low-income residents in Iowa.

According to Figure 95, Michigan has the highest energy bills and the largest affordability gap, causing notable distortion in the group average. Iowa's affordability gap has followed similar trends to the peer average but remained lower than the peer average for all years examined except 2022. The findings of the HEAG were compared to those of NREL's LEAD to verify the results.

Figure 95. Energy affordability gap by state ($/household)



Source: Fisher, Sheehan, and Colton. *Home Energy Affordability Gap*. Web. Accessed November 6, 2023.

The two tables in Figure 96 show how much of a household's annual income is used to pay home energy bills, and specifically the households earning at or below 50% to 100% of the FPL and 100% to 125% of the FPL, respectively.[283] These results show that energy bills constitute a smaller portion of annual income for low-income households in Iowa compared to Michigan and Minnesota. On the other hand, energy bills are a greater financial burden to low-income households in Iowa than they are in Kansas, Missouri, and South Dakota. This indicates that the financial burden of energy bills on low-income households in Iowa is around average compared to the peer states; nevertheless, this topic is worthy of additional analysis, specifically to determine what processes are in place in peer states with a lower energy burden compared to Iowa to provide more affordable utility services.

[283] Fisher, Sheehan, and Colton. *Home Energy Affordability Gap*. Web. Accessed November 6, 2023.

Figure 96. HEAG of Iowa and the peer states (%)

Home energy burden for households at 50 - 100% of the federal poverty level	2015	2016	2017	2018	2019	2020	2021	2022
Iowa	16%	15%	16%	17%	17%	16%	16%	19%
Kansas	16%	16%	16%	17%	16%	16%	16%	17%
Michigan	18%	18%	18%	19%	18%	18%	19%	20%
Minnesota	18%	17%	18%	19%	18%	17%	19%	20%
Missouri	16%	15%	15%	16%	15%	15%	15%	15%
South Dakota	16%	16%	17%	17%	16%	16%	18%	19%

Home energy burden for households at 100 - 125% of the federal poverty level	2015	2016	2017	2018	2019	2020	2021	2022
Iowa	11%	10%	11%	11%	11%	11%	12%	13%
Kansas	11%	11%	11%	11%	11%	11%	11%	11%
Michigan	12%	12%	12%	13%	12%	12%	13%	14%
Minnesota	12%	11%	12%	13%	12%	12%	13%	14%
Missouri	11%	10%	10%	11%	10%	10%	11%	10%
South Dakota	11%	10%	11%	11%	11%	11%	11%	12%

Source: Fisher, Sheehan, and Colton. *Home Energy Affordability Gap.* Web. Accessed November 6, 2023.

In conclusion, Iowa's energy affordability is comparable to that of its neighboring states. Throughout the period studied, Iowa has generally placed in the middle of the pack in terms of energy affordability compared to the other five states—but being placed in the middle of the pack implies potential room for improvement.

8.1.3 Safety has fluctuated across electric utilities but has followed industry trends

In assessing the safety of utility services, LEI reviewed state-specific non-fatal[284] and fatal[285] occupational injury and illness data from the US BLS that looks at the utility services[286] sector (which includes electric and gas) by state.[287]

In Iowa's utility services sector, non-fatal occupational injury and illness rates have seen fluctuations from 2017 to 2021, with a notable decrease in 2020 but an uptick again in 2021 (see Figure 97). Between 2017 and 2021, there were fewer than five incidents per year, indicating a commendable track record. On the other hand, fatal injury rates within the combined transportation and utilities sectors demonstrated a steady decrease over the years, culminating in a significant reduction in 2021. This consistent decline indicates a positive trend toward enhanced safety protocols. The decline in fatal injuries is also promising.

In summary, the electric rates appear to support safe services for the rate-regulated utilities' employees as well as customers when looking at the non-fatal and fatal incidence rates from the US BLS. Comparing Iowa to its peer states, Iowa's safety record falls within the middle range and has generally followed the average trend since 2018.

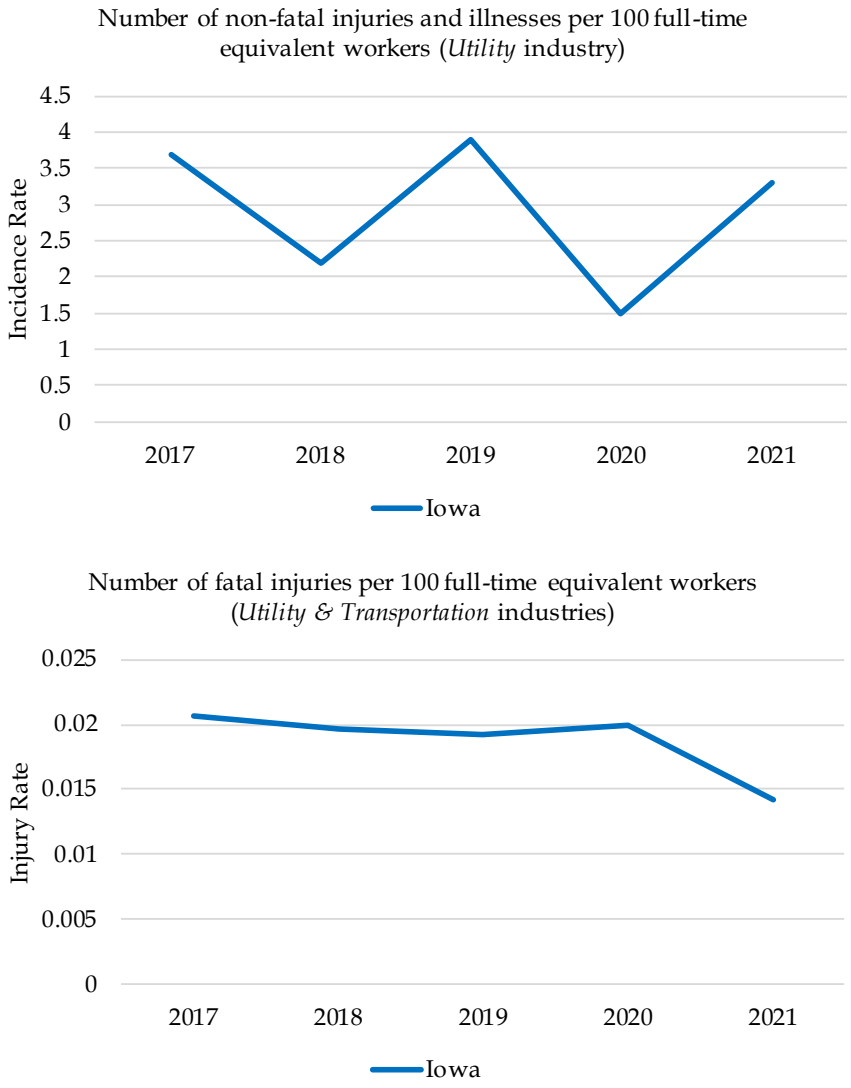
[284] Non-fatal instances of work-related injuries and illnesses were sourced from records maintained by employers in compliance with the Occupational Safety and Health Administration guidelines, available through the BLS Survey of Occupational Injuries and Illnesses for participating States and Territories.

[285] Statistics on fatal work-related injuries are obtained from the BLS Census of Fatal Occupational Injuries, which covers all States, Territories, and even specific regions like New York City.

[286] The US Bureau of Labor Statistics defines a "utility" as an establishment engaged in the provision of electric power, natural gas, steam supply, water supply, and sewage removal.

[287] Workers under the age of 16 years, volunteer workers, and members of the resident military are not included in rate calculations to maintain consistency with the Current Population Survey and Local Area Unemployment Statistics employment.

Figure 97. Non-fatal and fatal occupational injuries and illness incidence rates in Iowa (%)

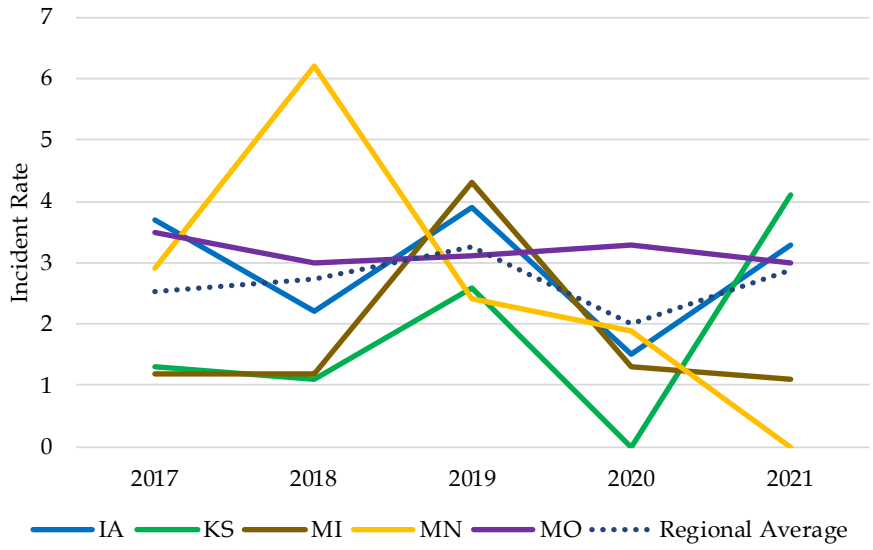


Note: The data from US BLS for these two metrics is tracked based on NAICS industry. For non-fatal injuries and illnesses, the *utility* industry is tracked individually. For fatal injuries, the US BLS tracks the *utility* and *transportation* industries together.

Sources: US BLS, Current Population Survey, Local Area Unemployment Statistics, Census of Fatal Occupational Injuries.

Figure 98 below shows the comparison of non-fatal incident rate in Iowa with that of its peer states. This analysis follows a review of state-specific non-fatal occupational injury and illness data from the US BLS. While the peer average for non-fatal injuries has been relatively stable, Iowa's incident rates have varied, sometimes falling below the average. This trend suggests that while there may be periods of improved safety in Iowa, there are still challenges to be addressed. The absence of data from states like South Dakota could potentially influence the peer average.

Figure 98. Non-fatal occupational injuries and illness incident rate (utility industry, per 100 full-time equivalent workers)



Note: Data for South Dakota is not available.

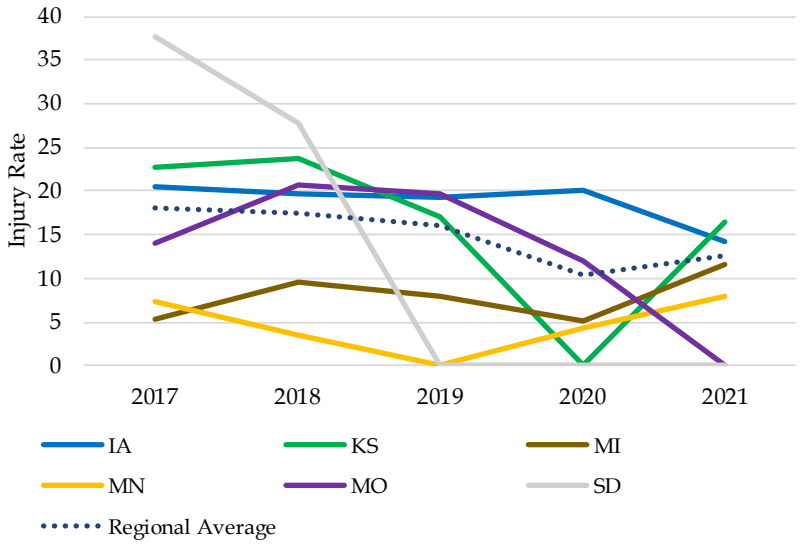
Source: US Bureau of Labor Statistics, US Department of State.

Fatal injury rates in Iowa have remained consistent from the period of 2017 to 2020, as seen in Figure 99. Starting slightly above the peer average, Iowa displayed a gradual decline in these rates over this period, followed by a decrease in 2021 where the rate dropped closer to the peer average of 12.5 injuries per 100 workers. This suggests an improvement over time regarding safety in the transportation and utility industry[288] in Iowa.

Despite this progress, it is essential to note that Iowa's incident and injury rates were consistently higher than the peer average up until 2020, highlighting potential operational safety challenges in those years. The missing data from states like South Dakota might influence the average of the peer states.

[288] For this metric, the US BLS does not separate the utility and transportation industries.

Figure 99. Fatal occupational injury rate (transportation and utility industries, per 100,000 full-time equivalent workers)



Note: Data either did not meet the publication criteria or were not reported for the following states and years: South Dakota (2019-2021), Kansas (2020), Minnesota (2019), and Missouri (2021).

This figure encompasses both the transportation and utilities industries, as opposed to the previous table which was solely for the utilities industry. For this metric, the US BLS does not separate the utilities industry.

Sources: US Bureau of Labor Statistics, Current Population Survey, Local Area Unemployment Statistics, Census of Fatal Occupational Injuries.

Frequency of Safety Violations

LEI also examined data from the IUB Annual Report to observe trends concerning safety violations and accidents for electric utilities.[289] This examination is integral to understanding the broader context of safety within the state's electric sector and complements the findings from the US BLS data on non-fatal and fatal occupational injuries. Violations refer to instances where transmission line operators fail to comply with specific safety standards, including adherence to safety code compliance for electrical lines and facilities and following required inspection and maintenance plans as outlined by the IUB.

Probable safety rule violations showed an initial increase from 2018 to 2019, followed by a significant decrease in 2020, likely impacted by the COVID-19 pandemic and associated reductions in operations. However, the uptick in violations in 2021 suggests that the previous year's decline may have been a temporary result rather than a lasting improvement. Likewise, contact accidents within the electric sector decreased in 2020, but rebounded in 2021, paralleling the trend in safety rule violations and indicating fluctuating safety outcomes. Figure 100 displays

[289] IUB. *Annual Reports* (2017-2021). Web.

the number of probable violations and accidents associated with electric utilities in Iowa from 2017 to 2021.[290]

Figure 100. Frequency of electric safety violations and accidents

Year	Electric: Probable violations of safety rules	Electric: Contact accidents
2017	N/A	15
2018	164	5
2019	167	15
2020	83	5
2021	149	19

Source: IUB. *Annual Reports* (2017-2021).

In summary, from 2017 to 2021, the electric sector in Iowa experienced fluctuations in both probable safety rule violations and contact accidents. While the number of probable violations of safety rules in 2021 did not surpass those of 2019, contact accidents overall increased, reaching their peak in 2021.

8.2 Gas industry

8.2.1 Iowa gas utilities rate highly for reliability relative to the peer states

To determine if rates have supported reliable services, LEI looked at the frequency of gas service interruptions based on the self-reported incidents by the rate-regulated utilities to IUB.[291] The more service interruption incidents, the more unreliable the service is.

Based on the data submitted by MidAmerican, the most significant issue is the number of incidents where the interruption of gas was to more than 50 customers, with a total of 45 such incidents reported over ten years (or 4.5 incidents per year). IPL has fewer incidents of gas interruptions to more than 50 customers, with 19 in the past ten years—this metric may be impacted by the reduced number of customers IPL has compared to MidAmerican. The rate-regulated utility has faced unique incidents, such as home explosions and the need for corrective actions due to mapping system inaccuracies. Although there are fewer instances in total occurrence, these instances highlight critical areas where safety and operational standards require ongoing attention to ensure reliability. As for Black Hills, the incident reports depict different challenges, mainly related to the unintentional release of gas due to factors like over-pressurization and external forces, each with three reported incidents.

[290] Ibid.

[291] IUB. *Electronic Filing System. Docket Type: H – Accident – Outages*. Web. Accessed November 6, 2023.

Figure 101. Types of gas service interruptions and frequency - MidAmerican

Year Incidents/Events	Frequency of Incidents/Events										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
1) Interruption of gas to more than 50 customers	8	5	3	5	2	3	9	4	2	4	45
2) Property damage of $15,000 or more including cost of lost gas	1					1		1	1	2	6
3) System pressure exceeded maximum allowable operating pressure	3	2		2		2					9
4) Gas Leak			1								1
5) Contractor striking service line			1								1

Source: LEI's analysis using IUB's Electronic Filing System data. Docket Type: H – Accident—Outages.

Figure 102. Types of gas service interruptions and frequency - IPL

Year Incidents/Events	Frequency of Incidents/Events										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
1) Interruption of gas to more than 50 customers	4	1		4	2	5		2		1	19
2) Interruption of gas to more than 50 customers - Natural Forces						2		1			3
3) Home explosion and fire										1	1
4) Home explosion and fire - Employee error in testing service line									1		1
5) Unintentional release of gas								1			1
6) Unintentional release of gas - Damages over $50,000	1						1				2
7) System pressure exceeded maximum allowable operating pressure							2				2
8) Removal of line from IPL mapping system leading to missed leakage and corrosion surveys						1					1

Source: LEI's analysis using IUB's Electronic Filing System data. Docket Type: H – Accident—Outages.

Figure 103. Types of gas service interruptions and frequency – Black Hills

Year Incidents/Events	Frequency of Incidents/Events										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	TOTAL
1) Unintentional Release of Gas - Failure of Pipe or Weld										1	1
2) Unintentional Release of Gas - Malfunction of Control/Relief Equipment										1	1
3) Unintentional Release of Gas - Customer usage dramatically changed causing relief valve to release gas									2		2
4) Unintentional Release of Gas - Overpressurization									3		3
5) Unintentional Release of Gas - Outside Force									3		3
6) Unintentional Release of Gas - Excavation by Operator			1				1				2
7) Unintentional Release of Gas - Excavation by Third Party								1			1
8) Delay from control room in sending emergency shutdown notification									1		1
9) System pressure exceeded maximum allowable operating pressure - No reported leak		1							1	1	3
10) Interruption of service to over 50 customers - Natural Forces	1			2							3

Source: LEI's analysis using IUB's Electronic Filing System data. Docket Type: H – Accident—Outages.

In summary, while distinct challenges are apparent for each rate-regulated gas utility, the overall trend does not suggest a systemic rise in incidents for any single rate-regulated utility. However, the data highlights areas where improvements are necessary to address vulnerabilities specific to each utility. It emphasizes the need for sustained investment in system maintenance, safety protocols, and emergency preparedness to uphold and enhance the reliability of gas services across Iowa.

The analysis of service interruption incidents provides insights into the operational reliability challenges faced by Iowa's rate-regulated utilities. Moving forward, LEI extended its analysis beyond local utility reports to encompass broader regulatory oversight. By examining pipeline failure investigation reports from PHMSA, LEI aimed to further validate the reliability of natural gas services in Iowa, comparing it with the records of pipeline incidents in neighboring states.

Pipeline failure is defined by PHMSA as an incident for which the operator must make a report to the Office of Pipeline Safety due to corrosion (external or internal), stress corrosion cracking, selective seam corrosion, excavation damage, natural force damage, other outside force damage, material or weld failure, equipment failure, or incorrect operation.[292]

PHMSA operates as an agency under the US Department of Transportation, tasked with developing and enforcing regulations to ensure the safe, reliable, and environmentally sound transportation of energy and other hazardous materials. As part of its mission, PHMSA publishes reports as part of its Pipeline Safety Awareness and Outreach program and has data of pipeline failures in the country going back to 2003. Based on this data, there is no documented pipeline failure in Iowa, which indicates that natural gas utilities in Iowa offer safe services.[293]

In contrast, PHMSA documents one pipeline failure in Missouri (Panhandle Eastern Pipeline Company), six in Minnesota (Enbridge Energy LP, Northern Natural Gas Co., and Magellan Pipeline Company, LP), one in South Dakota (TC Oil Pipeline Operations, Inc.), and five in Kansas (Southern Star Central Gas Pipeline, Jayhawk Pipeline, and Magellan Pipeline Company, LP).[294]

In summary, the review of pipeline failure investigation reports from PHMSA highlights the reliability and safety of natural gas services provided by the rate-regulated utilities in Iowa compared to neighboring states.

8.2.2 Iowa is average regarding affordability of rate-regulated gas utilities compared to the peer states

In addition to the HEAG analysis discussed in Section 8.1.2, LEI examined the proportion of disconnection notices in relation to the total number of accounts for rate-regulated utilities to indicate the affordability of gas rates. Over the past five years, the percentage of total customers receiving disconnection notices across the three rate-regulated utilities has consistently remained below 5%, which is lower than the corresponding figure in the electricity sector. In 2020, there was a significant decrease, primarily attributed to the pandemic-related moratorium. However, starting in 2021, with the conclusion of the moratorium, there has been a noticeable upward trend in the number of disconnections relative to the total accounts, indicating that gas rates might have become more unaffordable to an increased number of customers recently compared to previous years. Nevertheless, this situation is not unique to Iowa as this trend can also be seen in some of the peer states.

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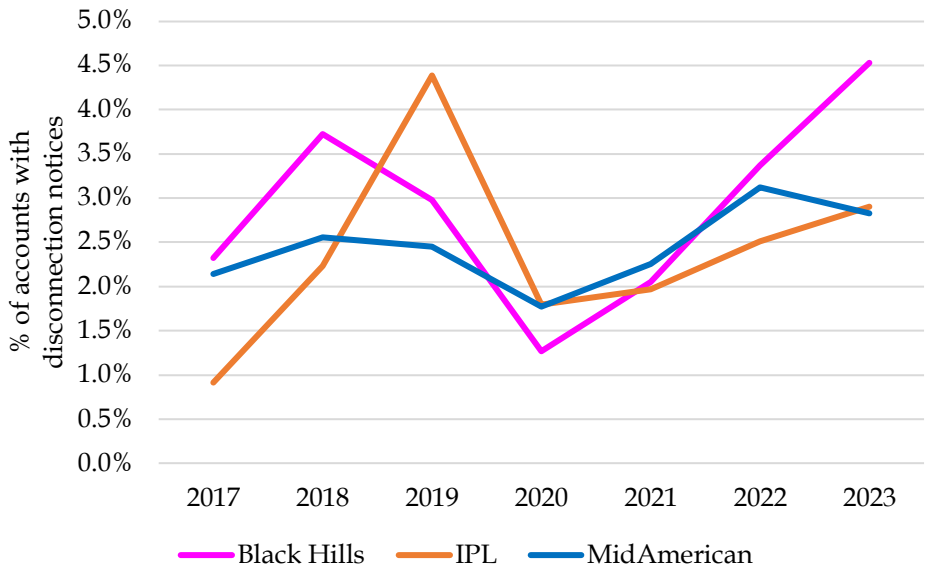
[292] PHMSA. "Pipeline Failure Causes." Web. November 26, 2018.

[293] PHMSA. *Pipeline Failure Investigation Reports.* December 13, 2021.

[294] Ibid.

Figure 104. Percentage of disconnection notices relative to the total accounts of gas rate-regulated utilities



Source: IUB. *Residential Past Due Accounts and Disconnection Data.* Web. Accessed October 24, 2023.

Building on the findings related to disconnection notices, LEI proceeded to further contextualize the affordability of gas services by comparing disconnection rates among Iowa and selected peer states.

Michigan and Missouri were selected among other states across the US in the *Powerless in the United States* study based on already achieving over 30,000 gas disconnects at the time of the study.[295] Noting that the total number of disconnections in the two peer states does not include the full number of disconnections for the 2022 calendar year, Iowa rate-regulated gas utilities compare favorably against Missouri, but not against Michigan. Figure 105 highlights the total number of disconnections by Iowa rate-regulated gas utilities compared to those in Michigan and Missouri.

Figure 105. Total gas utility disconnections in Iowa, Michigan, and Missouri (2021 – 2022)

States	Disconnects in 2021	Total # of gas customers in 2021	2021 Disconnects/total customer	Disconnects in 2022	Total # of gas customers in 2022	2022 Disconnects/total customer
Iowa	19,620	1,055,963	1.86%	27,563	1,063,390	2.59%
Michigan	21,423	3,649,159	0.59%	30,385*	3,357,419	0.91%
Missouri	37,336	1,562,821	2.39%	41,166**	1,569,543	2.62%

[295] Utility databases; Center for Biological Diversity, Energy and Policy institute, and BailoutWatch. *Powerless in the United States*. Web. Accessed October 30, 2023.

* Total number through June 2022.

** Total number through September 2022.

Source: Utility databases; Center for Biological Diversity, Energy and Policy institute, and BailoutWatch. *Powerless in the United States*. Web. Accessed October 30, 2023.

8.2.3 The safety of the Iowa gas industry is above average compared to the peer states

To determine if rates have supported safe services, LEI reviewed the probable violations and accidents as reported by the IUB's Safety and Engineering bureau.[296] Violations indicate non-compliance by gas facilities with detailed federal and state pipeline safety rules. This includes adherence to operational standards for various types of gas distribution units, such as municipal, private, and interstate distribution, along with compliance actions as mandated in individual inspection reports filed with the IUB.

The absence of reported gas incidents over the past two years could suggest the effectiveness of safety practices within the sector. There was a rise in probable violations of state and federal pipeline safety rules, more than doubling by 2021. However, the frequency of reported gas incidents did not follow this trend, with no incidents reported in the latter three years.

Figure 106. Frequency of gas safety violations and accidents

Year	Gas: Probable violations of state and federal safety rules (and compliance actions)	Gas: Incidents
2017	172 (41)	1
2018	131 (38)	0
2019	278 (42)	1
2020	214 (29)	0
2021	494 (159)	0

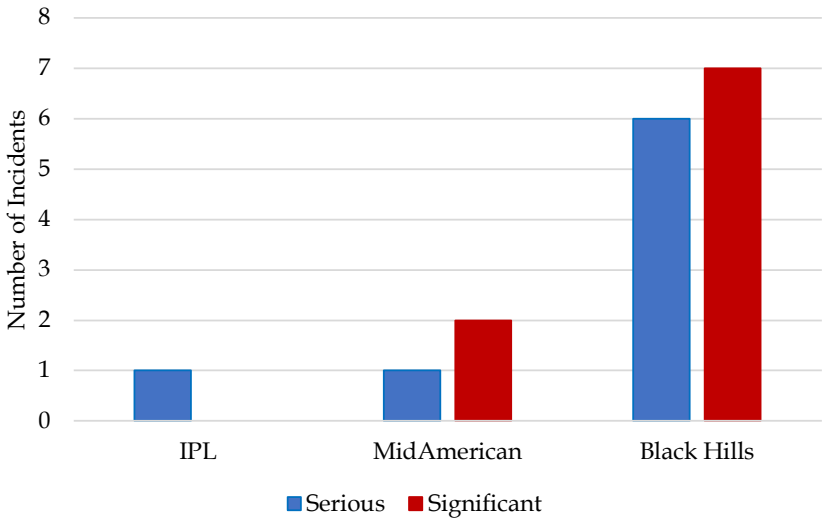
Source: IUB. *Annual Reports* (2017-2021).

As a supplement to this, LEI reviewed incidents reported to PHMSA. In Iowa, there have been a total of eight serious incidents, involving fatalities or injuries requiring in-patient hospitalization, documented from January 2010 to September 2023. Additionally, the state has witnessed ten significant incidents, including fatalities, substantial financial costs, and notable liquid releases, as classified by PHMSA. Figure 107 categorizes incidents into 'Serious' and 'Significant', offering insight into the severity of these events.[297]

[296] IUB. *Annual Reports* (2017-2021). Web.

[297] Ibid.

Figure 107. Frequency of serious and significant incidents in rate-regulated gas utilities in Iowa (January 2010 – September 2023)



	Serious	Significant	Number of Customers	Incidence rate (Total incidents/Total number of customers)
IPL	1	0	224,391	0.000%
MidAmerican	1	2	584,334	0.001%
Black Hills	6	7	156,303	0.008%

Note: To avoid duplication, 'Significant' incidents which overlap with 'Serious' incidents have been excluded in the figure above.

'Serious' incidents are those including a fatality or injury requiring in-patient hospitalization.

'Significant' incidents involve (1) Fatality or major injury; (2) Costs over $50,000; (3) Volatile liquid releases of 5+ barrels or other liquid releases of 50+ barrels; or (4) Liquid releases causing unintended fire/explosion. Incidents from external fires or explosions affecting pipelines are excluded.

The number of customers has been calculated by taking the average of the total number of customers from the years 2010 to 2022.

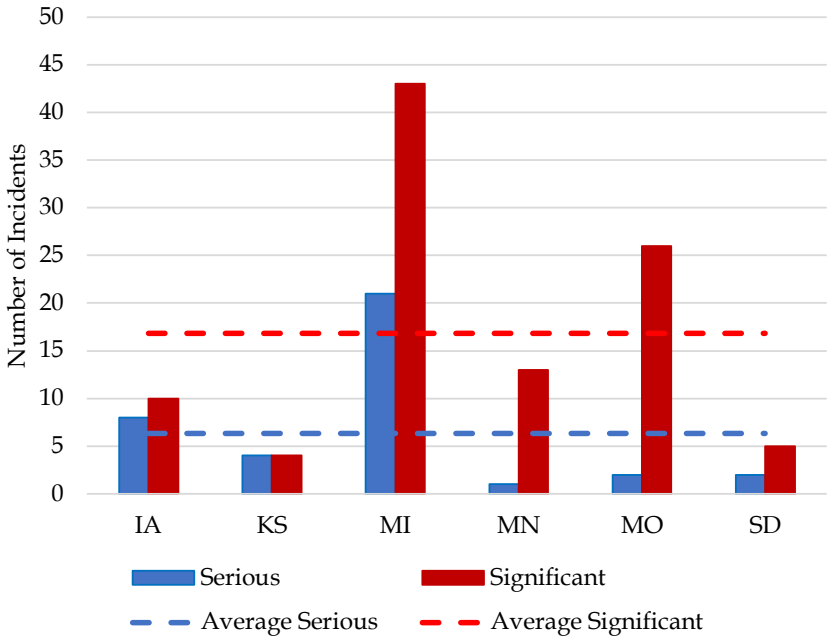
Sources: PHMSA. *Pipeline Incident Flagged Files from 2010 to Present*. Web. November 6, 2023; IUB. *Information from Utility Annual Report Filings 2010-2022*.

Based on the safety incident data analysis, the frequency of reported incidents varies across the rate-regulated utilities, with Black Hills having the highest number of incidents. However, it is noteworthy that the overall number of serious incidents is relatively low, especially when considering the extensive time span covered by the study—13 years. This observation implies that, given the considered timeframe, serious incidents have not been notably high in Iowa.

Having analyzed the safety incidents within Iowa's gas utilities, LEI expanded its examination to a comparative analysis with peer states. This comparative approach not only highlights Iowa's standing in terms of safety incidents but also provides a broader context to understand how the state's gas utilities measure up against similar jurisdictions.

An evaluation of the data from January 2010 to September 2023 reveals that Iowa has reported eight serious incidents, which involve fatalities or injuries necessitating in-patient hospitalization.[298] Additionally, there have been 10 significant incidents,[299] denoting events with either a fatality or major injury, total costs surpassing $50,000, volatile liquid releases amounting to five or more barrels, or other liquid releases of 50 or more barrels.

Figure 108. Number of serious and significant incidents in gas distribution utilities (2010 - 2023)



Note: To avoid duplication, "significant" incidents that overlap with "serious" incidents (based on PHMSA data) have been excluded in the figure above.

Source: PHMSA. *Pipeline Incident Flagged Files from 2010 to Present.* Web. November 6, 2023.

When comparing Iowa's numbers to the peer average, it is observed that serious incidents (eight) are slightly higher than the peer average of six, while its significant incidents (ten) are below the average of 17 incidents. This suggests that while the state has had a marginally elevated rate of more severe incidents, its record on significant incidents is comparatively better. States such as Michigan experienced notably higher incidents, emphasizing the varying safety performances across the five states. It is also worth noting that other peer states with the exception of South Dakota have higher gas pipeline mileages, as detailed in Figure 109.[300] This increased pipeline

[298] PHMSA. *Pipeline Incident Flagged Files from 2010 to Present.* Web. November 6, 2023.

[299] Ibid.

[300] PHMSA. *Pipeline Mileage and Facilities.* Web. April 10, 2023.

mileage may introduce more opportunities for failures in the peer states, as this increases the amount of pipelines that need to be inspected and maintained.

Figure 109. Total gas pipeline mileage by state (2022)

States	Total gas pipeline mileage
Iowa	43,076
Kansas	50,512
Michigan	131,445
Minnesota	66,806
Missouri	54,402
South Dakota	10,830

Source: PHMSA. *Pipeline Mileage and Facilities*. Web. April 10, 2023.

The South Dakota PUC has a Pipeline Safety Program that inspects and investigates intrastate natural gas pipeline systems. The program has jurisdiction over 287 miles of transmission and 4,736 miles of distribution pipelines.[301] The KCC in its annual reports publishes statistics on pipeline safety, such as the gas damages investigated in a calendar year and the amount of natural gas incidents.[302] The Michigan PSC is responsible for the regulation and inspection of Michigan's natural gas pipeline infrastructure and conducts safety inspections and incident investigations.[303] The Minnesota PUC issues permits for construction and installations of pipelines.[304] Similar to these jurisdictions, the IUB enforces pipeline safety rules and has employees that inspect and investigate the gas pipelines in Iowa to ensure that gas operators in the state are in compliance with safety standards.[305] While most pipeline failures may be caused by outside damage to the pipeline, some can be caused by pipeline corrosion, operator error, or malfunction of the controls system. These causes are monitored by the IUB, so the low number of pipeline failures can be attributed in part to the IUB properly overseeing pipeline safety ahead of any potential failures.

8.3 Water industry

8.3.1 Iowa is average regarding the reliability of its services compared to peer states

LEI investigated the number of water violations to measure the reliability of water utility services in Iowa and the five peer states. Instances of water violations occur when a water system is

[301] South Dakota Public Utilities Commission. *South Dakota Pipeline Safety Program.* Web. Accessed October 27, 2023.

[302] KCC Common Carrier Annual Reports.

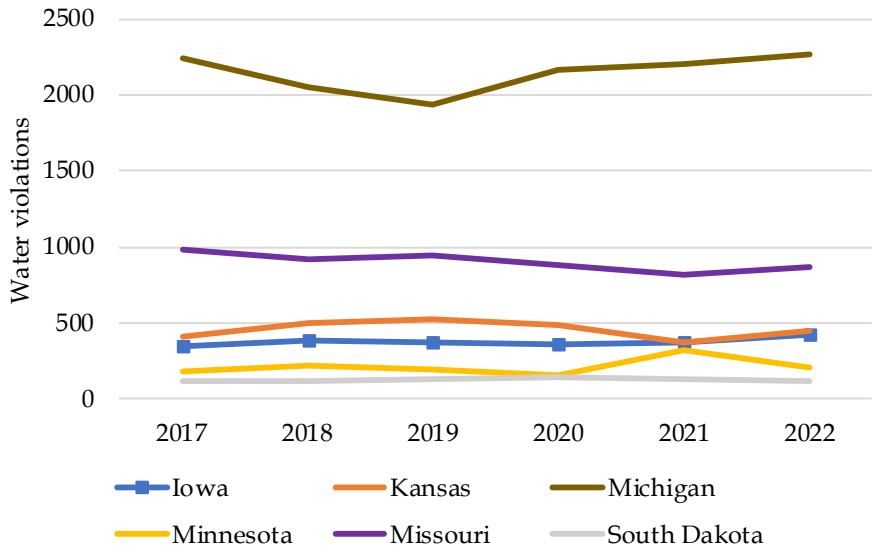
[303] Michigan Public Service Commission. *Annual Report 2021.* March 7, 2022.

[304] Minnesota Public Utilities Commission. *Pipelines*. Web. Accessed October 27, 2023.

[305] IUB. *Pipeline Safety*. Web. Accessed October 30, 2023.

deemed to have violated the drinking water standards established by the EPA. The EPA sets these standards for drinking water quality and oversees drinking water programs across the nation. Water violations by state from 2017 to 2022 have been compiled using the EPA's Enforcement and Compliance History Online ("ECHO") tool. The ECHO tool is EPA's online database that provides the public access to integrated data from a variety of EPA data systems. Figure 110 shows the number of water violations by public water systems ("PWSs") in Iowa and the five peer states from 2017 to 2022.[306]

Figure 110. Number of water violations in Iowa and the five peer states



Source: EPA. *ECHO tool*. Web. Accessed October 27, 2023.

It can be observed that PWSs in Iowa have been performing better than other states, such as Kansas, Missouri, and Michigan. Michigan is the clear outlier among these states, primarily due to the ongoing issues stemming from the Flint water crisis (with the understanding that this is an extreme circumstance).[307]

8.3.2 IAWC is slightly below average for affordability

One of the metrics to assess if water rates charged by IAWC are affordable is to look at the variation in the number of accounts in arrears.[308] Between 2017 and 2022, IAWC's data reveals noticeable fluctuations in residential disconnections stemming from unpaid bills. In 2017,

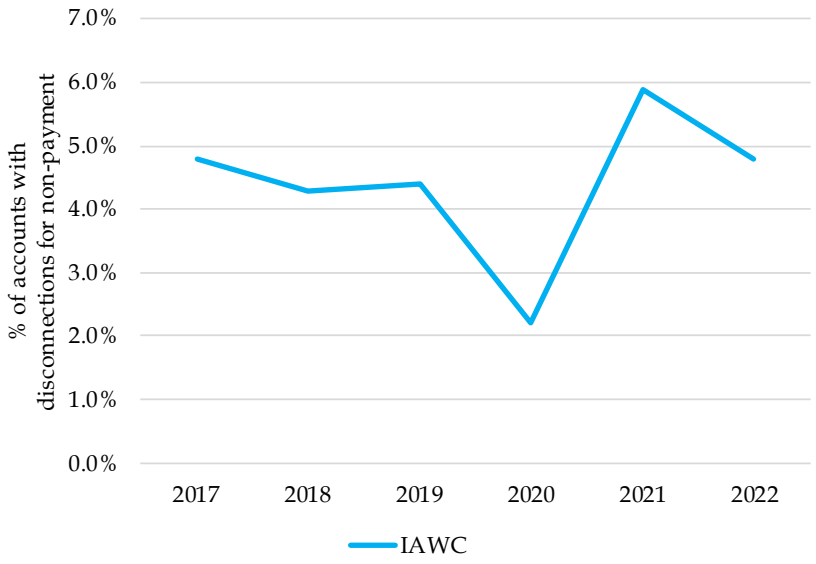
[306] EPA. *ECHO tool*. Web. Accessed October 27, 2023.

[307] Fonger, Ron. "Lead levels drop slightly in Flint's water testing during first 6 months of 2023." MLive. Web. August 8, 2023.

[308] IUB. *IAWC – LEI DR No 02_Attachment* (2017-2022). Docket NOI-2023-0001.

approximately 4.8% of IAWC's customers experienced disconnections due to non-payment (see Figure 111). The decline observed from 2019 to 2020 can be linked to factors such as the absence of the QIP charge and the temporary suspension of shutoffs for non-payments amid the pandemic. With the moratorium's end, there was an expected increase in disconnection notices in 2021 and 2022 following the lifting of this suspension.

Figure 111. Percentage of IAWC's residential accounts with disconnection for non-payment



Source: IUB. *IAWC – LEI DR No 02_Attachment* (2017-2022). Docket NOI-2023-0001.

In summary, this metric suggests that short-term measures like payment moratoriums and the offset of QIP have provided some relief from financial strain for customers. Yet, the subsequent increase in disconnection notices post-suspension in 2021 and 2022, surpassing pre-2018 levels, indicates persistent challenges. However, this metric alone does not offer a complete picture of affordability. A comprehensive assessment, factoring in various demographics and multiple considerations, is essential for thoroughly understanding water rate affordability in Iowa.

While the analysis of IAWC's residential accounts with disconnection provides insight into affordability changes in Iowa, a broader perspective is provided by recent national research.

The 2023 study conducted by the Nicholas Institute for Energy, Environment and Sustainability measured the affordability of water utility rates throughout the country. The study defined household water affordability as the ability of a household to pay for basic water services without undue hardship. The researchers assumed 6,000 gallons of water per month is sufficient to meet

basic needs and defined undue hardship as spending more than 4.6% of household income on monthly water services.[309]

The data in Figure 112 indicates that the percentage of households in Iowa experiencing hardship to cover water service bills is close to the peer average and slightly higher for the percentage of households that spend more than 10% of their incomes to cover water service bills. As noted previously, it can be expected that states with rate-regulated water utilities would have higher rates (and lower affordability) based on the increased investment and operating expenses spent to maintain reliable and safe services.

Figure 112. Affordability of water services in Iowa and peer states (%)

States	Percentage of households that spend more than 4.6% of income on monthly water bill	Percentage of households that spend more than 10% of income on monthly water bill
Iowa	15.5%	6.2%
Kansas	15.5%	5.8%
Michigan	15.3%	5.6%
Minnesota	4.7%	2.0%
Missouri	19.4%	7.5%
South Dakota	20.3%	7.7%
Average	15.1%	5.8%

Source: Nicholas Institute for Energy, Environment & Sustainability. *Affordability of Household Water Services Across the United States.* Web. Accessed November 29, 2023.

8.3.3 IAWC ranks very favorably for safety per federal standards

A review of the IUB Electronic Filing System records revealed no safety incidents for IAWC from January 2013 to December 2022.[310] The IUB does not require safety reporting for sewer or water, implying safety incidents may not be consistently recorded in dockets.

To supplement this data, LEI reviewed the EPA's publicly available data on violations by PWSs in Iowa over the recent decade[311] and the EPA's facility report.[312] This comprehensive analysis leverages the detailed information provided by the EPA regarding any violations of the Safe Drinking Water Act ("SDWA") standards by PWSs, alongside the regulatory filings within the state, to present a nuanced picture of water service safety in Iowa.

[309] Nicholas Institute for Energy, Environment & Sustainability. *Affordability of Household Water Services Across the United States.* Web. Accessed November 29, 2023.

[310] IUB. *Electronic Filing System. Docket Type: H – Accident – Outages.* Web. Accessed November 6, 2023.

[311] EPA. *Drinking Water Dashboard Help.* Web. Accessed November 10, 2023.

[312] EPA. *Detailed Facility Report – Iowa-American Water Company.* Web. Accessed November 10, 2023.

A 'violation' refers to instances where PWSs in Iowa have failed to comply with the SDWA requirements.[313] These requirements encompass water quality standards, monitoring, and operational mandates critical to ensuring safe drinking water for the public. The data, sourced from EPA's Safe Drinking Water Information System ("SDWIS"),[314] indicates variability in PWS violations over the past decade.

According to the EPA's detailed facility report, between 2013 and 2022, there has been only one violation by IAWC, specifically a monitoring and reporting violation for radionuclides between October 1, 2017, and September 30, 2020, with no further violations noted through to the third quarter of 2023, which is currently in progress. This record underscores IAWC's commitment to compliance and the effectiveness of its measures to maintain water quality standards.

Building on IAWC's safety and compliance records, LEI deepened its analysis by examining the utility's annual water quality reports. The detailed review, especially of contaminants like perfluorooctanoic acid ("PFOA") and perfluorooctane sulfonic acid ("PFOS"), sheds further light on IAWC's water supply safety. The analysis compares IAWC's performance against standards set by peer states' largest utilities, providing a comprehensive view of water safety in the context of federal guidelines.

In 2022, IAWC recorded 4.4 parts per trillion for combined PFOS and PFOA, which is far below the federal health advisory level of 70 parts per trillion.[315] The largest water utility in Kansas, WaterOne, noted in its 2023 Water Quality Report that no PFOA or PFOS has been detected in its water.[316] The other peer state in which the regulator has ratemaking authority over water utilities is Missouri, with its largest water utility being MAWC. In its 2022 Water Quality Report, MAWC also did not detect any PFOA or PFOS levels in its 2021 sample.[317] While IAWC does have a higher combined level of PFOS and PFOA when compared to the rate-regulated water utilities in Kansas and Missouri, the level is still 93.7% below the federal health advisory level—indicating that IAWC is providing safe water service to customers based on federal standards.

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[313] EPA. *Drinking Water Dashboard Help*. Web. Accessed November 10, 2023.

[314] Note the SDWIS is the national database of record for compliance and enforcement activities conducted under the SDWA used by state, tribal, and territorial environmental agencies, as well as the EPA.

[315] Iowa-American Water Company. *2022 Water Quality Report.* May 12, 2023.

[316] WaterOne. *2023 Water Quality Report.* Web. Accessed October 27, 2023.

[317] Missouri-American Water Company. *2022 Water Quality Report.* July 18, 2023.

9 Appendix 1: Public policy charrettes and stakeholder input

In addition to its own independent research, LEI also talked with and gathered the views of stakeholders on the issues relevant to this Study through public policy charrettes organized with the IUB. LEI met with stakeholders in Des Moines, Iowa, on August 30-31, September 26-27, and November 1, 2023, for three separate charrettes. Stakeholders participated both in-person and virtually to provide feedback and discuss prompts relevant to the ratemaking procedures and legislation in Iowa and surrounding states. Stakeholders were also given the opportunity to provide written comments prior to and following each public policy charrette for additional consideration. Figure 113 shows the list of stakeholders that participated in the charrettes or provided written comments in the Docket.

Figure 113. List of stakeholders

Stakeholders	Stakeholders
AARP	Iowa Environmental Council
Black Hills/Iowa Gas Utility Company	Iowa House of Reps. members and staff
Clean Energy Districts of Iowa	Iowa Senate members and staff
Environmental Intervenors	Iowa Solar Energy Trade Association
Environmental Law and Policy Center	Iowa Utilities Board
Former IUB staff member	Iowa Utility Association
Grid Strategies	Iowa-American Water Company
GridLab	ITC Midwest
Interstate Power & Light Company	Large Energy Group
Iowa Association of Electric Cooperatives	MidAmerican Energy Company
Iowa Association of Municipal Utilities	Midwest Energy Efficiency Alliance
Iowa Business Energy Coalition	Missouri River Energy Services
Iowa Business for Clean Energy	Office of Consumer Advocate
Iowa Community Action Association	PolicyWorks
Iowa Economic Alliance	Sierra Club
Iowa Economic Development Authority	Voltus

Each policy charrette centered on a different objective of the Study that LEI would be reviewing in more depth. LEI proposed discussion prompts based on each objective to elicit discussion between stakeholders and receive direct feedback on ratemaking procedures. The presentation slides used by LEI for each charrette are filed in the Docket. The purpose of each policy charrette is as follows:

- Public policy charrette #1: evaluate the adequacy and efficiency of Iowa's current ratemaking laws, procedures, and administrative rules;
- Public policy charrette #2: receive inputs from stakeholders on the ratemaking procedures of other MISO and SPP states that they have observed that should be explored in this Study; and
- Public policy charrette #3: receive input from stakeholders on specific feedback on potential changes to Iowa's ratemaking laws and procedures, and how the changes would be implemented.

10 Appendix 2: Other automatic adjustment mechanisms used by the electric rate-regulated utilities

In addition to the EAC and the transmission cost riders, IPL and MidAmerican also charge other riders and trackers, namely:

- EE and DR trackers;
- RER;
- Equalization rider; and
- Tax Expense Revision Mechanism ("TERM").

These are discussed in detail in the subsections below.

10.1 Energy efficiency and demand response trackers

In terms of trackers, rate-regulated electric utilities predominantly utilize them to recover EE and DR costs from their retail electric customers. The EECR and Demand Response Cost Recovery ("DRCR") rates are adjusted annually for both IPL and MidAmerican.

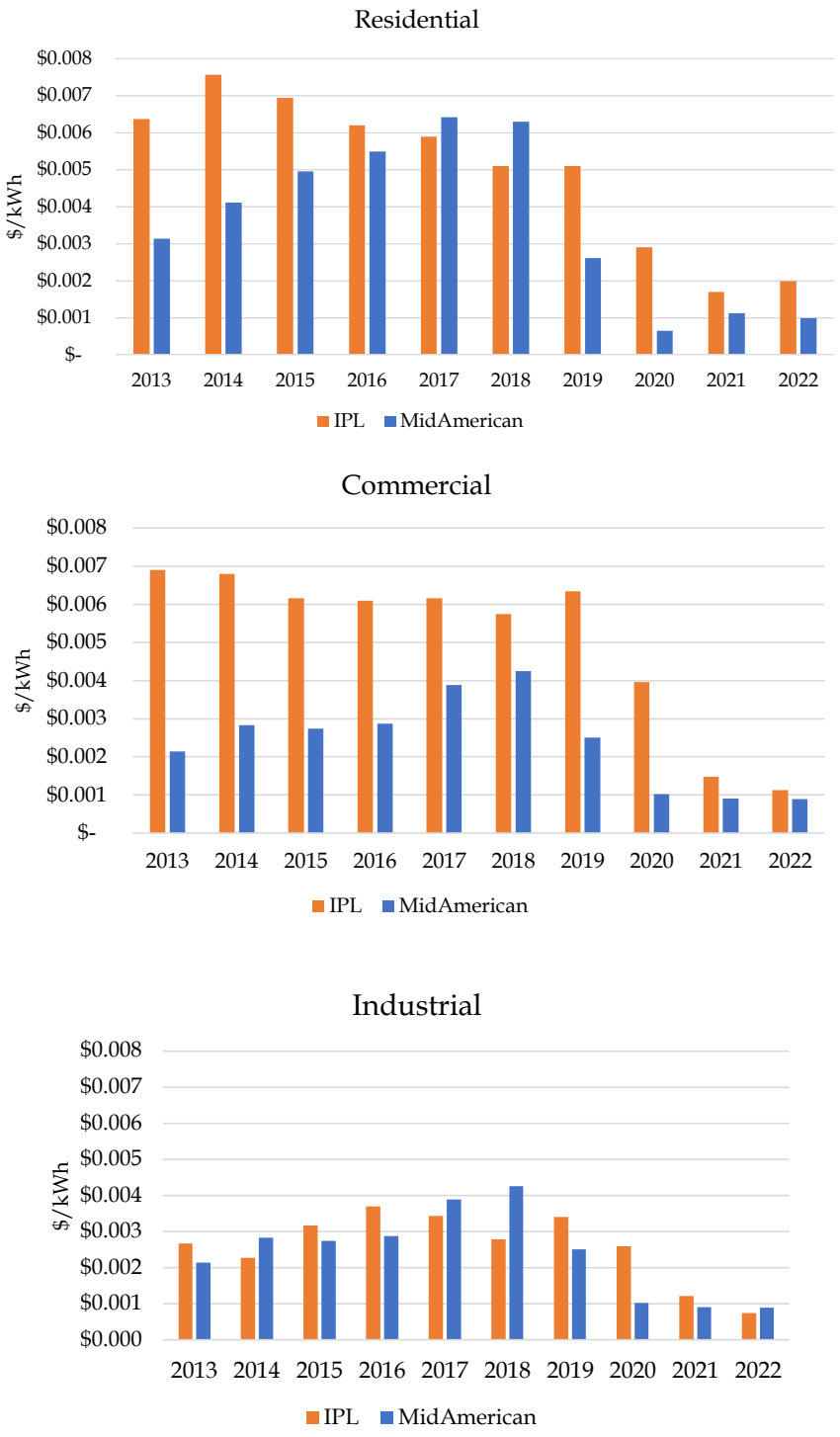
There is a downward trend in EECR across all the customer classes beginning 2018, as shown in Figure 114. The significant decline in EECR from 2019 onward can be ascribed to modifications resulting from the enactment of SF 2311.[318,319] This legislation imposed limits on utility expenditures for EE and DR programs.

On the other hand, there has been an upward trend in the DRCR rates for the past three years, especially for IPL (see Figure 114). IPL's DRCR rates are also substantially higher than MidAmerican, indicating that IPL has increased costs associated with managing and incentivizing DR initiatives or is implementing more extensive programs to balance energy demand during peak periods.

[318] Senate File 2311. *An Act Modifying the Various Provisions Relating to Public Utilities Providing for A Study of Electric Vehicle Infrastructure Support, and Including Effective Date Provisions*. Web.

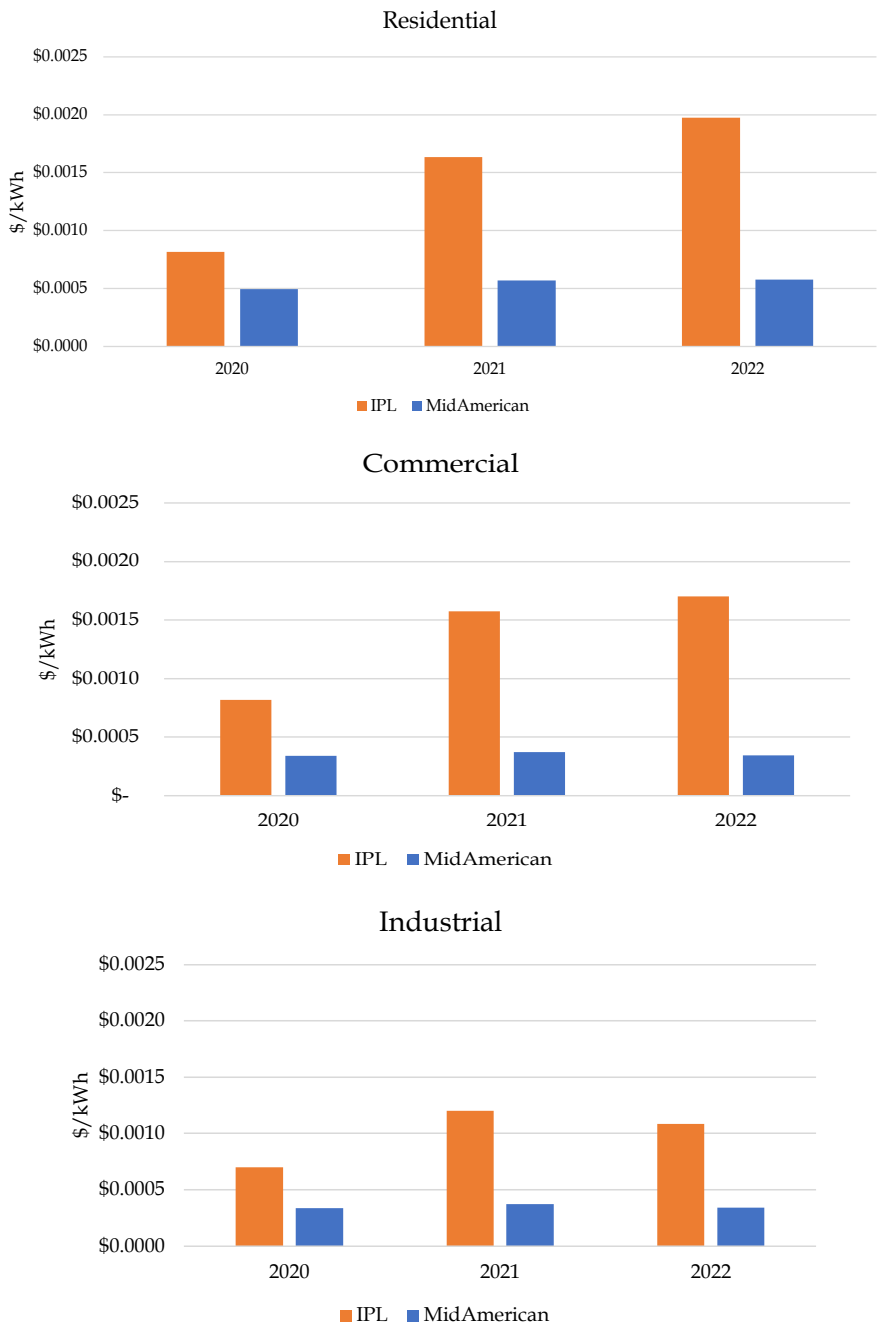
[319] Prior to 2019, EE and DR were combined in the EECR but split out after the caps were imposed by SF 2311.

Figure 114. Average EECR rates for residential, commercial, and industrial customers ($/kWh)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

Figure 115. Average DRCR for residential, commercial, and industrial customers ($/kWh)



Source: Data acquired through a data request response from MidAmerican and IPL through Docket No. NOI-2023-0001.

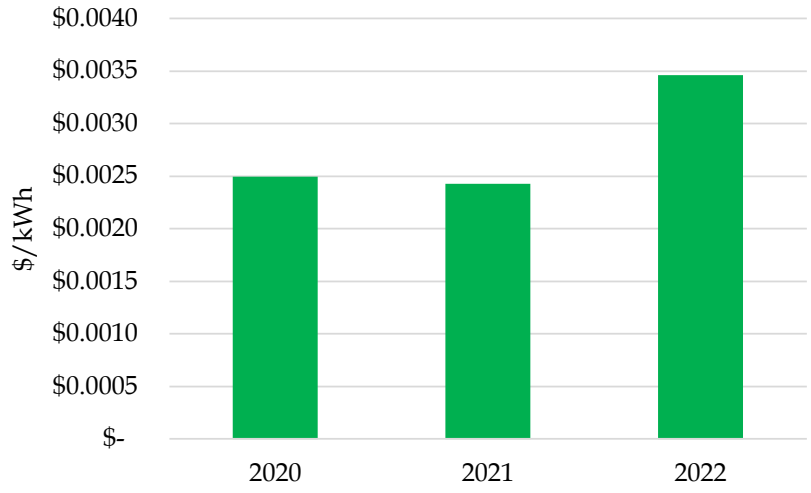
10.2 Renewable Energy Rider

IPL recovers a return of and earns a return on its wind generation placed in service in 2019 and 2020 through a RER from its retail electric customers. These include IPL wind farms that are part

of New Wind I and II. Other applicable costs and tax benefits associated with this wind generation, excluding O&M expenses, are also included in the rider.[320] This cost recovery mechanism provides annual adjustments to electric rates for renewable energy costs and tax benefits.[321] Notably, in Docket No. RPU-2023-0002, IPL proposes to eliminate the RER.

The RER rider is the same for all customer classes for each year. It can be observed that the RER rate increased substantially in 2022 by more than 47% for all customer classes, as presented in Figure 116. The increase in the RER in 2022 is due to an updated RER factor, which reflected the under-collection of RER revenues. This under-collection was due to energy production at RER-eligible wind facilities being less than projected for the 2021 RER factor.[322] This means that the 2022 RER factor had to be updated to reflect the under-collected revenues. IPL attributes the difference in energy production to negative energy market prices that occurred during that period and resulting curtailments.[323]

Figure 116. IPL's average RER for residential, commercial, and industrial customers ($/kWh)



Source: Data acquired through a data request response from IPL through Docket No. NOI-2023-0001.

10.3 Tax Expense Revision Mechanism

MidAmerican has a TERM rider that passes certain tax benefits related to the income tax reduction from the Tax Cuts and Jobs Act of 2017 to customers, as well as the impact of the ongoing reductions in the Iowa corporate tax rates. This rider is akin to IPL's TBR. Unlike IPL,

[320] IUB. *Final Decision and Order.* Docket No. RPU-2019-0001. January 8, 2020. P. 43.

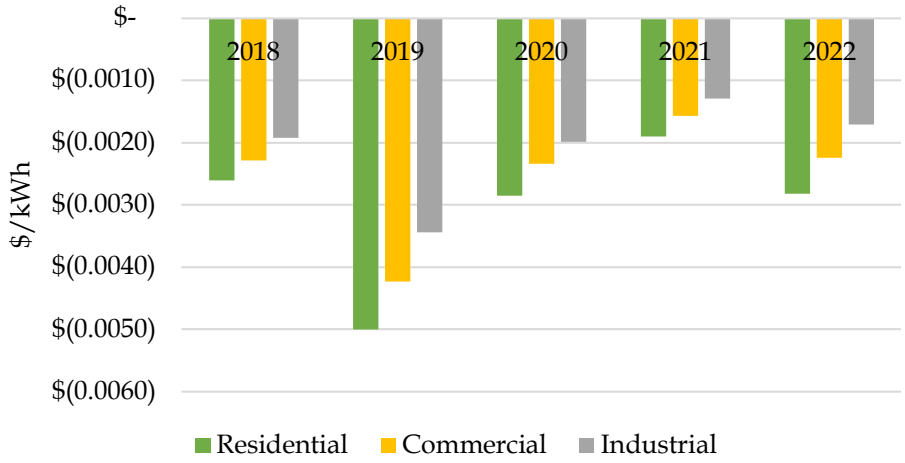
[321] Ibid.

[322] IPL. *Interstate Power and Light Company's Response to Large Energy Group's Conditional Objection.* Docket No. TF-2021-0104. December 17, 2021. P. 3.

[323] Ibid.

however, MidAmerican does not include the TERM in the EAC as this would entail filing a rate case. For all the years since the TERM rider has been in effect, residential customers have consistently experienced the greatest advantages, as evidenced Figure 117. Over the past four years, residential customers have, on average, received a 20.3% higher TERM rider compared to commercial customers and 47.2% higher compared to industrial customers.

Figure 117. MidAmerican's average TERM rider charge ($/kWh)



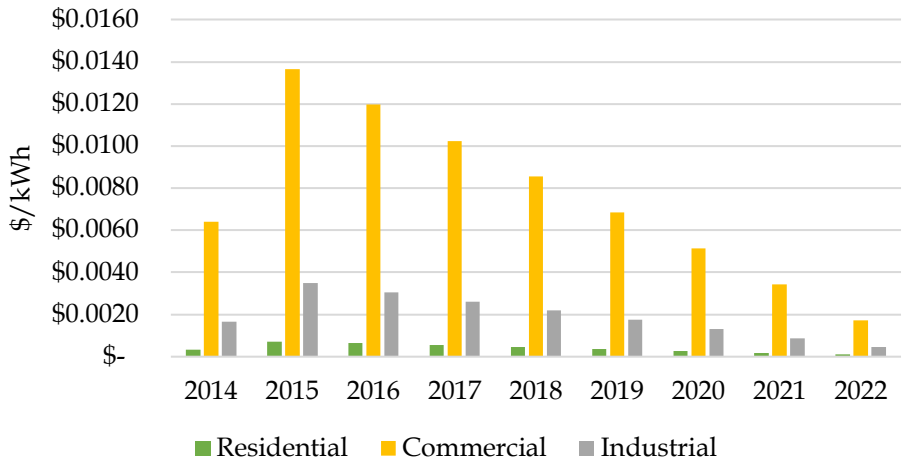
Source: Data acquired through a data request response from MidAmerican through Docket No. NOI-2023-0001.

10.4 Equalization Rider

MidAmerican's Equalization Rider is incorporated into electric service rates to ensure uniform electric base rates for all MidAmerican customers within each rate class.[324] These adjustments have been systematically introduced in equal annual increments over a 10-year period, beginning in 2014. Notably, it has shown a decreasing trend since 2015 as the 10-year implementation period approaches its conclusion.

[324] MidAmerican Energy Company. *Understanding Your Bill*. Web.

Figure 118. MidAmerican's average Equalization Rider charge ($/kWh)



Source: Data acquired through a data request response from MidAmerican through Docket No. NOI-2023-0001.

11 Appendix 3: Information on additional trackers and riders per Iowa Code and IAC

The following list of trackers and riders are utilized by Iowa rate-regulated utilities and allowed by Iowa Code and the IAC:

- According to Iowa Code section 476.6(8)(b), a rate-regulated electric or gas utility may recover costs related to transmission through an automatic adjustment mechanism over a period not to exceed the term approved by the IUB. The initial approval of an automated adjustment mechanism necessitates informing customers and may involve a case proceeding. IPL uses this automatic adjustment mechanism to pass through costs from ITC Midwest, its transmission partner, while MidAmerican has its own transmission cost rider as a vertically integrated company.

- According to Iowa Code section 476.49, an electric utility is allowed to recover the amounts credited to an eligible distributed generation customer for outflow purchases pursuant to a tracker. To the extent an electric utility does not have such a tracker, the IUB allows an electric utility to establish a tracker to recover such amounts.

- The IUB has also directed the utility to adopt trackers, such as for the recovery of RCEs. Recovery through a tracker will end once the expense is fully recovered.[325]

- At least biennially, but no more than annually, the IUB requires IPL and MidAmerican to provide fuel, freight, and transportation invoices from two months of the previous calendar year in correspondence with their EACs. The utility needs to demonstrate how these invoices correspond to the EAC calculations.[326]

- For rate-regulated natural gas utilities, 199 IAC - 19.18 outlines a capital infrastructure investment automatic adjustment mechanism that allows the utilities to recover certain costs from customers if approved by the IUB. These costs have to meet the criteria of being outside the direct control of management, represent a sudden or important change, important in determining total cost of capital infrastructure investment for customers, and segregated in the accounts of the utilities.[327] The application of this rule is meant to promote safe and adequate service from the gas utilities to the public while accounting for appropriate capital infrastructure investment costs that may be passed on to customers. This mechanism is important to note for the rate-regulated gas utilities as it outlines how costs for infrastructure that are not necessarily specific to adding generation assets can be recovered by utilities through rates.

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[325] Iowa Administrative Code. *Rate case expense, 199 IAC 26.7(476)*.

[326] Iowa Administrative Code. *Review of energy adjustment clause, 199 IAC 20.9(4)*.

[327] Iowa Administrative Code. *Capital infrastructure investment automatic adjustment mechanisms, 199 IAC 19.18(476)*.

Similar in design to the capital infrastructure investment mechanism for gas utilities, a final decision and order from the IUB in 2017 approved a QIP replacement mechanism for rate-regulated water utilities in Iowa. This mechanism allows for water utilities to include the costs of infrastructure investments in base rates without having to file for an additional rate case.[328] The application of this mechanism requires a separate docket filing and approval from the IUB before implementation, but allowing for the inclusion of these investment costs without a full rate case proceeding was seen as a benefit to customers in the form of decreased rates (resulting from avoided administrative expenses).

[328] IUB. *Final Decision and Order*. Docket No. RPU-2016-0002. February 27, 2017.

12 Appendix 4: MidAmerican's revenue sharing mechanism

MidAmerican's revenue sharing mechanism dates back to 1997,[329] approved by the IUB as a result of a settlement in a rate proceeding. The original mechanism was structured so that a set percentage of revenue would be shared if MidAmerican's ROE exceeded 14%. The revenue sharing mechanism was further modified and refined over the years through various orders and settlements, as outlined in Figure 119 below.

Figure 119. MidAmerican's revenue sharing mechanism

Source: MidAmerican Energy Company. *Iowa Revenue Sharing Presentation*. February 10, 2023.

Revenue sharing prior to 2001 took the form of customer refunds via a bill credit. In 2001, the IUB approved a settlement that allowed funds resulting from the revenue sharing mechanism to be used to offset the allowance for funds used during construction, benefiting ratepayers by avoiding rate shock when new plants were put into service.[330] Since 2001, revenue sharing has accelerated the depreciation of generation assets, which has reduced Iowa's electric rate base. MidAmerican stated that applying this rate base reduction to generation assets lessens the need for a future rate increase.[331]

Currently, revenue sharing effectively caps MidAmerican's earnings at a blended ROR and requires earnings above that level to be shared with customers. Once MidAmerican reaches the revenue sharing threshold, 90% of the surplus earnings are given back to customers through a reduction in the rate base resulting from lower depreciation balances on generation assets. Since 1997, MidAmerican has shared nearly $900 million with customers through the revenue sharing mechanism.[332]

The general revenue sharing calculation has remained consistent since the mechanism's introduction in the late 1990s: Iowa electric jurisdictional operating income divided by Iowa

[329] Docket Nos. RPU-96-8 and APP-96-1.

[330] MidAmerican Energy Company. *Application for Reconsideration, Request for Clarification, and Request for Hearing*. Docket No. TF-2020-0273. June 24, 2021.

[331] Ibid.

[332] MidAmerican Energy Company. "MidAmerican served Iowa customers' electricity demand with 100% renewable energy in 2022." Web. September 25, 2023.

electric jurisdictional rate base, minus the weighted average embedded cost of capital, divided by MidAmerican's common equity percentage. The calculation has, however, undergone modification over time (for example, to the threshold ROE and percentage allocated to customers) following rate cases or advance ratemaking proceedings.[333] For instance, in 2016, as part of MidAmerican's request for ratemaking principles for the Wind XI project (Docket No. RPU-2016-0001), the revenue sharing calculation also came to include a fixed equity return for all other generation assets included in MidAmerican's rate base. In 2017, the revenue sharing mechanism was approved for generation assets that were refurbished or repowered, as evidenced by the IUB's order in Docket No. TF-2017-0294 approving the PTC benefit associated with repowering wind generation assets.

The 2018 Wind XII docket (Docket No. RPU-2018-0003) modified the revenue sharing mechanism and specified that the revenue sharing threshold is either the weighted average cost of common equity or 11%, whichever is lower. The weighted average cost of common equity is calculated annually using equity returns approved by the IUB for all ratemaking rate base assets and other rate base assets, with the two-point average rate base utilized in the annual revenue sharing calculation. For all other rate base assets, the equity return is based on 30-year single-A utility bond yields as published by Moody's Investors Service, Inc., plus 400 basis points, with a minimum return of 9.5%.[334]

When the Iowa jurisdictional electric operating income exceeds the revenue sharing threshold, 90% of the excess amount is returned to customers in the form of lower base rates. Any revenue-sharing proceeds benefiting customers will be directed towards reducing the investment in the generation rate base as specified below:

- 50% of the revenue sharing proceeds is applied to the following rate base assets in this order: (1) Walter Scott, Jr. Energy Center Unit 4; (2) Ottumwa Generating Station; (3) Louisa Generating Station; (4) Neal Energy Center 4; (5) Neal Energy Center 3; (6) Walter Scott Energy Center 3; and (7) Quad Cities Nuclear Power Station;

- 50% of the revenue sharing proceeds is applied to the following rate base assets in this order: (1)Walter Scott, Jr. Energy Center Unit 4; (2) Greater Des Moines Energy Center; (3) Wind I Project; (4) Wind II Project; (5) Wind VII Project; (6) Wind III Project; (7) Wind IV Project; (8) Wind V Project; (9) Wind VI Project; and to the extent they are included in rate base, the following projects will be added in this order: (10) Wind VIII Project; (11) Wind IX Project; (12) Wind X Project; and (13) Wind XI Project.

[333] MidAmerican Energy Company. *Iowa Revenue Sharing Presentation.* February 10, 2023.

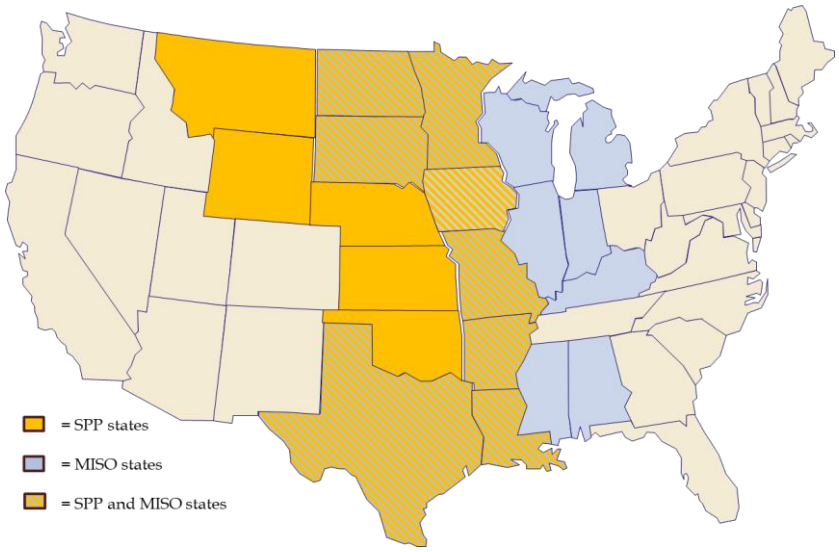
[334] IUB. *Final Decision and Order.* Docket No. RPU-2018-0003. December 4, 2018.

13 Appendix 5: Criteria for selecting the reviewed peer states

The comparative analysis began with a screening process to identify five states in the MISO and SPP regions that would best support the objectives of this analysis: to understand how Iowa rate-regulated utility services and rates compare to those of comparable peer states in the region that employ their own unique suite of ratemaking procedures, laws, and administrative rules. Figure 120 shows the MISO and SPP states (highlighted in blue and orange), along with states where both RTOs operate (states highlighted in orange with blue stripes)—these are the states for which LEI compiled the aforementioned data with which to develop an initial shortlist of states that have similar generation and customer profiles to those of Iowa and its rate-regulated utilities.

The screening process followed a methodical two-step approach. First, LEI gathered key statistics relevant to generation and customer profiles of each MISO and SPP state, such as percentage of load covered by wind generation, percentage of total load that is commercial or industrial, and total installed capacity.

Figure 120. MISO and SPP states



Source: MISO. "Fact Sheet." Web. Accessed November 8, 2023; SPP. "Fast Facts." Web. Accessed November 8, 2023.

Then, LEI identified which states have similarities in utility business structure, presence of significant wind capacity, customer mix, and multi-utility regulation, or states that exhibit features that are present in Iowa's ratemaking regime.

Figure 121 lists the relevant statistics and additional ratemaking mechanisms reviewed for each MISO and SPP state as part of this analysis. With this information, LEI was able to narrow the initial list of states down to the five states highlighted green in Figure 121—Kansas, Michigan, Minnesota, Missouri, and South Dakota.

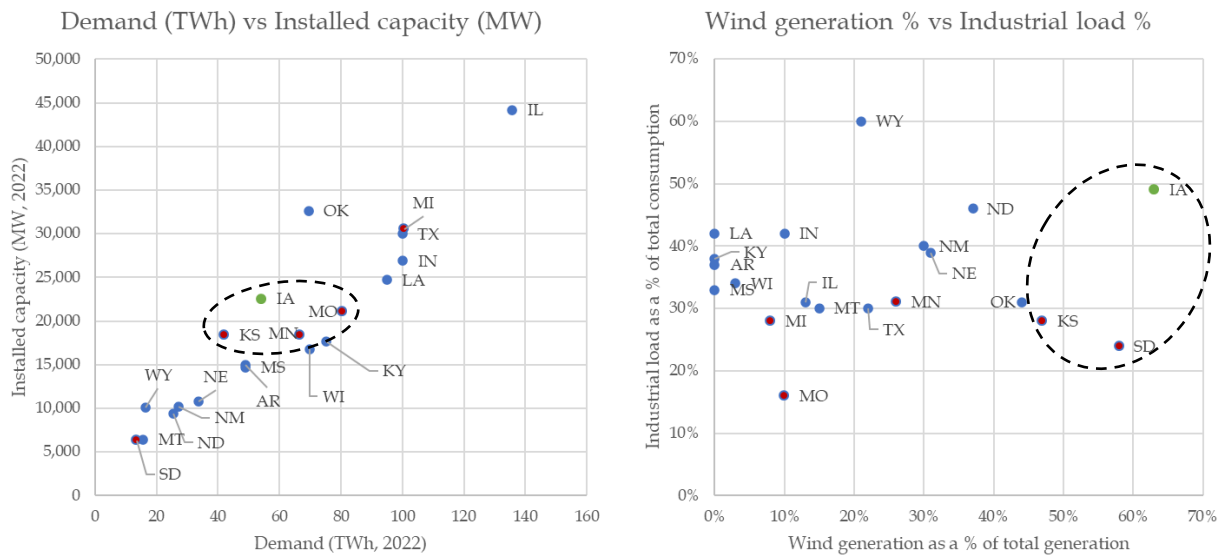
Figure 121. Key relevant statistics of MISO and SPP states

Jurisdiction	Installed capacity (MW, 2022)	Sales (TWh, 2022)	Wind Generation (2022, %)	Commercial Load (2022, %)	Industrial Load (2022, %)	Water (Y/N)	Gas (Y/N)	Revenue Sharing (Y/N)	IRP (Y/N)	Multi-year rate plan (Y/N)	PBR and PIMs (Y/N)
Iowa	22,546	54.2	63%	23%	49%	Yes	Yes	Yes	No	No	No
Arkansas	14,954	48.9	0%	24%	37%	Yes	Yes	No	Yes	No	No
Illinois	44,162	135.8	13%	35%	31%	Yes	Yes	Yes	Yes	Yes	No
Indiana	26,903	100	10%	23%	42%	Yes	Yes	Yes	Yes	No	No
Kansas	18,427	41.9	47%	38%	28%	Yes	Yes	No	Yes	No	No
Kentucky	17,633	75.3	0%	26%	38%	Yes	Yes	Yes	Yes	No	No
Louisiana	24,720	95.1	0%	25%	42%	Yes	Yes	Yes	Yes	Yes	Yes
Michigan	30,538	100.6	8%	37%	28%	No	Yes	No	Yes	No	Yes
Minnesota	18,460	66.6	26%	34%	31%	No	Yes	No	Yes	Yes	Yes
Mississippi	14,724	48.9	0%	29%	33%	Yes	Yes	No	Yes	No	No
Missouri	21,128	80.3	10%	37%	16%	Yes	Yes	Yes	Yes	No	No
Montana	6,439	15.6	15%	32%	30%	Yes	Yes	No	Yes	No	No
Nebraska	10,800	33.8	31%	28%	39%	Yes	Yes	No	Yes	No	No
New Mexico	10,230	27.1	30%	33%	40%	Yes	Yes	Yes	Yes	No	No
North Dakota	9,409	25.4	37%	33%	46%	No	Yes	Yes	Yes	No	Yes
Oklahoma	32,619	69.5	44%	32%	31%	Yes	Yes	Yes	Yes	No	No
South Dakota	6,324	13.5	58%	37%	24%	No	Yes	Yes	Yes	No	No
Texas	148,900	475.4	22%	34%	30%	Yes	Yes	Yes	No	No	No
Wisconsin	16,724	69.8	3%	34%	34%	Yes	Yes	Yes	No	Yes	Yes
Wyoming	10,092	16.5	21%	22%	60%	Yes	Yes	Yes	Yes	No	No

Source: EIA. *Historical State Data.* Web. Accessed October 19, 2023.

The five states selected exhibit both qualitative and quantitative similarities to Iowa for ratemaking procedures and utility metrics. The key quantitative metrics analyzed for comparison included the electric demand (TWh), installed capacity (MW), percentage of generation from wind energy, and percentage of load serving industrial customers (see Figure 122). LEI initially selected Minnesota, Missouri, and South Dakota as three of the preferred peer states for further review based on similarities in installed capacity, demand, and wind generation. Minnesota in particular was also selected based on the appearance of both an IRP requirement and PBR legislation—ratemaking procedures that were important to analyze for potential adoption in Iowa. In addition to these agreed upon states, LEI selected Kansas as the fourth state for review based on the similarities to Iowa in terms of wind generation, C&I loads, and regulation of water utilities. LEI also included Michigan as a state for review based on the recent legislative action taken towards reviewing IRP requirements and PBR mechanisms.

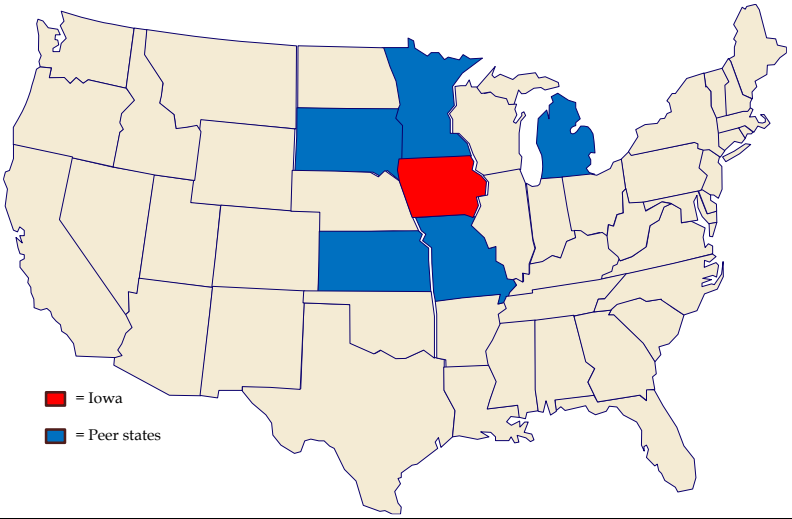
Figure 122. Quantitative metrics for comparison in peer states (2022)



Source: EIA. *Historical State Data.* Web. Accessed October 19, 2023.

In addition to the key electric sector metrics that are analyzed above, these five states provide a balance of ratemaking structures and mechanisms to review—some of which are utilized in Iowa (like revenue sharing), and others that are not (like the IRP and PBR). All five states have gas IOUs that are regulated by their respective regulators; Kansas and Missouri also have water IOUs that are regulated. Three of the five chosen states operate in both the MISO and SPP markets, similar to Iowa. Figure 123 highlights the final list of states selected for this comparative analysis to Iowa.

Figure 123. Peer states selected for comparative analysis



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Boston, MA 02111
www.londoneconomics.com

14 Appendix 6: Information on the ratemaking procedures and mechanisms of the five peer states

14.1 Kansas

14.1.1 Overview of regulatory body

The KCC is the primary state regulatory body that oversees public utilities in Kansas. The KCC's role is to establish rates that are just and reasonable while ensuring efficient and sufficient service from the utility. Kansas state law exempts all municipal utilities and cooperatively owned utilities from KCC jurisdiction. However, municipal systems and cooperatives can elect to be under KCC rate regulation. The KCC is composed of a chairperson and two other commissioners who are appointed by the governor of Kansas. The members can serve an unlimited number of four-year terms.[335]

14.1.2 Electric utilities under KCC authority

The largest electric rate-regulated utility in Kansas by total sales is Evergy Kansas South, Inc., while the largest electric rate-regulated utility by total customer count is Evergy Kansas Central, Inc.[336] The KCC has comprehensive regulatory authority to establish and regulate rates for the following electric rate-regulated utilities:

- Evergy (separated into Metro, Kansas South, and Kansas Central);[337]
- Empire District Electric Co. (part of Liberty Utilities); and
- Southern Pioneer Electric.[338]

14.1.3 Gas and water utilities under KCC authority

Per Kansas Administrative Regulations 82-1-231, Kansas' regulatory structure for gas and water utilities go through the same ratemaking process as electric utilities.[339]

The KCC establishes and regulates rates for the following rate-regulated gas utilities:

- Atmos Energy;
- Black Hills/Kansas Gas Utility Company, LLC;

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[335] Kansas Corporation Commission. *Mission Statement.* Web. Accessed November 2, 2023.

[336] Evergy Kansas Central covers parts of central Kansas and the areas surrounding and including the city of Topeka. Evergy Kansas South covers the Southeastern part of Kansas and the areas surrounding the city of Wichita.

[337] Evergy was formed from a merger of Westar Energy and Kansas City Power & Light in 2018.

[338] Kansas Office of Revisor of Statutes. *Overview of Public Utility Regulation in Kansas.* January 12, 2023.

[339] Kansas Legislature. *Kansas Administrative Regulations Section 82-1-231.* Web. Accessed October 19, 2023.

- Kansas Gas Service;
- Amarillo Natural Gas Co.;
- American Energies Gas Service;
- City of Eskridge;[340] and
- Texas, Kansas, Oklahoma Gas, LLC.[341]

The KCC establishes and regulates rates for the following water utilities:

- Barton Hills Water District;
- Green Acres Mobile Home Park;
- Suburban Water Company; and
- Towns Riverview.

14.1.4 General rate case

Rate-regulated utilities under the jurisdiction of the KCC must receive approval to change their rates or terms of services.

Per Kansas Administrative Regulations, electric, gas, and water utilities either file a rate application on their own initiative or if the KCC believes rates are not just and reasonable. The KCC interprets "just and reasonable rates" as rates fixed within a "zone of reasonableness" after the interests of all concerned parties are considered, where the parties include the utility's investors and present and future ratepayers, among others.[342] A rate-regulated utility in Kansas can initiate a rate case due to increased production costs from material changes in operations or facilities (such as changes in fuel prices or changes in the fuel types used in operations), as well as due to construction or upgrades of a utility's facilities.[343]

The KCC is allowed eight months from the filing date to make a determination on the rate case proceeding. In its review of the application, the KCC reviews the utility's books and records and has the authority to submit requests to the utility for additional data. KCC staff then provides a recommendation to the three-member KCC. Relevant stakeholders, such as consumer groups, may also file recommendations in the case. A public hearing is not required by law but is generally held in rate cases. Evidentiary hearings are also held in which expert witnesses testify and answer questions based on their written testimony submitted by the utility, KCC staff, and other stakeholders. The utility, commission staff, and other intervenor-parties to the rate case may also submit evidence to be considered by the Commission. The KCC will then review the

[340] City of Eskridge is a municipal gas system that elected to be under KCC regulations.

[341] Kansas Corporation Commission. *The utility ratemaking process.* Web. Accessed October 19, 2023.

[342] Kansas Corporation Commission. *KCC Ratemaking 101 and Update on Regional Competitiveness of Kansas Electric Rates.* March 1, 2022.

[343] Kansas Legislature. *Kansas Administrative Regulations Section 82-1-231.* Web. Accessed October 19, 2023.

application, the facts and data submitted, and the testimonies to inform its decision. The KCC announces its decision through a written order.[344]

The ratemaking process in Kansas starts with determining the utility's annual revenue requirements—done using the historic test year approach[345]—and taking five factors into consideration:

1. the cost of capital invested in assets;
2. the total investment, or "rate base";
3. the accumulated and on-going depreciation of plant(s) and equipment;
4. the company's reasonable and prudent operating expenses; and
5. income taxes.[346]

Figure 124. Rate cases in Kansas from 2016 to 2023

Kansas electric rate cases		
Utilities	**Decision date**	**Decision**
Evergy	4/8/2021	Rejected
Evergy	11/24/2020	Approved
Evergy	6/16/2020	Approved
Empire District	7/30/2019	Approved
Kansas City Power & Light	12/13/2018	Approved
Westar Energy	10/2/2018	Application withdrawn
Southern Pioneer Electric	7/31/2018	Approved
Southern Pioneer Electric	7/25/2017	Approved
Westar Energy	6/8/2017	Approved
Kansas City Power & Light	6/6/2017	Approved
Empire District	1/10/2017	Withdrawn
Kansas natural gas rate cases		
Utilities	**Decision date**	**Decision**
Black Hills Energy	10/29/2020	Approved
Kansas Gas Service	12/1/2020	Approved
Atmos Energy	2/24/2020	Approved
Kansas Gas Service	2/25/2019	Approved
Kansas Gas Service	11/29/2016	Approved

Source: 2016 to 2022 KCC Utilities and Common Carriers Reports.

[344] Ibid.

[345] Utilities are not explicitly disallowed from using the future test year approach. The KCC has stated that it "relies on historic test years and we rarely use forecasts." Source: Kansas Corporation Commission. *Rate Study of Kansas City Power & Light and Westar Energy for the years 2008 to 2018*. December 2018.

[346] Ibid.

The electric and gas rate cases conducted by the KCC over the past eight years can be seen in Figure 124. The last water rate case in Kansas was approved for Howison Heights, Inc., in 2014.

14.1.5 IRP requirements

Unlike Iowa, Kansas has an IRP requirement. The KCC requires electric and gas utilities to publish a 10 to 15-year resource plan every three years. The KCC stated that the purpose of the IRP is to present the utility's preferred portfolio of resources to customers and the KCC. Stakeholders are involved in public discussions on modeling assumptions and preliminary results. Utilities must include in the IRP their preferred generation resource plan as well as any contingency plans. The IRP also contains a scenario analysis that considers various EE, electric vehicle, and distributed generation assumptions. The IRP report also includes a "stress test" on major investments, evaluating the potential impact of critical uncertain factors such as significant changes in retail load growth, and current utility status and near-term expectations with load forecasts.[347] The process from preliminary review of IRP to approval by the KCC takes up to nine months.[348]

14.1.6 Predeterminations

Ratemaking in Kansas is like Iowa in that utilities can apply for predetermined principles and rates (similar to Iowa's advance ratemaking construct). In section 66-128q of the KCC statute, any electric utility can apply and request a predetermination on ratemaking principles and adjustment to the utility's rates to recover project development costs. This predetermination is limited to nuclear generation facilities, whereas advance ratemaking principles can be applied to a wider range of technologies in Iowa.[349]

14.1.7 Riders and trackers

Similar to Iowa, utilities in Kansas have access to a variety of riders and so-called "tracking mechanisms to recover costs" that are meant—as implied by the mechanism name—to recover certain incurred costs. Weather normalization adjustment clauses are also used by Atmos Energy and the Kansas Gas Service. Evergy Metro also has a rider in place to recover the costs associated with underground transmission and distribution infrastructure.

State law permits gas distribution companies in Kansas to utilize a gas system reliability surcharge mechanism to recover the costs associated with gas distribution replacement projects.[350] Under the law, the KCC has the authority to grant approval for a Gas System Reliability Surcharge, provided that the surcharge falls within the specified range of 0.5% to 10%

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[347] Kansas Corporation Commission. *Order adopting integrated resource plan and capital plan framework.* Accessed October 31, 2023.

[348] Evergy. *Evergy 2021 Integrated Resource Plan Overview.* April 2021.

[349] Kansas Legislature. *Article 1 – Power of State Corporation Commission.* Web. Accessed October 20, 2023.

[350] S&P Global. *RRA Regulatory Focus Adjustment Clauses.* November 12, 2019.

of revenues. This surcharge is designed to cover the costs of new infrastructure replacement that have not yet been incorporated into the existing rates.[351]

Furthermore, the KCC is authorized to approve cost recovery mechanisms for electric utilities that allow utilities to recover costs (in a timely manner) associated with energy-efficiency-related measures; these include lost revenues and certain costs associated with infrastructure replacement projects.[352]

14.2 Michigan

14.2.1 Overview of regulatory body

The Michigan PSC has the authority to establish and regulate rates for all electric and gas public utilities in Michigan. Gas utilities follow the same ratemaking process as electric utilities. Water utilities are regulated by the Michigan Department of Environment, Great Lakes, and Energy. The Michigan PSC has three commissioners—appointed by the governor—who serve six-year terms.[353] The Michigan PSC also has siting authority for electric transmission lines that grants Certificate of Public Convenience and Necessity for transmission lines that are greater than five miles in length. The application for a proposed transmission line is decided through a contested case with a one-year deadline for the Michigan PSC to either grant or deny the request.[354]

14.2.2 Electric utilities under Michigan PSC authority

The largest electric rate-regulated utility in Michigan by customer count and retail sales is DTE Electric Company. The electric utilities regulated by the Michigan PSC include:

- Consumers Energy Co.;
- Alpena Energy Co.;
- DTE Electric Company;
- Indiana Michigan Power Co.;
- Upper Michigan Energy Resources Corporation; and
- Upper Peninsula Power Company.

14.2.3 Gas utilities under Michigan PSC authority

The Michigan PSC also establishes and regulates the rates of gas utilities, which include:

- Consumers Energy Co.;
- Michigan Gas;

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[351] Senate Bill 414, "An Act concerning public utilities; relating to natural gas; enacting the gas safety and reliability policy act," was approved on April 12, 2006.

[352] Kansas Corporation Commission. *2022 Statute*. Web. Accessed November 2, 2023.

[353] Michigan Public Service Commission. *About the MPSC*. Web. Accessed November 2, 2023.

[354] Michigan Public Service Commission. *Facility Siting*. Web. Accessed November 4, 2023.

- DTE Gas Company; and
- SEMCO Energy.

14.2.4 General rate case

Electric and gas utilities must file a request to increase rates through the Michigan PSC's rate case process. Because water utilities fall under the authority of the Michigan Department of Environment, Great Lakes, and Energy, the Michigan PSC does not review water rate cases.[355]

The Michigan PSC may also initiate a rate case if there is evidence that a utility's rates are not "just and reasonable." To determine if rates are just and reasonable, the Michigan PSC considers the interests of relevant parties, evaluates if proposed rates are fair considering the cost of supplying electricity or gas, and whether consumers are being charged more or less than other consumers for the same service.[356] Though utilities have typically used the historic test year approach in determining the revenue requirement, they may also opt to use the future test year approach.

Unlike the process in Iowa and Kansas, an ALJ presides over the rate case proceedings, reviews the evidentiary record, and makes findings in the form of a proposal for decision on which the Michigan PSC then votes. The utility and intervenors (parties who may be affected by the proposed rate change) may file evidence for the ALJ to review. The utility is allowed to have expert testimonies presented during the rate case proceeding. Figure 125 shows the recent electric and gas rate cases in Michigan. There is no requirement for certain periodicity in rate cases in Michigan.[357]

Figure 125. Rate cases of Michigan from 2019 to 2023

Michigan electric rate cases		
Utilities	**Decision date**	**Decision**
Consumers Energy	1/19/2023	Approved
DTE Electric	11/18/2022	Approved
Consumers Energy	12/22/2021	Approved
Alpena Power Co.	12/22/2021	Approved
Consumers Energy	12/17/2020	Approved
DTE Electric	5/8/2020	Approved
Indiana Michigan Power	1/23/2020	Approved
DTE Electric	5/2/2019	Approved

[355] State of Michigan. *Who regulates my water?* Web. Accessed October 21, 2023.

[356] Michigan Legislature. *Transmission of Electricity Act 106 of 1909*. Web. Accessed November 4, 2023.

[357] Ibid.

Michigan gas rate cases		
Utilities	**Decision date**	**Decision**
Consumers Energy	8/30/2023	Approved
Michigan Gas	8/30/2023	Approved
Consumer Energy	7/7/2022	Approved
DTE Gas	12/9/2021	Approved
Michigan Gas	9/9/2021	Approved
Consumers Energy	9/10/2020	Approved

Source: Citizens Utility Board of Michigan. *Rate cases*. Web. Accessed October 21, 2023.

14.2.5 IRP requirements

Through sections 6t(3) and 6t(20) of Public Act 341, the Michigan PSC requires electric utilities to file an IRP that looks at anticipated customer electricity needs over the next five, ten, and fifteen years as well as the appropriate mix of resources once every five years. The utilities are not required to file at the same time or on a staggered basis.[358] The Act also requires the utilities to include in their IRPs:

- long-term forecast of sales, peak demand, and fuel prices under various "reasonable" scenarios;
- projected renewable energy purchased or produced;
- plan for eliminating energy waste;
- projected load management and DR savings and costs from utility programs;
- plan for compliance with environmental rules and regulations;
- an analysis of new or upgraded transmission options; and
- current utility generation portfolio data.

The Michigan PSC must then determine whether an electric utility's IRP provides a reasonable and prudent means of meeting energy and capacity needs. Stakeholders are involved in the process and provide their feedback on modeling assumptions and capacity targets. The Michigan PSC has 300 days to approve, deny, or recommend changes to the utility's IRP. Gas utilities are not required to file an IRP in Michigan.[359]

14.2.6 PBR

Michigan has implemented elements of PBR since 2009 with the introduction of its energy optimization program. The state's energy optimization program gave the Michigan PSC the ability to approve financial incentives for rate-regulated utilities when they exceed energy savings targets for a given year. According to Public Act 295, the financial incentive cannot exceed

[358] Michigan Public Service Commission. *Integrated resource plan filing*. Web. Accessed October 20, 2023.

[359] Michigan Public Service Commission. *Integrated Resource Planning Public Act 341.* Web. Accessed October 21, 2023.

15 percent of the utility's actual annual energy optimization spending or 25 percent of the customers net cost reductions because of the energy optimization plan.[360]

14.2.7 Riders and trackers

Riders and other recovery mechanisms are available for utilities to recover certain operating expenses and capital investments. Some of the available riders in Michigan allow the utilities to recover costs ranging from purchased power and fuel to recovery of unplanned expenditures associated with storm response.[361] DTE Gas utilizes an infrastructure recovery mechanism that enables it to earn a return on the costs associated with capital investment in the company's pipelines. SEMCO Energy has a rider that provides recovery relating to replacement of older portions of its pipeline systems. Power supply cost-recovery mechanisms are also available for Consumer Energy Co., DTE Electric Company, and the Upper Peninsula Power Company to recover transmission costs associated with the RTO.[362]

14.2.8 Retail choice

Per Public Act 141 of 2000, alternative electric suppliers may sell power supply at unregulated retail rates to customers participating in Michigan's Electric Customer Choice program. Retail choice for all customers of Michigan rate-regulated utilities took effect on January 1, 2002. Act 286 caps retail choice participation at ten percent of a rate-regulated utility's average weather-adjusted retail sales for the preceding year. As of December 2022, there were approximately 5,760 customers participating in the retail choice program, representing 2,138 MW of electric demand. Another 6,213 customers remain in the queue.[363]

14.3 Minnesota

14.3.1 Overview of regulatory body

The Minnesota PUC is required by law to ensure the reasonableness of rates charged by regulated electric and gas utilities. The Minnesota PUC does not regulate water utilities, which fall under the jurisdiction of the Minnesota Commerce Department.[364] The Minnesota PUC has the authority to regulate rates for all public utilities in the state except municipally owned utilities and member-

[360] Regulatory Assistance Project. *Performance-based Regulation Options*. August 2017.

[361] Brattle Group. *Performance Based Regulation Plans, Goals, Incentives and Alignment.* December 6, 2017.

[362] S&P Global. *RRA Regulatory Focus Adjustment Clauses.* November 12, 2019.

[363] Michigan Public Service Commission. *Status of Electric Competition in Michigan.* February 1, 2023.

[364] Minnesota Commerce Department. *Water Utilities.* Web. Accessed October 21, 2023.

regulated cooperatives. The Minnesota PUC has five members who are appointed by the governor for a six-year term.[365]

14.3.2 Electric utilities under Minnesota PUC authority

The largest electric rate-regulated utility both by customer count and retail sales is Northern States Power Company. The following electric rate-regulated utilities are under Minnesota PUC jurisdiction:

- CenterPoint Energy;
- Northern States Power Company (a subsidiary of Xcel Energy);
- Minnesota Power (a division of ALLETE, Inc.);
- Northwestern Wisconsin Electric;
- Otter Tail Power Company; and
- Minnesota Energy Resources Company.[366]

14.3.3 Gas utilities under Minnesota PUC authority

The following gas utilities are under Minnesota PUC jurisdiction:

- Xcel Energy Gas;
- Minnesota Energy Resources;
- Great Plains Natural Gas; and
- CenterPoint Energy Gas.

14.3.4 General rate case

Pursuant to Minnesota Statute 216B.16, an electric or gas utility must receive approval from the Minnesota PUC to increase its rates and charges. If the Minnesota PUC finds that a utility is charging rates that are not "just and reasonable," the Minnesota PUC can initiate a rate case. To determine if the rates are just and reasonable, the Minnesota PUC considers the public need for adequate, efficient, and reasonable service and the public utility's need for revenue that is sufficient to meet the cost of supplying its services.[367]

For utilities to initiate a rate case, the utility files an application with the Minnesota PUC based on a proposed deficiency in the revenues needed to adequately compensate the utility for costs it reasonably and prudently incurs to serve its customers. The impact on different customer classes (residential, commercial, and industrial) by the potential rate change is investigated over the course of the general rate case proceeding. The utility can also have experts provide witness testimony and accompanying exhibits. The utility applying for the rate cases and the parties who may be affected by the proposed rate change may submit and file evidence to be considered by

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[365] Minnesota Public Utilities Commission. *Commission members*. Web. Accessed November 2, 2023.

[366] Minnesota Public Utilities Commission. *General Rate Case*. Web. Accessed October 20, 2023.

[367] Minnesota Legislature. *216B.16 Rate Change; Procedure; Hearing*. Web. Accessed November 4, 2023.

the Commission. Pursuant to Minnesota Statute 216B.16, the Minnesota PUC has ten months from the date the utility files the application to issue a final decision through an order.[368]

Additionally, the Minnesota PUC allows utilities to propose MRPs as part of their rate requests. The Legislature enacted Minn. Stat. § 216B.16, subd. 19 in 2011, authorizing the Minnesota PUC to approve MRPs for rate-regulated utilities, and to establish the terms, conditions, and procedures for such plans. The MRPs will have a duration of up to three years. This term was extended to five years in 2015.

MRPs allow the ex-ante recovery of capital costs of new investments, which reduces regulatory burden by avoiding multiple general rate case filings through which the utility would—ex-post—request cost recovery for capital investments. The Minnesota PUC has declined to approve MRPs that rely on formula rates, as it noted that such rates reduce a utility's incentive to manage its costs. Instead, only MRPs that use fixed rates are approved by the Minnesota PUC, as the regulator believes fixed multi-year rates allow rates to adjust over time to reflect anticipated changes in a utility's circumstances.[369] Currently, only Xcel Energy implements an MRP. Xcel Energy applied for a 21% rate increase over three years (2022 – 2024) but was approved for only a 9.6% increase by the regulator.[370]

Utilities in Minnesota may use a historic or a future test year for determining its revenue requirements. General rate cases in Minnesota are conducted as contested case hearings and presided over by an ALJ. The process includes testimony filings, public hearings, evidentiary hearings, and legal brief filings. The ALJ reviews the evidentiary record and presents its findings in the form of the ALJ report. The Minnesota PUC then reviews the ALJ report, evidence submitted on record, and additional arguments by relevant parties, and uses this information to make a final determination on the rate request.[371] Figure 34 shows rate cases conducted by the Minnesota PUC for both electric and gas rate-regulated utilities with decision dates and the ultimate decision.

Figure 126. Rate cases in Minnesota from 2018 to 2023

Minnesota electric rate cases		
Utilities	**Decision date**	**Decision**
NW Wisconsin Electric	7/12/2023	Approved
Minnesota Power	1/28/2023	Approved
Otter Tail Power Co.	2/1/2022	Approved
NW Wisconsin Electric	10/1/2021	Approved
Minnesota Power	10/15/2020	Approved

[368] Minnesota Public Utilities Commission. *General Rate Case.* Web. Accessed October 20, 2023.

[369] Synapse Energy Economics, Inc. *Multi-year rate plans.* September 30, 2019.

[370] MPRNews. *Xcel Energy will ask state regulators to reconsider electric rate hike.* June 2, 2023.

[371] Ibid.

Minnesota natural gas rate cases		
Utilities	**Decision date**	**Decision**
Xcel Energy Gas	7/12/2023	Approved
CenterPoint Energy Gas	1/17/2023	Approved
Great Plains Natural Gas	10/26/2020	Approved
Minnesota Energy Resources	6/6/2019	Approved
CenterPoint Energy Gas	2/8/2018	Approved

Source: Minnesota Public Utilities Commission. *General rate case.* Web. Accessed October 20, 2023.

14.3.5 IRP requirements

Minnesota has an IRP requirement for certain electric and gas utilities under its purview. Specifically, Minnesota Statute section 216B.2422 requires electric utilities serving more than 10,000 customers with a capacity greater than 100 MWs to submit an IRP every two years for review and approval. The electric utility IRPs must provide information on the size, type, and timing of generation resources the utility plans on acquiring or constructing over the 15-year modeling horizon to satisfy its customer demand for electricity. IRPs must also include advance forecasts of load, transmission planning activities, and qualitative and quantitative discussions on why the IRP would be in the public interest.[372]

As of 2023, all gas utilities serving more than 10,000 customers likewise must file an IRP every two years for review and approval. Gas utility IRPs are required to provide an evaluation of supply and demand side resources that could be used to meet customer needs over a 15-year forecast period.[373]

The proposed IRPs are subject to public hearings and subsequently a decision by the Minnesota PUC, which either approves, denies, or recommends changes to the IRP. The Minnesota PUC reviews the IRPs based on their ability to:

- maintain or improve the adequacy and reliability of utility service;
- keep customer bills and utility rates as low as practicable;
- minimize adverse socioeconomic and environmental effects;
- enhance the utility's ability to respond to changes; and
- limit the risk of adverse effects on the utility from exogenous factors that the utility cannot control.[374]

Though not mandated in statute, Minnesota PUC also suggests that utilities align their IRPs with statewide energy targets. Minnesota's climate legislation establishes both a carbon-free energy standard and renewable energy standard. The carbon-free standard requires electric utilities to

[372] Minnesota Public Utilities Commission. *Electric resource planning.* Web. Accessed October 21, 2023.

[373] Minnesota Public Utilities Commission. *Gas Resource Planning*. Web. Accessed October 21, 2023.

[374] Minnesota Public Utilities Commission. *Electric resource planning.* Web. Accessed October 21, 2023.

achieve 80% carbon-free energy by 2030, 90% by 2035, and 100% by 2040. The renewable energy standard requires that 55% of the energy sold by electric utilities to Minnesota customers comes from renewable energy sources by 2035.[375]

The Minnesota PUC requires the utility to consult with stakeholders during the IRP process; stakeholders are given the opportunity to provide their input during the IRP development process and feedback during the IRP's evaluation (and specifically comment on whether the plan outlined in the IRP is in the public interest). Stakeholders also have the opportunity to propose alternative plans or adjustments to the plan during the review timeframe, the length of which is not specified in the legislation.

14.3.6 PBR and PIMs

PIMs—a component of PBR—are also applied to electric utility Xcel Energy, of which Northern States Power Company is a subsidiary. In 2015, Xcel Energy filed a proposed set of performance metrics addressing customer satisfaction, customer choice, environmental stewardship, and customer outage experience. Subsequently, the legislature extended the MRP duration to five years, granting the Minnesota PUC authority to enforce quantifiable performance measures in accordance with state energy policies.[376] In 2015, Xcel Energy proposed a new MRP, ultimately approved as a four-year plan covering the period from 2015 to 2019.

During Xcel Energy's 2015 general rate case proceeding, the Minnesota PUC initiated discussions on performance metrics and incentives for Xcel Energy's electric utility operations, involving input from stakeholders. The Commission cited Minn. Stat. § 216B.16, subd. 19, which empowers the Commission to require utilities proposing MRP to provide a "set of reasonable performance measures and incentives that are quantifiable, verifiable, and consistent with state energy policies." The statute also authorized the Commission to initiate proceedings to establish performance measures for utilities operating under MRP.

In September 2017, the Minnesota PUC opened a docket to identify and develop performance metrics for Xcel Energy's electric utility operations. From November 2017 to January 2018, there were a series of stakeholder meetings to solicit input on the development of Xcel's PIMs. Following a hearing held on November 1, 2018, the Minnesota PUC adopted a seven-step PIMs development process; as part of this process, the regulator, utilities, and stakeholders worked together to define the goals and desired outcomes of utility regulation.[377]

On January 9, 2019, after a comprehensive engagement with stakeholders, the Minnesota PUC issued an Order that laid out the goals and principles guiding the creation of PIMs for Xcel Energy's rate plan. This directive initiated a subsequent stakeholder process focused on

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[375] Environmental and Energy Study Institute. *Minnesota joins 20 other states in pursuit of 100 percent clean energy.* April 12, 2023.

[376] Minnesota Legislature. *216B.16 Rate Change; Procedure; Hearing.* Web. Accessed November 4, 2023.

[377] Great Plains Institute. *Performance-Based Regulation in Minnesota: A Decade of Progress.* June 9, 2020.

formulating performance metrics and PIMs. The outcome of this effort was the issuance of an Order on September 18, 2019, which established a range of metrics in various categories, including affordability, reliability, customer service quality, environmental performance, and the cost-effective alignment of generation and load. The metric methodologies, calculations, and reporting were then approved by the Minnesota PUC in an Order dated April 16, 2020.[378]

Xcel Energy filed its 2020 Annual Report on Performance Metrics and Incentives in April 2021, which included the 28 metrics approved by the regulator (some of which, for example, incentivize the utility to capture the full benefits of electrification).[379]

14.3.7 Riders

Electric and gas utilities in Minnesota use several riders or adjustment clauses. Some of these adjustment clauses and riders include transmission cost recovery, conservation improvement program adjustment, renewable development fund rider, state energy policy, renewable energy standard cost recovery, and mercury cost recovery. Iowa implements a few of these riders, but not all. An example of a rider that is not currently in Iowa is the state energy policy, which is a rider that recovers costs related to various energy policies approved by the Legislature.

Both Xcel Energy Inc. and Minnesota Energy Resource use Gas Utility Infrastructure Cost ("GUIC") riders to recover the costs associated with certain gas infrastructure upgrades.[380] Under the GUIC rider statute (Minn. Stat. § 216B.1635), gas utilities are allowed to petition the Minnesota PUC outside of a general rate case for a rider to recoup the revenue deficiency from projects not already included in utility rates that have been incurred for:

- "replacement of natural gas facilities located in the public right-of-way required by the construction or improvement of a highway, road, street, public building, or other public work by or on behalf of the US, the state of Minnesota, or a political subdivision; and

- replacement or modification of existing natural gas facilities, including surveys, assessments, reassessment, and other work necessary to determine the need for replacement or modification of existing infrastructure that is required by a federal or state agency." [381]

The other gas rider is the Natural Gas Extension Project Rider. This rider which is defined in Minn. Stat. § 216B.1638, allows a public utility to request approval from the Minnesota PUC for a rider, separate from a general rate case, to be applied to all the utility's customers, including

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[378] Minnesota Public Utilities Commission. *Docket No. E-002/CI-17-401.* Web. Accessed November 9, 2023.

[379] ESource. *Performance-based regulatory strategies to accelerate beneficial electrification.* March 30, 2022.

[380] S&P Global. *RRA Regulatory Focus Adjustment Clauses.* November 12, 2019.

[381] Minnesota Energy Resources Corporation. *Tariff and Rate Book: Gas Utility Infrastructure Cost Rider*. Effective August 26, 2019.

transport customers. This rider is designed to recover the revenue shortfall resulting from qualifying natural gas extension projects, which include natural gas service extensions to unserved or inadequately served areas where the cost would otherwise have been prohibitive under the Company's present rate and service extension policy.[382]

14.4 Missouri

14.4.1 Overview of regulatory body

The Missouri PSC regulates the electric, gas, and water rate-regulated utilities in Missouri. It is responsible for ensuring that Missourians receive safe and reliable utility services at just, reasonable, and affordable rates. The Missouri PSC has five commissioners who are appointed by the governor with no term limit.[383]

14.4.2 Electric utilities under Missouri PSC authority

The largest rate-regulated electric utility by customer count and retail sales in Missouri is Union Electric Co. Electric rate-regulated utilities regulated by the Missouri PSC include:

- Union Electric Co. (a subsidiary of Ameren Missouri);
- Empire District Electric Company (a subsidiary of Liberty Utilities); and
- Evergy Missouri (separated into Missouri Metro and Missouri West).[384]

14.4.3 Gas utilities under Missouri PSC authority

Gas rate-regulated utilities regulated by the Missouri PSC include:

- Ameren Missouri;
- Empire District Gas Company;
- Liberty Utilities;
- Spire Missouri, Inc.; and
- Summit Natural Gas of Missouri.[385]

14.4.4 Water utilities under Missouri PSC authority

Rate-regulated water utilities regulated by the Missouri PSC include:

- MAWC;
- Liberty Utilities; and

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[382] Ibid.

[383] Missouri Public Service Commission. *Commissioners.* Web. Accessed November 2, 2023.

[384] Missouri Public Service Commission. *Regulated electric companies.* Web. Accessed October 20, 2023.

[385] Missouri Public Service Commission. *A snapshot of what we do.* Web. Accessed October 21, 2023.

- Confluence Rivers Utility Operating Company.[386]

14.4.5 General rate case

Per legislation, the Missouri PSC has eleven months from the date a rate case is filed to decide on the rate case application. Otherwise, the utility request is granted without needing Missouri PSC approval.[387] Prior to any hearings, Missouri PSC staff will conduct an independent on-site review of the utility's books and records. To determine the revenue requirement, the Missouri PSC considers four factors:

- the utility's reasonable and prudent operating expense;
- the total investment on which a return may be earned;
- the accumulated and on-going depreciation of plant and equipment; and
- the ROR the utility has an opportunity to earn.[388]

For determining the revenue requirement, a utility is allowed to use either a historic or a future test year. Generally, the historic test year approach has been used.[389] In most cases, the Missouri PSC will hold local public hearings to give the public an opportunity to provide feedback. If an agreement in a rate case cannot be reached by the parties, formal evidentiary hearings are held. The utility may have an attorney and expert witnesses present to testify and answer questions. In fact, the utility has the burden of providing all evidence in rate cases. The five commissioners of the Missouri PSC will read the written testimony, review exhibits, listen-in to cross-examination, and weigh all evidence to make a final decision.[390] Figure 127 shows recent rate cases for all rate-regulated utilities in Missouri.

Figure 127. Rate cases in Missouri from 2017 to 2023

Missouri electric rate cases		
Utilities	**Decision date**	**Decision**
Empire District Electric Company	3/26/2021	Approved
Empire District Electric Company	5/29/2019	Approved
Evergy Missouri West	11/22/2017	Approved
Evergy Missouri Metro	11/22/2017	Approved

[386] Ibid.

[387] USAID. *Regulatory Overview of Missouri PSC.* Web. June 2010.

[388] Missouri Public Service Commission. *Ratemaking process.* Web. Accessed October 21, 2023.

[389] Missouri Public Service Commission. *Response to motion to establish future test year and test year recommendation.* July 5, 2017.

[390] Ibid.

Missouri natural gas rate cases		
Utilities	**Decision date**	**Decision**
Spire Missouri	1/5/2022	Approved
Spire Missouri	10/8/2020	Approved
Liberty Utilities	7/14/2017	Approved
Missouri water rate cases		
Utilities	**Decision date**	**Decision**
Missouri-American Water Company	4/29/2022	Approved
Missouri-American Water Company	5/1/2020	Approved
Confluence Rivers Utility Operating Company	8/29/2019	Approved
Liberty Utilities	12/15/2017	Approved

Source: Missouri PSC.

14.4.6 IRP requirements

The Missouri PSC requires rate-regulated electric and gas utilities to submit once every three years an IRP that provides the utility's energy planning horizon for the next twenty years. Per electric resource planning rules,[391] the IRP includes analyses on environmental impacts, resource adequacy and reliability of generation and transmission, level of average bills, and degree of rate volatility for utility service. The IRP analysis also accounts for EE and DR programs, electrification plans, plans to replace aging distribution infrastructure, and the development of smart grid. The Missouri PSC is responsible for providing oversight during the IRP process and ultimately approves, denies, or recommends adjustments to the IRP. Stakeholders are involved in the process, reviewing the modeling assumptions and providing comments on the adequacy of the IRPs.[392]

Missouri also requires rate-regulated utilities to file both a report demonstrating how the utilities complied with the renewable energy standard in the previous calendar year and a plan to cover their intended compliance measures for the current year plus the following two years. Missouri's RPS requires rate-regulated utilities to use renewable energy technologies[393] to meet 15% of their yearly sales starting in 2021—a factor that is taken into consideration in all the filings prepared by the utilities for submission to the regulator.[394]

[391] Rules of Department of Economic Development. *Division 240 - Public Service Commission Chapter 22 - Electric Utility Resource Planning*.

[392] Missouri Public Service Commission. *Integrated Resource Planning*. Web. Accessed October 30, 2023.

[393] Eligible technologies include solar thermal, solar PVs, wind, biogas, small hydropower, biomass, and fuel cells using hydrogen.

[394] DSIRE. *Missouri renewable energy and energy efficiency*. Web. Accessed October 22, 2023.

14.4.7 Riders and trackers

Evergy Metro, Evergy Missouri West, and Union Electric use the rider mechanism to recover costs associated with certain government-mandated investments. For example, they have a Renewable Energy Standard Rate Adjustment Mechanism to account for costs and benefits experienced to comply with Renewable Energy Standard, over what is already included in the base rates.

Similar to the utilities in Minnesota, Liberty Utilities, Spire Missouri, Inc., and Union Electric Co. utilize an infrastructure system replacement surcharge to recover costs associated with certain gas distribution system replacement projects. The Missouri legislature established the Infrastructure System Replacement Surcharge in Chapter 393, which states: "…beginning August 28, 2003, a gas corporation providing gas service may file a petition and proposed rate schedules with the commission to establish or change ISRS rate schedules that will allow for the adjustment of the gas corporation's rates and charges to provide for the recovery of costs for eligible infrastructure system replacements."[395]

14.5 South Dakota

14.5.1 Overview of regulatory body

The South Dakota PUC has regulatory authority, including ratemaking authority, over electric and gas rate-regulated utilities. It is responsible for ensuring that electric and gas rate-regulated utilities provide safe and reliable service at fair and reasonable rates. The South Dakota PUC has three elected members who serve staggered, six-year terms.[396]

Public water utilities—which provide water services to the majority of South Dakota's residents—are not overseen by the state regulator. Per South Dakota Codified Laws 9-39-23, municipal utility boards—not the South Dakota PUC—set the rates, fees, and charges for services the water utilities provide.[397]

14.5.2 Electric utilities under South Dakota PUC authority

Like the KCC, the South Dakota PUC does not have ratemaking authority over electric cooperatives or municipal electrical organizations. The largest electric rate-regulated utility by customer count and retail sales in South Dakota is the Northern States Power Company. The electric utilities under South Dakota PUC jurisdiction are:

- Black Hills;
- MidAmerican Energy;
- Montana-Dakota Utilities Co.;

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[395] Missouri Revisor of Statutes. "Chapter 393.1012. Rate Schedules, Procedures to Establish or Change." August 28, 2003.

[396] South Dakota Public Utilities Commission. *About us*. Web. Accessed November 2, 2023.

[397] UNC Environmental Finance Center. *South Dakota.* Web. Accessed October 23, 2023.

- NorthWestern Energy;
- Otter Tail Power Co.; and
- Northern States Power Company (as a subsidiary of Xcel Energy).

14.5.3 Gas utilities under South Dakota PUC authority

The gas utilities under South Dakota PUC jurisdiction are:

- Montana-Dakota Utilities Co.;
- MidAmerican Energy; and
- NorthWestern Energy.[398]

14.5.4 General rate case

If a utility wishes to modify its rates, it begins the rate case process by filing an application with the South Dakota PUC. The South Dakota PUC can also initiate a rate case if it finds a utility to be charging rates that are not "just and reasonable." To determine if rates are just and reasonable, the South Dakota PUC considers the public need for adequate, efficient, and reasonable service and the utility's need to collect revenues that enable it to meet its total current cost of service.[399]

During the rate case, the utility is allowed to have an attorney present and expert witnesses for testimony and to answer questions. The utility and intervenors (parties who may be affected by the proposed rate change, including Commission staff) may file evidence for the commission to review. The regulator has six months to investigate and come to a determination on the utility's rate case request. Figure 128 shows South Dakota's recent rate cases for electric and gas rate-regulated utilities.

Figure 128. South Dakota utility rate cases from 2016 to 2023

South Dakota electric rate cases		
Utilities	**Decision date**	**Decision**
Northern States Power Company	7/6/2023	Approved
Otter Tail Company	11/4/2022	Approved
Black Hills Power	2/7/2017	Approved
Montana-Dakota Utilities	6/15/2016	Approved
South Dakota gas rate cases		
Utilities	**Decision date**	**Decision**
MidAmerican Energy Company	3/31/2023	Approved
South Dakota Intrastate Pipeline Company	7/28/2021	Approved

Source: South Dakota PUC.

[398] South Dakota Public Utilities Commission. *South Dakota Utility Providers.* Web. Accessed October 23, 2023.

[399] South Dakota Legislature. *Chapter 49-34A Gas and Electric Utilities Regulation.* Web. Accessed November 4, 2023; South Dakota Public Utilities Commission. *Electric Rate Increase Requests.* Web. Accessed October 23, 2023.

14.5.5 IRP requirements

South Dakota requires electric utilities to submit a 10-year plan every two years. This long-term plan[400] provides a roadmap to inform the public of how the utility plans to meet customer load for the coming decade. It considers demand-side management programs such as EE and DR measures, wind and solar resource potential, and renewable targets for the near future. Stakeholders are involved in the process, providing comments and feedback on solutions for potential problems identified for the future. The South Dakota PUC decides to approve, deny, or recommend adjustments to the plan, but the legislation does not provide a length for the timeframe of this review.[401]

14.5.6 Riders

Northern States Power Company has a transmission cost recovery rider that recovers the cost of new and modified transmission facilities as well as an infrastructure rider that recovers the costs and expenses of new generation and distribution projects. Otter Tail Company has a rider in place that recovers the costs associated with its investment in EE programs. Montana Dakota Utilities has a rider that allows the electric utility to recover the costs incurred from complying with federal and state environmental mandates. Costs may include capital costs and operating expenses incurred for environmental improvements to existing generating facilities. Montana Dakota Utilities also has a transmission cost recovery rider in which the utility is permitted to recover the net balance of capital and operating costs of transmission.[402]

14.5.7 Revenue sharing

Black Hills credits ratepayers a portion of margins it receives from renewable energy credit sales and power marketing income through its fuel and purchased power adjustment clause. Northern States Power Company also has wholesale power margin sharing provisions and allocates a share of any such margins and a portion of revenues generated from renewable energy credit sales with ratepayers through its fuel clause. Otter Tail Company has a mechanism in place that allows the utility to share back revenues associated with new load growth and to recover costs associated with new generation facilities.[403]

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[400] This resource planning filing is referred to as the 10-year plan—not an IRP—by South Dakota legislation. The requirements of this long-term planning filing mirror those required in an IRP.

[401] South Dakota Public Utilities Commission. *Electric utility 10-year plans.* Web. Accessed October 23, 2023.

[402] S&P Global. *RRA Regulatory Focus Adjustment Clauses.* November 12, 2019.

[403] Ibid.

15 Appendix 7: Review of electric rates in Iowa and peer states by sector

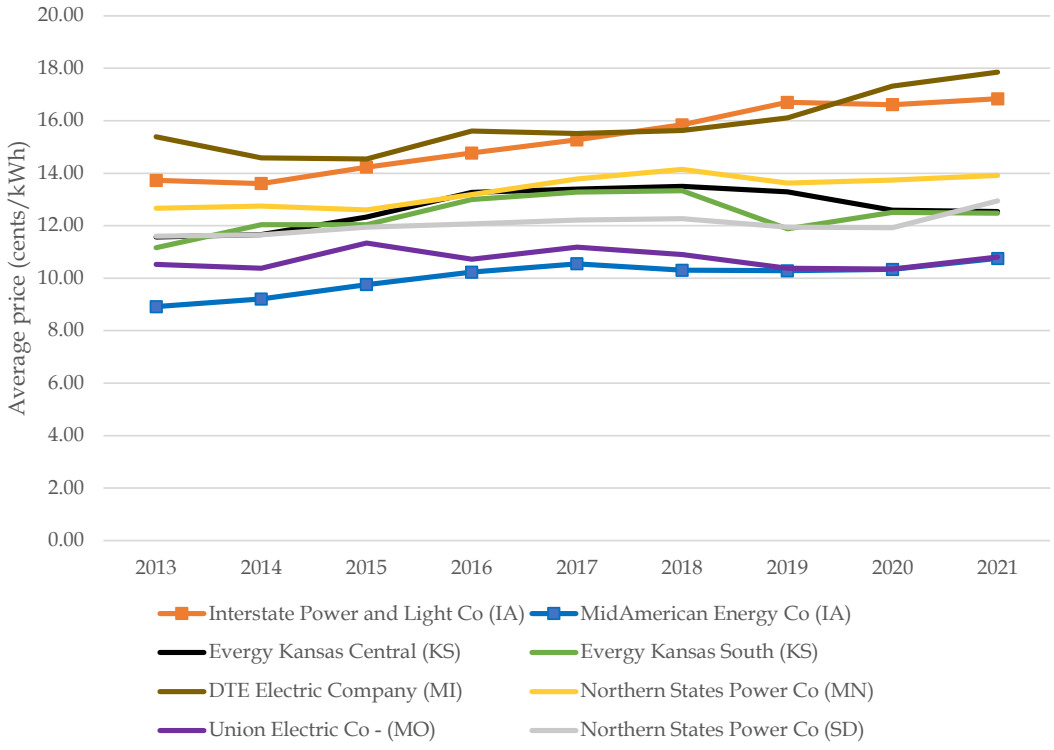
15.1 Residential electric rates

IPL has higher residential rates than the comparable averages of the peer states' utilities, while MidAmerican has lower rates since 2013. Residential electric rates for the six peer utilities increased 1.9% on average per year from 2013 to 2022. Comparably, IPL's residential rates increased 2.9% per year and MidAmerican's increased 2.4% per year over the same period, as shown in Figure 129.

One explanation for the higher residential rates of DTE Electric can be attributed to its high operating expenses as shown in Figure 73 above. The ratio of rate base to operating expenses is only 1.17:1, whereas the other peer utilities average a ratio of 3.29:1. This low ratio for DTE Electric shows that its revenue requirement and ultimately electric rates include a much higher percentage of operating expenses than the other peer utilities. For comparison to Iowa, the ratios for IPL and MidAmerican are 4.72:1 and 4.81:1, respectively. Also, as mentioned earlier, DTE Electric has the highest revenue requirement per customer among the utilities reviewed, which is a key factor contributing to their higher electric rates compared to the utilities under review.

On the other hand, Union Electric Co's lower rates can be attributed to the type of customers that it serves. Its service territory includes St. Louis, MO, so it can be expected that a large percentage of Union Electric Co.'s customer base includes this urban population. This would contribute to Union Electric Co. being able to take advantage of economies of scale regarding the electric infrastructure required to service a large percentage of its customers within a relatively small area.

Figure 129. Residential rates for MidAmerican, IPL, and major rate-regulated utilities in peer states (cents/kWh)

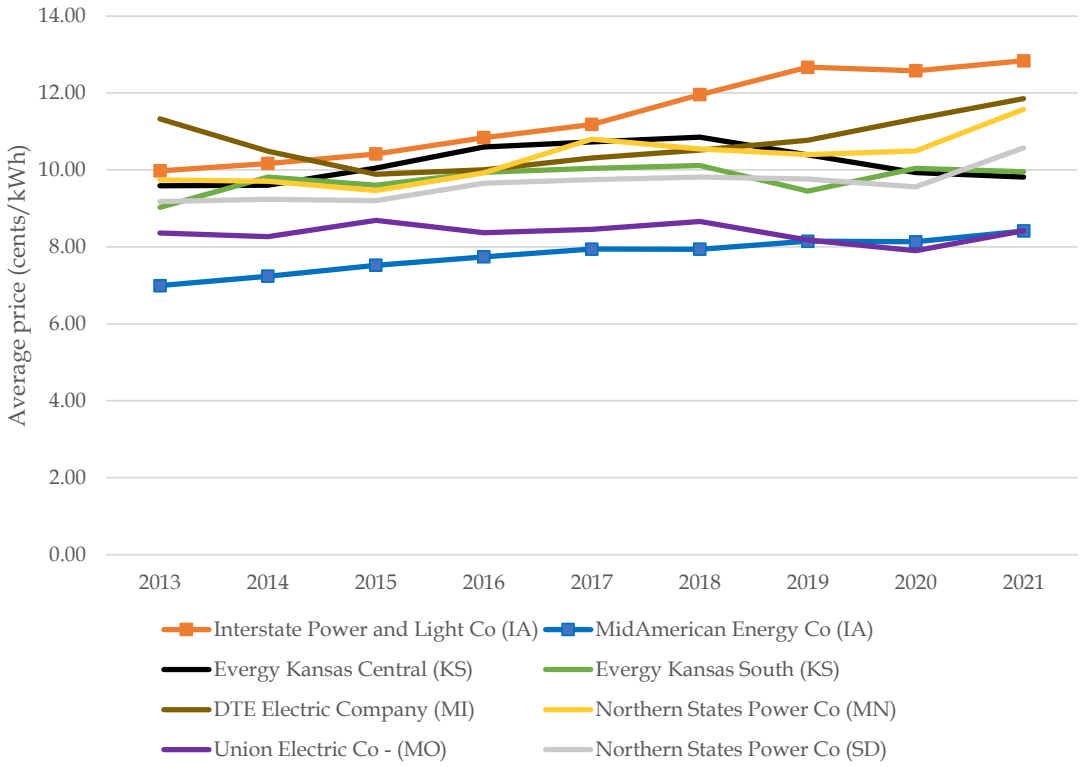


Source: EIA.

15.2 Commercial electric rates

The same pattern seen for residential rates can also be seen for commercial rates, as shown in Figure 130. IPL had the highest rates compared to the selected peers since 2015, while MidAmerican has consistently offered low commercial rates for electricity relative to the peer utilities since 2013, which may be due to the fact that MidAmerican had the lowest operating expenses per customer from 2017 to 2022 out of the rate-regulated utilities studied. Commercial electric rates for the six peer utilities increased on average 1.9% per year from 2013 to 2022. Comparably, IPL's commercial electric rates increased 3.4% per year while MidAmerican's commercial electric rates increased 2.5% per year. Union Electric Co. continues to have low commercial rates relative to the peer utilities along with MidAmerican. Again, the type of customers served may have contributed to the lower commercial electric rates for Union Electric Co.

Figure 130. Commercial rates for MidAmerican, IPL, and major rate-regulated utilities in peer states (cents/kWh)

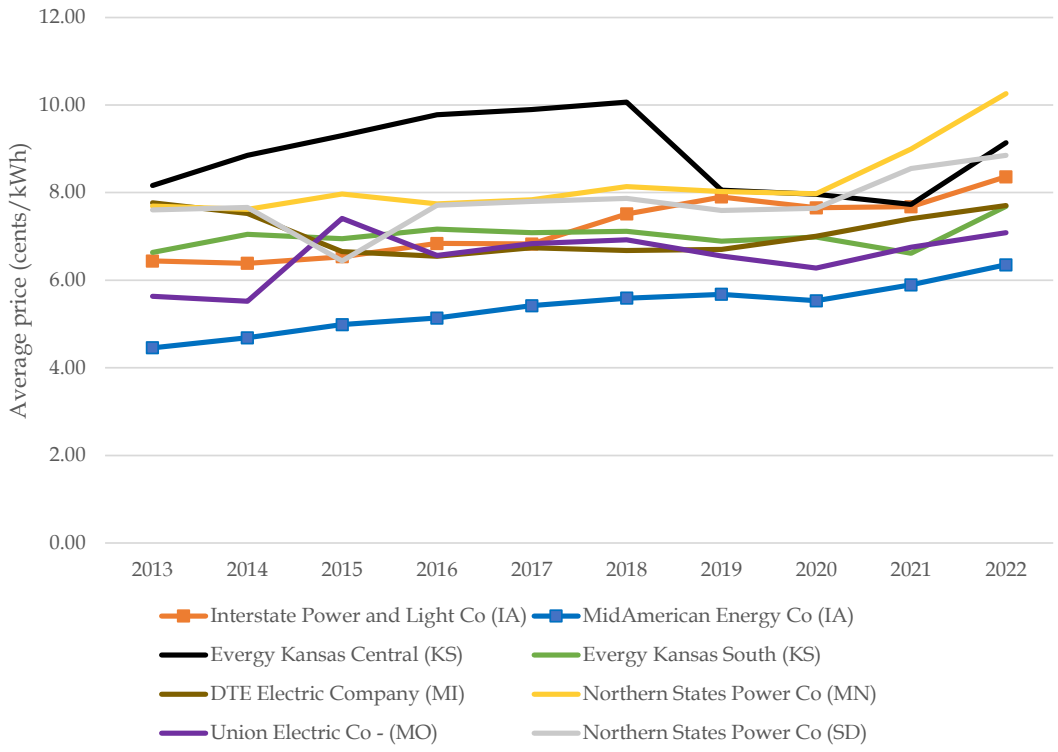


Source: EIA.

15.3 Industrial electric rates

Figure 131 shows that MidAmerican offers the lowest industrial rates among the peer utilities, while IPL's industrial rates trend around the average of the peer utilities. Industrial electric rates for the six peer utilities increased on average 1.7% per year from 2013 to 2022. Comparably, IPL's rates increased 2.9% per year, while MidAmerican's rates increased 4% per year. MidAmerican consistently had lower industrial rates than any of the other selected utilities, which also may be due to the having lowest operating expenses per customer (similar to its commercial rates). IPL's industrial rates trend much closer to average than its residential and commercial rates. This may indicate that IPL's customer base includes a larger percentage of industrial customers than the peer utilities—which may allow IPL to have lower average rates due to the higher available loads from its customers.

Figure 131. Industrial rates for MidAmerican, IPL, and major rate-regulated utilities in peer states (cents/kWh)



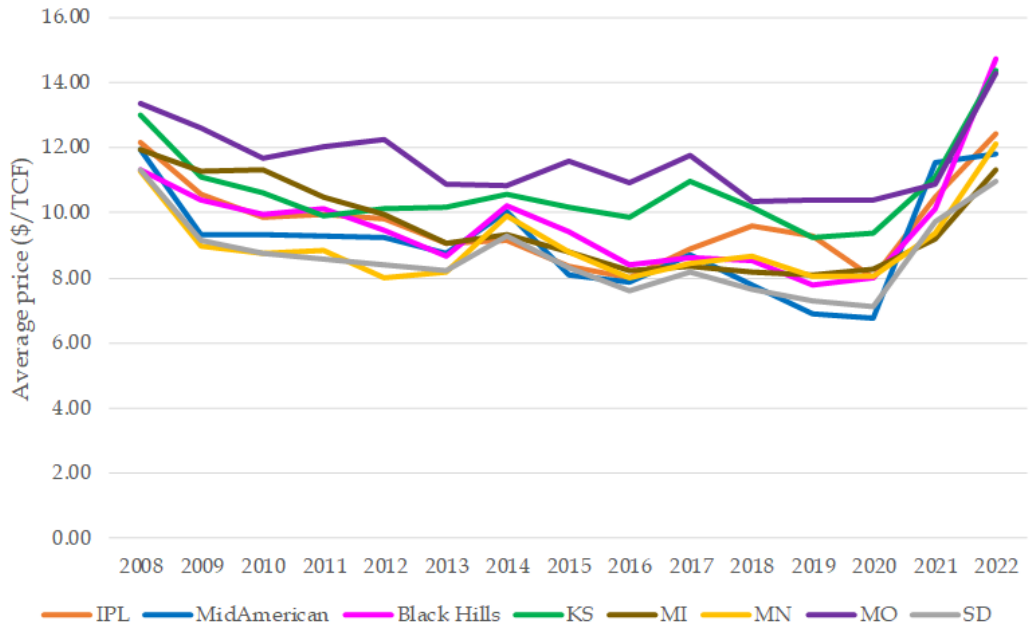
Source: EIA.

16 Appendix 8: Review of gas rates in Iowa and peer states by sector

16.1 Residential gas rates

IPL residential gas rates overall have increased by an average of 0.16% per year between 2008 and 2022, while MidAmerican's residential rates overall have decreased by a compound annual growth rate ("CAGR") of 0.1% per year since 2008. Black Hills' residential gas rates have increased by a CAGR of 1.9% per year. Over the same time frame, as a whole, gas rates in Iowa and the five peer states increased by 0.23% per year, yet they all follow the same general industry trend. Figure 132 shows this overarching trend; noticeably, rates decrease in 2020 but increase again thereafter. The increase in gas rates in 2021 and 2022 is mostly attributed to the external events that increased fuel prices.

Figure 132. Residential gas rates of Iowa utilities and peer states ($/TCF)



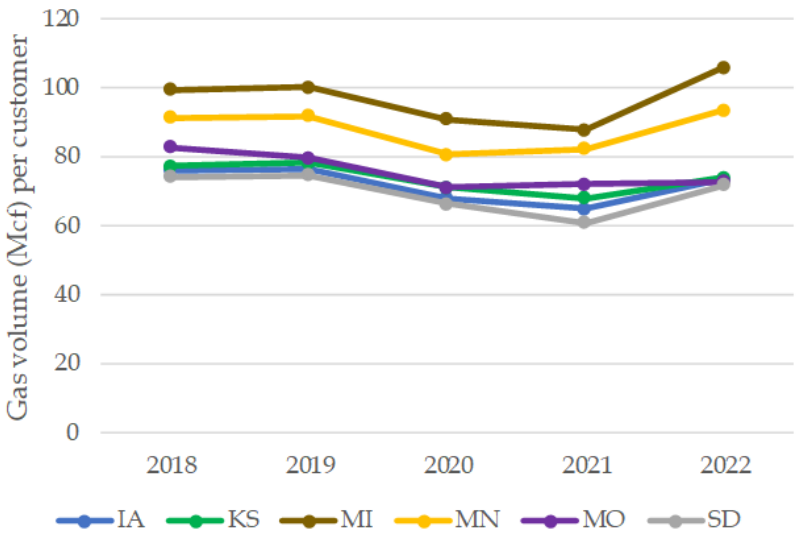
Source: EIA, IUB.

Michigan has had the highest residential gas volume per customer over the last five years, as shown in Figure 133, due in part to Michigan's low residential gas rates (even when fuel prices increased in 2021-2022). The residential gas volume per customer metrics for Iowa, Kansas, Missouri, and South Dakota do not display a similar consistent trend.

The bundled revenues per residential customer also contribute to the difference in rates between the studied states. Despite having low residential gas volumes per customer (see Figure 133), Missouri and Kansas have higher revenues per customer than Iowa and Missouri (see Figure 134)—two states that also have low gas volumes per residential customer. Higher revenues per customer are likely a result of higher rates, as utilities in these states are able to recover additional

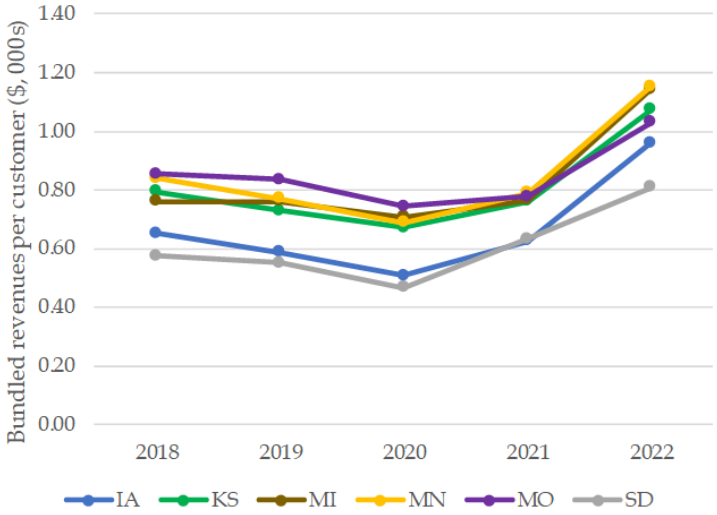
costs from their low volumes through higher rates. This logic applies to Iowa utilities, which display both low residential gas revenues and volume per customer relative to the peer states.

Figure 133. Residential gas volume per customer in Iowa and peer states (Mcf)



Source: S&P Global.

Figure 134. Residential gas bundled revenues per customer in Iowa and peer states ($/customer)



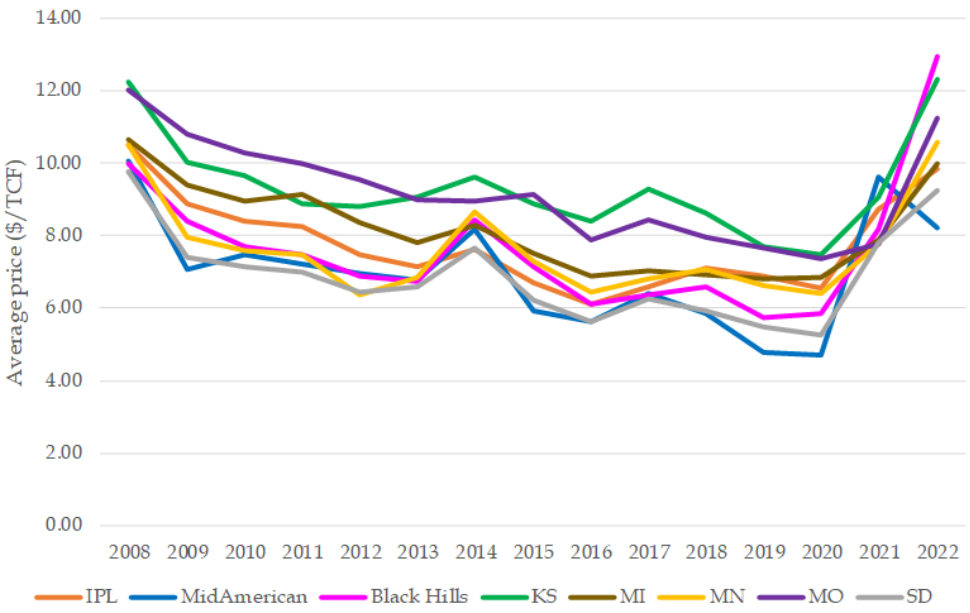
Source: S&P Global.

16.2 Commercial gas rates

The increase in commercial gas rates from 2008 to 2022 was comparatively more moderate as compared to residential gas rates, as shown in Figure 135. IPL's commercial gas rates decreased by a CAGR of 0.48% per year from 2008 to 2022 while MidAmerican's rates decreased by 1.43%

per year. In contrast, Black Hills' commercial gas rates increased by 1.87% per year over this same period. The commercial gas rates in Iowa and the five peer states as a whole decreased by a CAGR of 0.16% despite the price increases seen in 2021 and 2022.

Figure 135. Commercial gas rates of IPL, MidAmerican, and peer rate-regulated utilities ($/TCF)

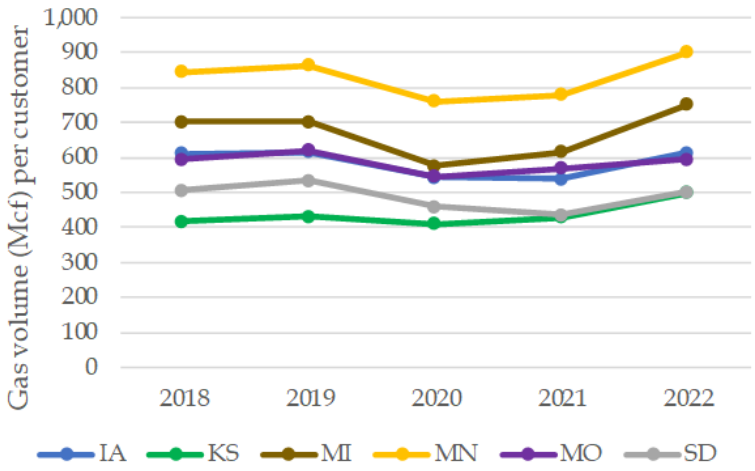


Source: EIA, IUB.

Minnesota's commercial gas volume per customer (shown in Figure 136) stands out from that of the other states studied (which has implications on total bundled revenues). Minnesota also has the highest commercial volume per customer and average rates; in contrast, Kansas has the lowest volume per customer and nearly the highest rates amongst the peer states. Iowa ranks in the middle of these states in terms of commercial gas volume per customer, which indicates that the low commercial rates are justified based on its commercial volume per customer.

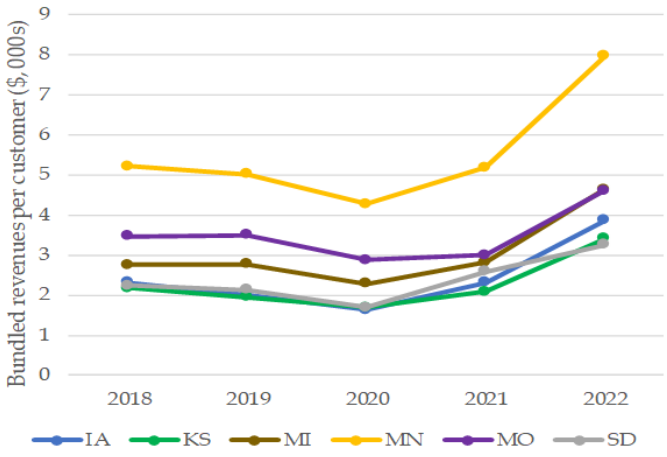
Minnesota also stands out compared to the remaining peer states when evaluated on the basis of bundled revenues per customer, as seen in Figure 137. It is a clear outlier, at around $8,000 in revenues per customer when compared to the range of $3,000 to $5,000 per customer for the other peer states. Iowa's commercial rates—from the perspectives of bundled revenues and volume per customer—trend similarly to those of the peer states. Bundled revenues per customer were some of the lowest compared to the peer group in the period 2018-2020; they have risen since then, and notably no longer trend towards the lowest rates within the peer group.

Figure 136. Commercial gas volume per customer in Iowa and peer states (2018 – 2022)



Source: S&P Global.

Figure 137. Commercial gas bundled revenues per customer in Iowa and peer states ($/customer)

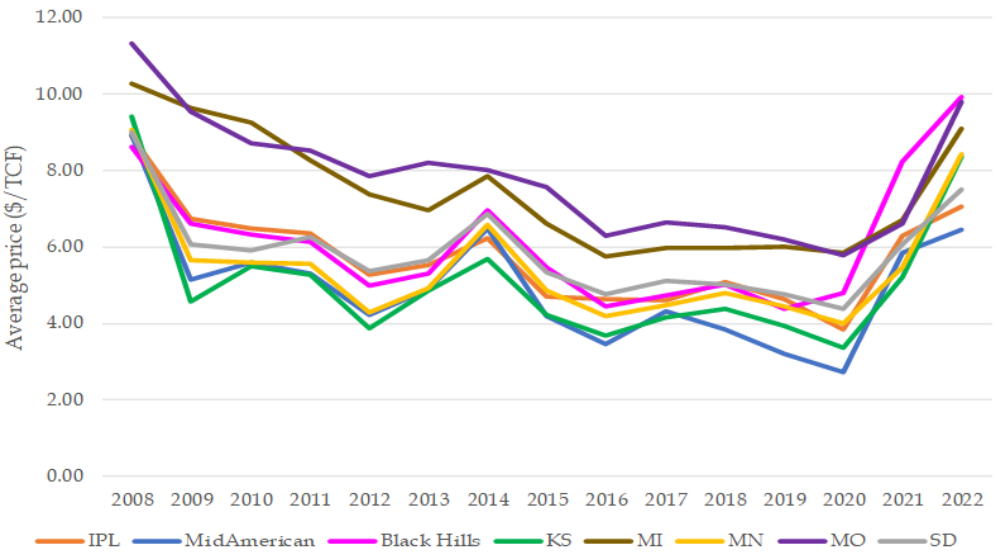


Source: S&P Global.

16.3 Industrial gas rates

Between 2008 and 2022, industrial gas rates overall saw a noticeable decline compared to residential gas rates. In that timeframe, the industrial gas rates of both IPL and MidAmerican decreased by a CAGR of 1.64% and 2.29% per year, respectively; the industrial gas rate for Black Hills increased by 1% per year. Meanwhile, the industrial gas rates of Iowa and the five other states as a whole decreased by a CAGR of 0.93%. The five peer states all saw decreases in industrial gas rates from 2008 to 2022. Like residential and commercial gas rates, industrial gas rates also had sharp increases in 2021 and 2022, as detailed in Figure 138. It should be noted, though, that the overall dollar per thousand cubic feet ("$/TCF") for industrial rates is lower than that seen for both the residential and commercial rates across all states.

Figure 138. Industrial gas rates of IPL, MidAmerican, and peer rate-regulated utilities ($/TCF)

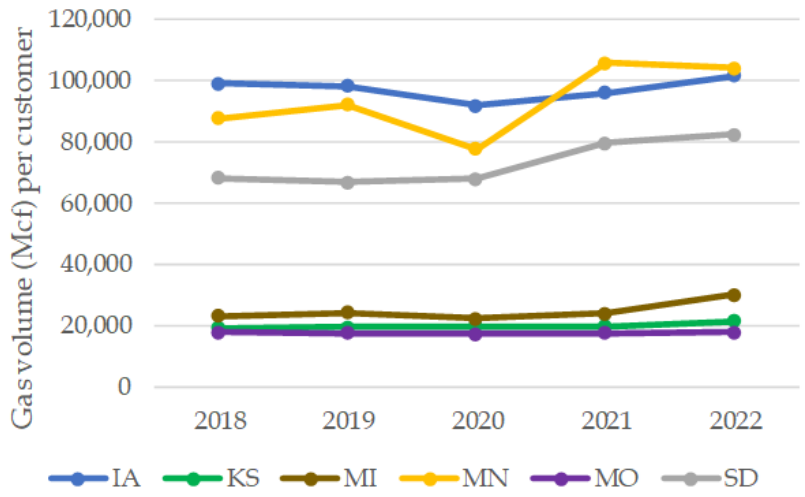


Source: EIA, IUB.

The difference between the upper and lower tiers of states in terms of industrial gas volume per customer is provided in Figure 139. In the higher tier, Iowa, Minnesota, and South Dakota have the highest industrial gas volumes per customer, averaging between 80,000 and just over 100,000 Mcf per customer. In the lower tier, the industrial gas volume per customer in Kansas, Michigan, and Missouri averages around 20,000 Mcf per customer over this period. For Michigan and Missouri, the low volumes per customer align with the high rates seen from 2008 to 2022 for industrial consumers. Over this same period, Iowa utilities had average to below average industrial rates, which aligns with the increased volume per customer seen over the last five years.

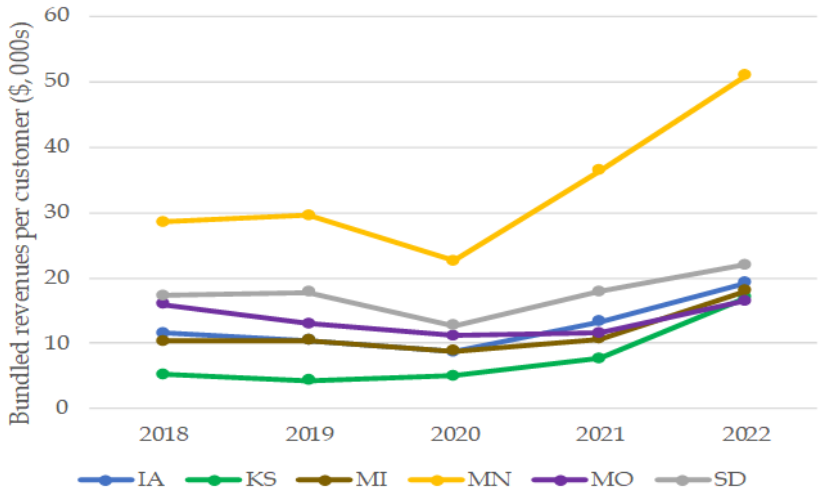
Similar to the commercial bundled revenues per customer, Minnesota has the highest industrial bundled revenues per customer, as seen in Figure 140. The other states, including Iowa, average a much lower amount than Minnesota over this same period. Despite having higher industrial gas volumes per customer than the remaining three states, Iowa and South Dakota averaged similar bundled revenues per customer. This indicates that Minnesota is more of an outlier likely due to the significant industrial rate increases in 2021 and 2022. Iowa's bundled revenues per customer falls within the average bundled revenues per customer of the peer states.

Figure 139. Industrial gas volume per customer in Iowa and peer states (Mcf)



Source: S&P Global.

Figure 140. Industrial gas bundled revenues per customer in Iowa and peer states ($/customer)



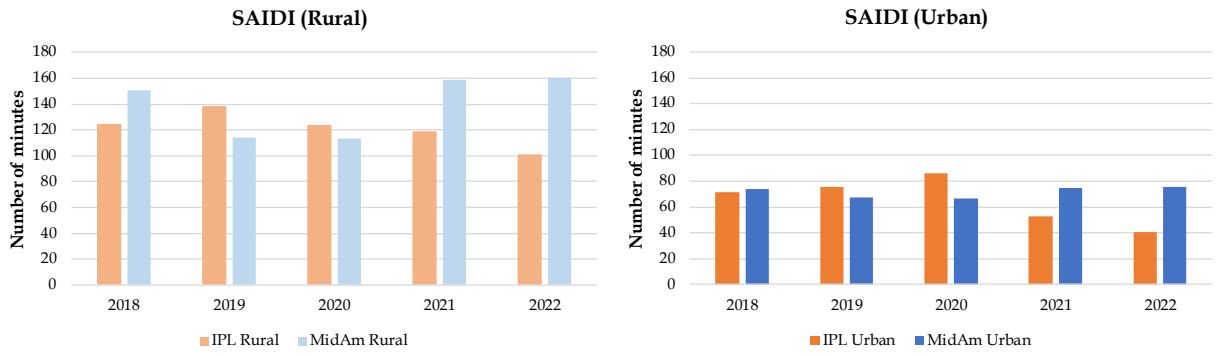
Source: S&P Global.

17 Appendix 9: Reliability metrics in rural and urban areas within Iowa

Between 2018 and 2022, IPL's SAIDI in rural areas displayed an initial increase, followed by a steady decline, signaling a clear trend towards improved reliability. In contrast, MidAmerican's rural SAIDI showed more fluctuations, ending with a higher average, which points to potential areas for enhancement in their service stability.

In urban settings, IPL's SAIDI improved significantly after a temporary uptick, whereas MidAmerican's urban reliability remained consistent, with only slight changes throughout the years. Overall, both companies have demonstrated a commitment to reliability, with IPL showing a more pronounced positive change across both rural and urban landscapes.

Figure 141. IPL and MidAmerican's rural and urban SAIDI without major interruptions



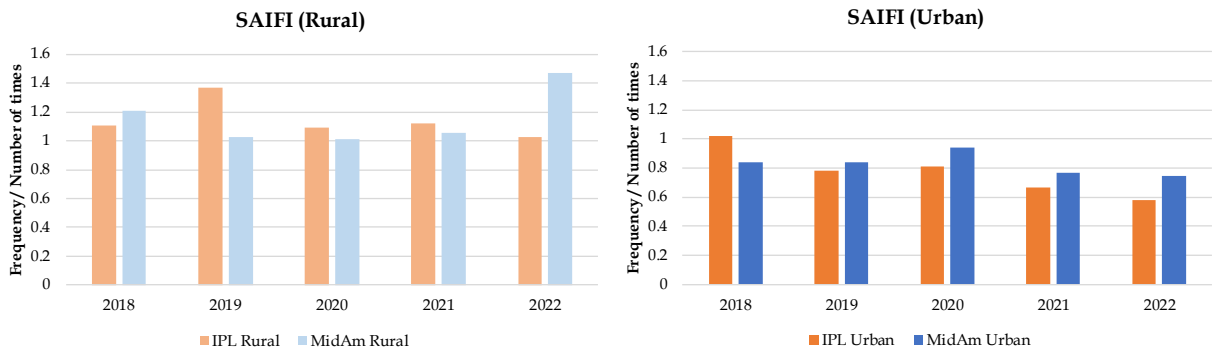
Source: IPL's 2022 annual reliability report & MidAmerican's 2022 Iowa annual electric reliability and service quality report.

In the same timeframe, IPL's rural SAIFI rose in 2019 but has since shown an overall downward trend, suggesting an improvement in the frequency of service interruptions. MidAmerican's rural SAIFI, on the other hand, fluctuated with a noticeable increase in 2022, pushing their average slightly higher than IPL's, which may indicate a need for reliability improvements.

In urban areas, IPL's SAIFI has consistently decreased, with the lowest value in 2022, reflecting a clear enhancement in urban service reliability. MidAmerican's urban SAIFI also improved, albeit with less fluctuation, maintaining a relatively stable trend over the years.

Overall, IPL's trends in both rural and urban SAIFI demonstrate an enhanced reliability in service provision, with particularly strong progress in urban areas. MidAmerican's performance shows stability in urban settings, although the recent rise in rural SAIFI may call for attention to maintain and improve its reliability.

Figure 142. IPL and MidAmerican's rural and urban SAIFI without major interruptions



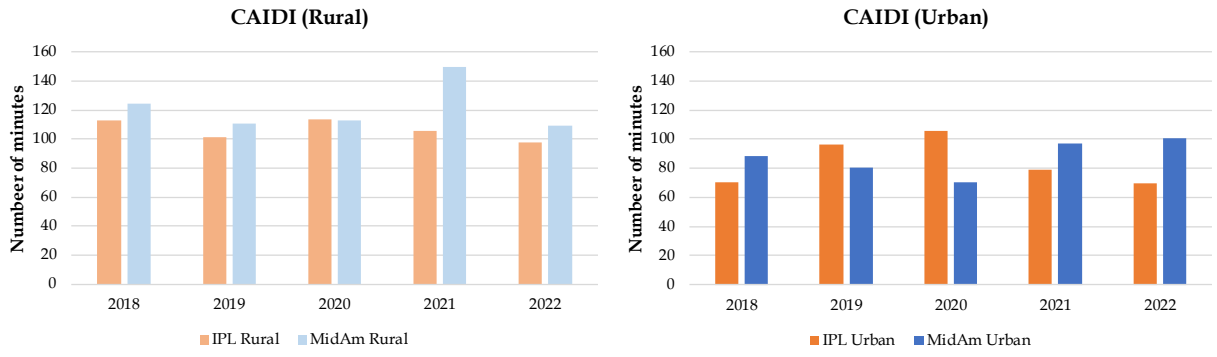
Source: IPL's 2022 annual reliability report & MidAmerican's 2022 Iowa annual electric reliability and service quality report.

Over the same period, IPL's rural CAIDI showed a decrease for 2020-2022, suggesting an improvement in the duration of service interruptions. MidAmerican's rural CAIDI displayed significant variability, peaking in 2021 before declining in 2022, yet its average remained higher than IPL's, indicating potential areas for improvement in reducing interruption lengths.

In urban areas, IPL's CAIDI varied with an increase from 2018-2020 but a decrease from 2020-2022, indicating progress in minimizing the duration of urban service interruptions. MidAmerican's urban CAIDI saw less variability over the last two years, pointing to a relatively stable service with some recent challenges in reducing the duration of interruptions.

In summary, IPL's rural and urban CAIDI trends suggest strides in reducing the length of power outages, with urban areas showing significant improvement. MidAmerican demonstrates consistent urban service delivery but faces challenges in rural areas, as indicated by the recent increase in CAIDI, which may highlight a focus area for their reliability enhancement efforts.

Figure 143. IPL and MidAmerican's rural and urban CAIDI without major interruptions



Source: IPL's 2022 annual reliability report & MidAmerican's 2022 Iowa annual electric reliability and service quality report.

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